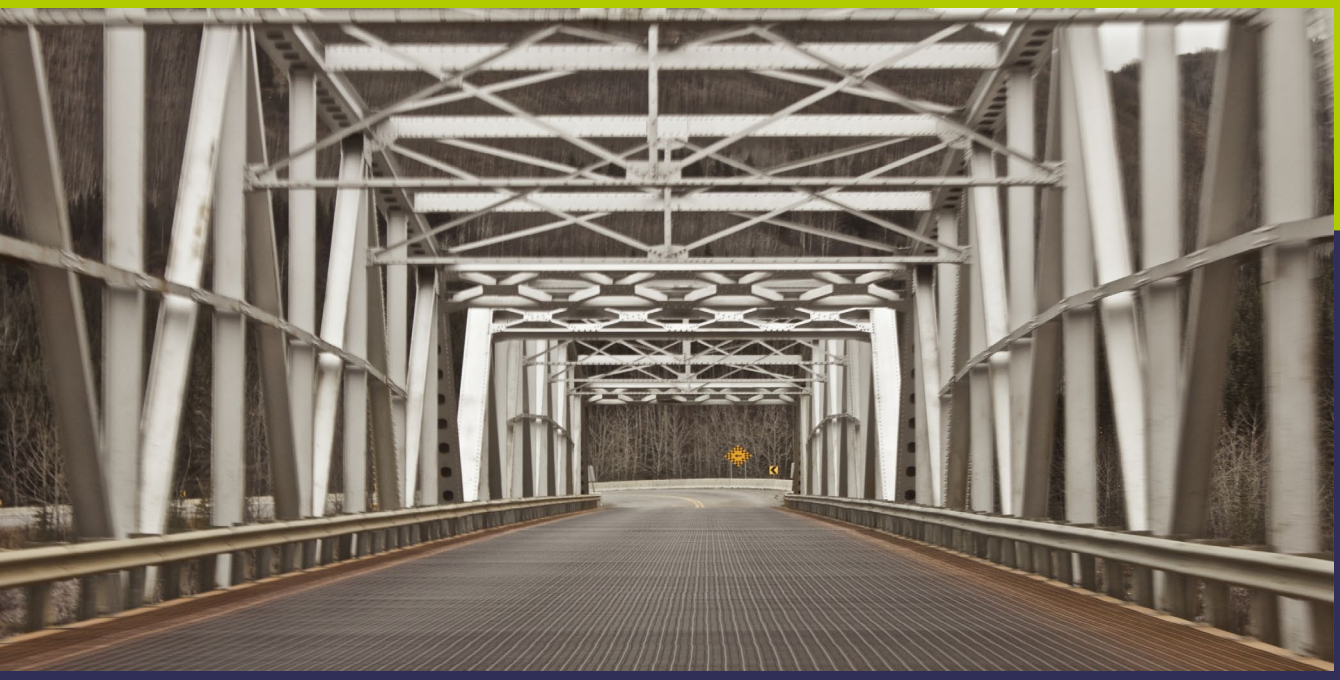
European Commission

EUROPEAN BARRIERS IN RETAIL ENERGY MARKETS



ESTONIA
Country Handbook

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Energy

EUROPEAN BARRIERS IN RETAIL ENERGY MARKETS PROJECT: Estonia Country Handbook

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

SUMMARY

Project Outline

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

The Context

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

Objective

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

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

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

Competitor Perspective

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

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

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

Scope & Scale of Research

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

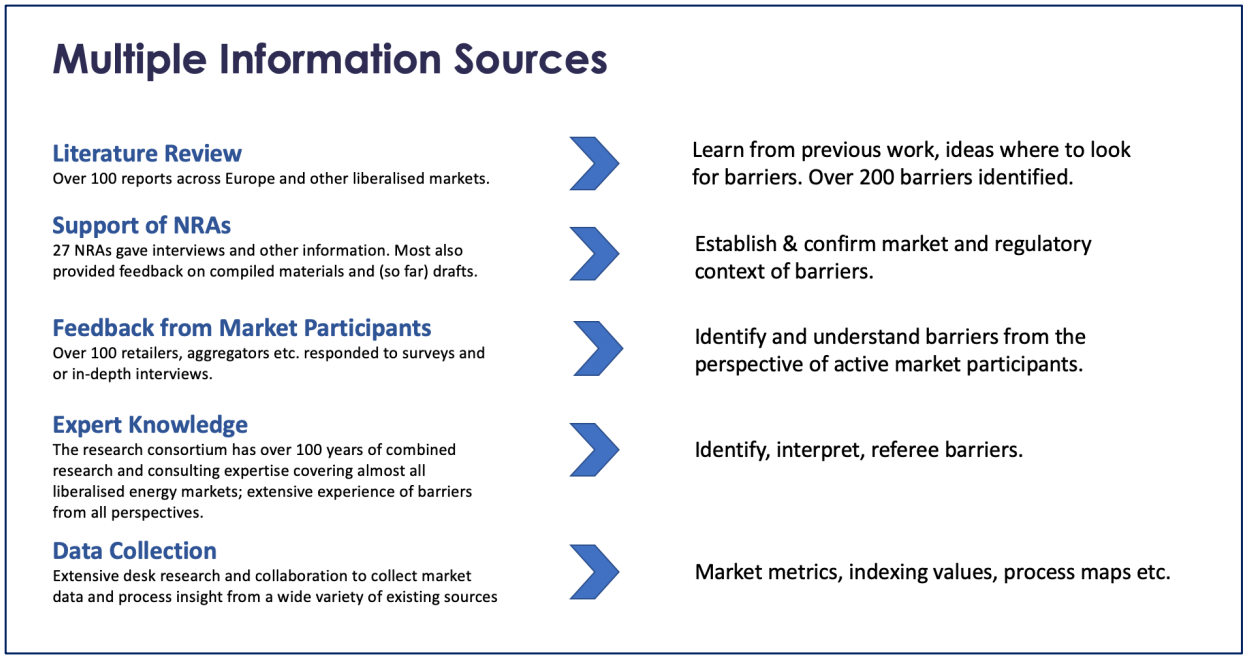
The project focuses on retail (supply), including also demand aggregation services, other additional offerings and new model retail, especially relating to the household segment customers (in some markets households and smaller SMEs may be difficult to distinguish). The project additionally concentrates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

Sources of Information

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

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

Figure 1 – Multiple Information Sources



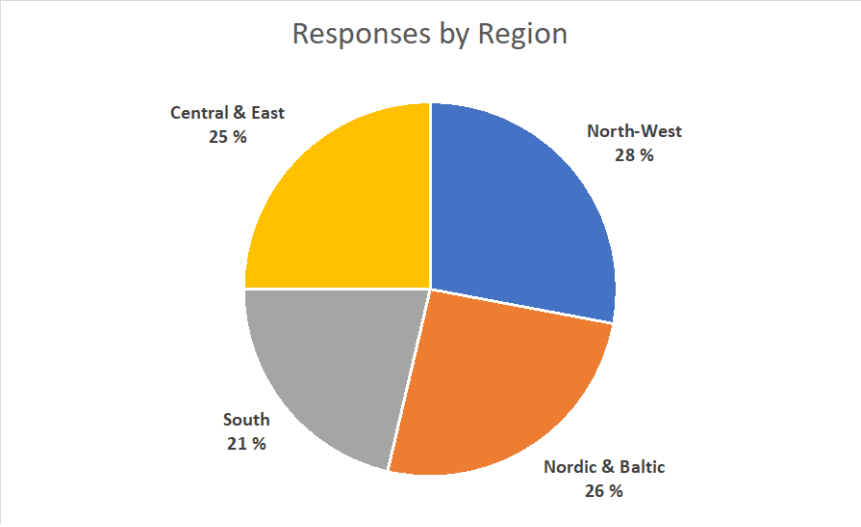
Surveys & Interviews

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

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

The Competitor Sample

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



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

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

Confidentiality

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

e.g. a brand-new entrant in a market with one brand-new entrant) stated that if we revealed that they were a new entrant the market authority would instantly know who they were and that they were afraid it might inhibit their entry process.

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

Deliverables

The project has three key deliverables:

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

The Barrier Index and Ranking

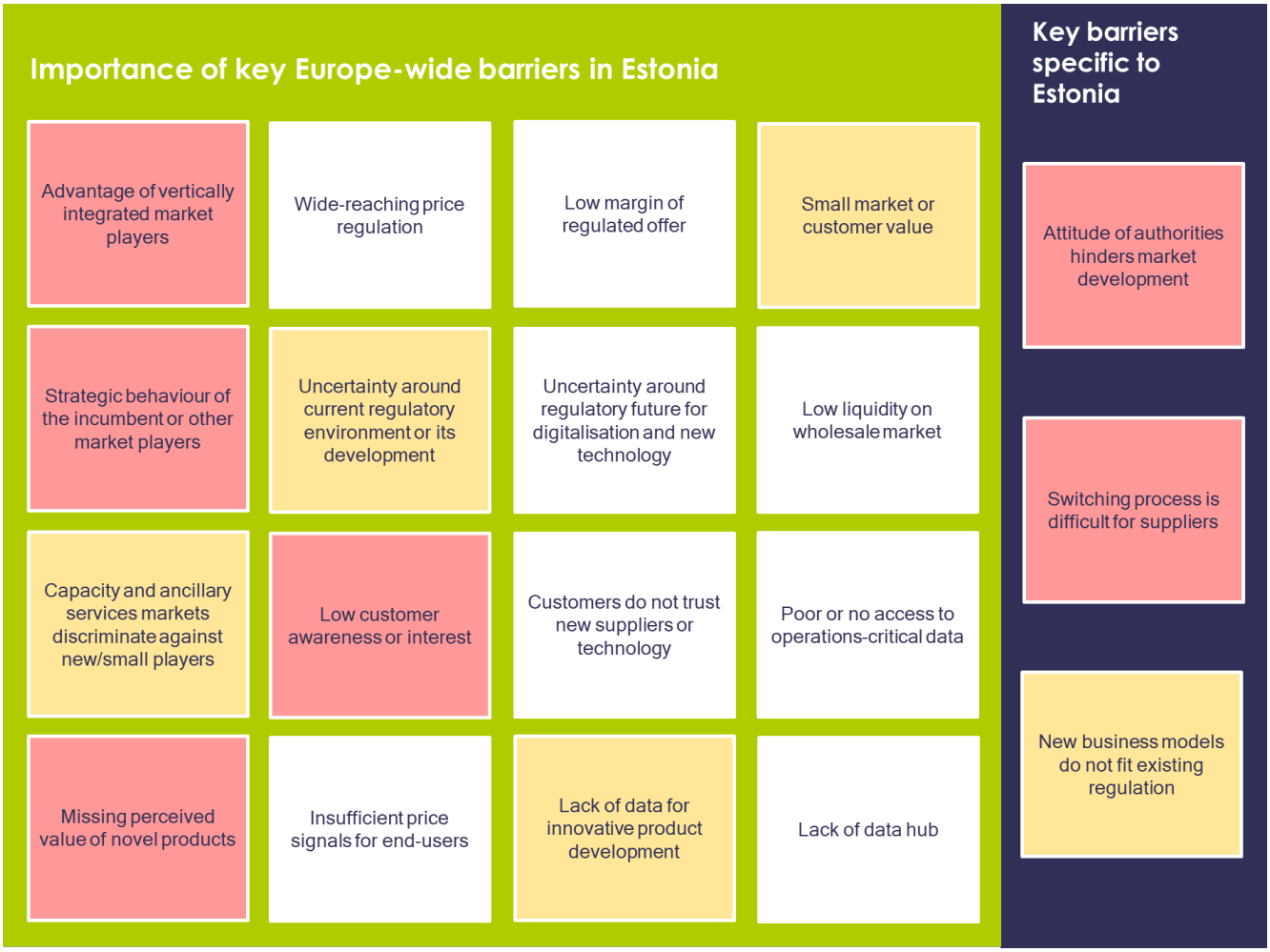
The purpose of the 'European Retail Energy Market Barriers Index' is to enable a degree of comparability between the barriers' context in each of the markets. It is based on metrics that can be collected for all markets, metrics for which available data currently exists. As such it provides a simple,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

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

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

Key barriers in the Estonian market

The following figure highlights the key barriers identified in the Estonian 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.

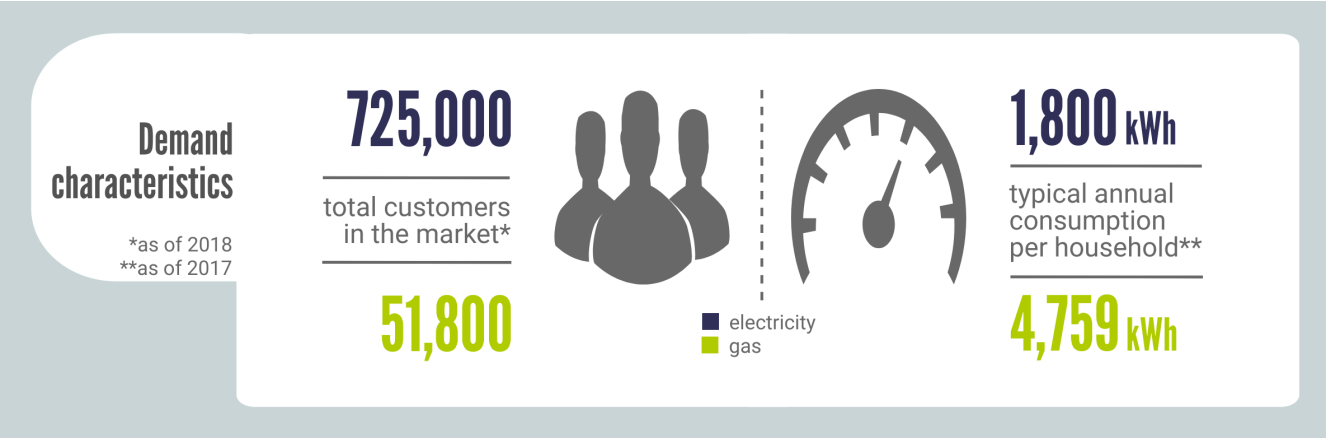
Has been identified as an issue in this country and is supported by facts, data or substantial respondent evidence in light of limited initiatives deployed by institutions to control or overcome the issue.

Key recommendations

The Estonian market is developing well but remains characterized by a single dominant, vertically integrated, ex-monopolist incumbent. Several barriers to new entrants attracting customers persist and relieving some these would likely boost the market.

- **Data advantage of the incumbent.** If all suppliers could access historical consumption profiles, the playing field could be levelled with regards to e.g. targeted pricing.
- **Switching process.** The schedule of the current switching process gives the existing supplier, i.e. usually the incumbent, an advantage in winning back customers before completion of the switch. A more consistent reporting timeframe, in which all parties are notified of switches simultaneously and/or prevented from immediate win-back, could improve the ability for new entrants to retain customers once they have attracted them.
- **Authorities are perceived as reluctant.** The regulatory atmosphere was felt by market players not to be welcoming towards new players or towards developing the market away from the incumbent-dominated structure. A more open attitude, including information-sharing and consultation, could improve how new entrants perceive the regulatory environment and hence encourage market activity.

MARKET OVERVIEW



Market background

Estonia was the first of the Baltic states to liberalise its energy market for household customers, opening fully to all consumers – provided they have a valid network connection - in 2013. The Nordic-Baltic electricity exchange, NordPool, started operations in Estonia already in April 2010, with the first stage of market opening (large consumers; 35% of the market), and the XBID platform for cross-border intra-day trading launched in Estonia in 2018. There is an ongoing project to increasingly integrate the balancing power markets of the Baltics with the Nordic market. Upon liberalisation, market activity was initially high, with a switching rate of c. 10%, with the ex-monopolist incumbent's market share declining from 87% just before liberalization to 59.5% in 2017. The number of sellers with more than 5% market share has increased from 2 to 5 since liberalization, indicating that the playing field has been opened.

Competition on the gas market was opened in 2007, starting with the non-household segment. This segment is now completely deregulated; the household segment is fully opened to competition and customer choice, with some government-mandated limits on the margins allowed by the dominant supplier. The Estonian gas market is small, with gas (including LPG and oil shale gas) accounting for only c. 8% of Estonia's total energy consumption in 2016. Moreover, gas consumption has broadly been decreasing over the last decade by c. 5% per year and is expected to decrease further. Most gas is used for heating, particularly district heating, but these facilities are being converted to use renewable fuels, especially biomass, reducing the need for gas.

Market structure

The regulator is Konkurentisamet (Estonian Competition Authority). Elering is the TSO for both electricity and gas, which have 34 and 23 DSOs respectively. In 2019 there were 7 electricity (six incumbent) and 7 gas (six incumbent) active suppliers available to household customers in the capital. For electricity, the incumbent, Eesti

Energia, remains the largest producer as well as supplier, with almost 60% market share. The three largest sellers together account for 80% of market share. In gas, Eesti Gas (the ex-monopolist incumbent) held 55% of retail market share (in 2017) and because of its dominant market position is subject to extra oversight to ensure it does not abuse that position. For example, its price setting for household customers is regulated based on wholesale price plus a maximum sales margin, including operational costs, which is approved by the regulator.

Estonia is still heavily dependent on fossil fuels, although production from wind, hydro, biomass and municipal waste has broadly been increasing over the past decade. In 2018, requirements such as financial demands were made easier for small producers, to promote smaller-scale generation (tending to favour renewable, decentralized generation).

State of unbundling

The TSO Elering, established in 2004 and recertified according to EU requirements in 2013, is now owned 100% by the Estonian state after being unbundled and bought from the incumbent supplier in 2010. DSOs are partly unbundled, requiring supply to form a separate business entity if it has more than 100 000 network customers. In such cases, the network business is prohibited from providing any other services or goods than network service. However, ownership unbundling is not required, and so the largest electricity DSO, Elektrilevi OÜ with an 87% networks market share, is part of the same group that owns the ex-monopoly incumbent, Eesti Energia. All other DSOs are small enough to be exempt from functional unbundling, but must publicly show accounting unbundling between their network, electricity sales, and other services.

Generation and interconnections

Estonia is a net exporter of electricity and has sufficient domestic production to cover its own demand, including peak load, mostly powered by domestic oil shale. The regulator expects this to persist at least to 2023. For international trade, Estonia's electricity grid is interconnected with Russia, Finland (recently expanded) and Latvia (expansion ongoing). Recent connections between Estonia's Baltic neighbours and other member states (e.g. *NordBalt* between Lithuania and Sweden, *LitPol* between Lithuania-Poland Similarly to its Baltic neighbours) also improve Estonia's ability to trade effectively with a wider market and hence improve competition and even out and lower end-user prices.

Like its Baltic neighbours, Estonia's electricity grid still operates in a synchronous way with the Russian and Belarusian systems. The EU is actively seeking to integrate electricity and gas markets more deeply across the Baltic region, to achieve more competition and security of supply with less dependence on Russia[1]. With political support from the European Commission, the Baltic countries are planning to detach their electricity systems from the Russian system in favour of increased connection with the Central European system, with completion planned to the end of 2025. Regional and European integration in other aspects is ongoing, with an explicit Baltic Capacity Calculation Region established together with the regulators in the other Baltic states, Finland, Sweden and Poland. Together the region is working towards joint codes for capacity allocation and congestion management. The

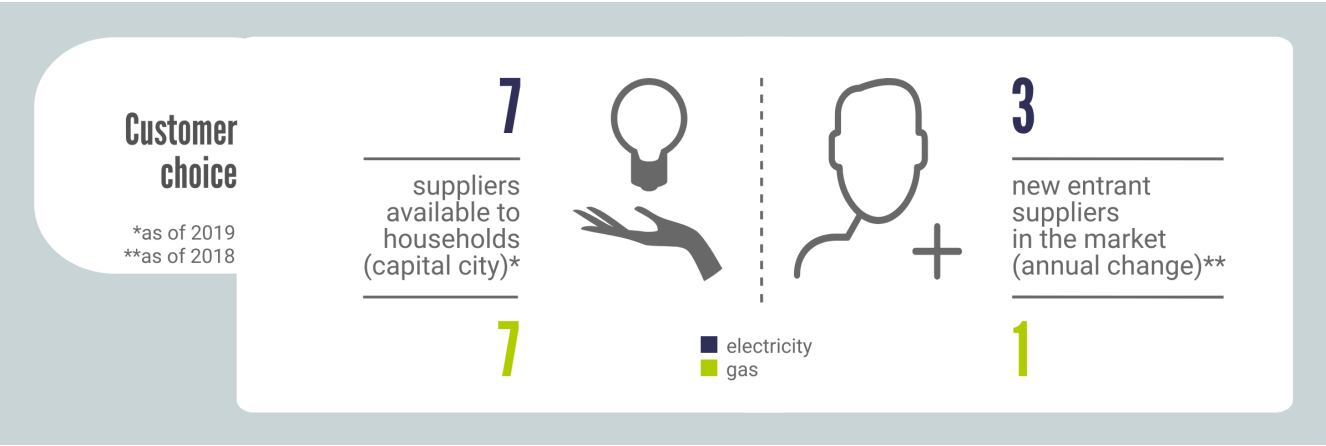
[1] Baltic Energy Market Interconnection Plan (BEMIP): https://ec.europa.eu/energy/en/topics/infrastructure/high-level-groups/baltic-energy-market-interconnection-plan

balancing power markets of the Baltics are increasingly integrated with the Nordic market; for some years it has already been possible to exchange bids for mFRR products between Baltic and Nordic balancing market, for example.

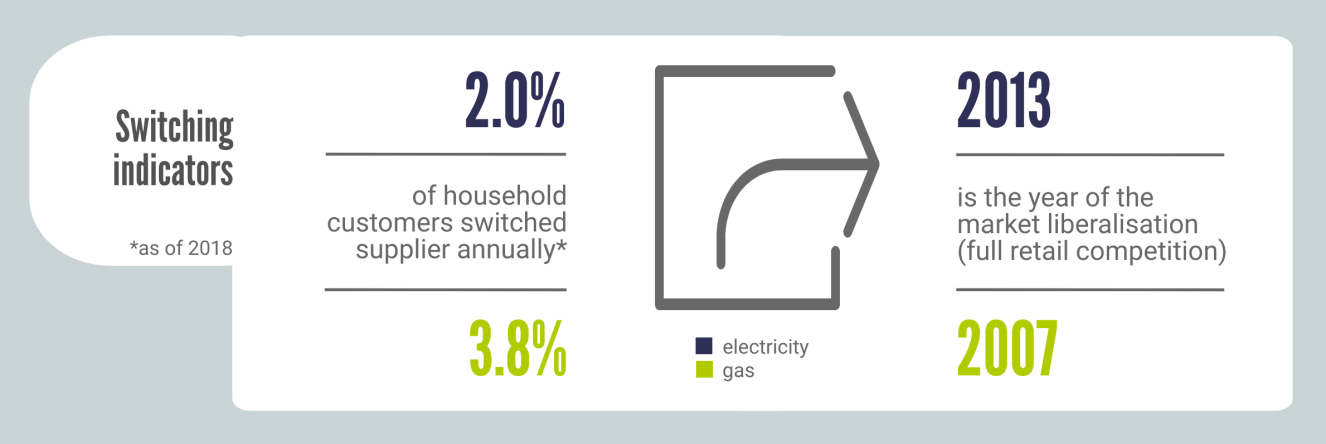
Much of Estonia's gas (88%) is still provided by Gazprom through Russia, although imports through Lithuania, including LNG, are increasing. The Estonian gas market is actively being strengthened and integrated with neighbouring markets, with a fusion with the Finnish and Latvian (FinEstLat market area) gas markets to launch on 1st January 2020 when the new Baltic-connector between Finland and Estonia will also be commissioned. A single gas transmission tariff was established already in spring 2019, and 2020 will see Finland join the GetBaltic wholesale exchange, easing market functioning within this zone. Until 2022, the FinEstLat market area will consist of two balance zones (Estonia-Latvia and Finland), with Finland joining the Estonian-Latvian zone in 2022 to create a common entry-exit area. A harmonised Baltic-Finnish pricing model to support full market integration is under development, notwithstanding the Lithuanian TSO suspending its participation on account of financial disagreement.

Status of competition

Despite reasonable market activity immediately following liberalization, switching rates in electricity have declined in recent years to only 2%, in 2017. The competitive landscape has remained rather flat, with most changes due to mergers and exits rather than new entrants succeeding, suggesting a non-dynamic market. Nonetheless, the number of sellers with more than 5% market share has increased since liberalization, indicating that the playing field has been opened to some extent. Three new suppliers entered the market in 2018. Electricity contracts tend to be open-ended. Dynamically priced spot-based contracts are now generally the cheapest alternative for household customers and are increasingly popular, despite fixed-price contracts becoming cheaper in the last few years.



The situation in gas is similar, with the ex-monopolist incumbent remaining dominant and low switching rates of 3.8% and only one new supplier entering the market in 2018. Within the small gas market, households accounted for only 13.5% of gas consumption in 2016; the biggest customer segment was district heating, accounting for 36.3% of consumption, followed by industry (excluding agriculture; 26.3%) and services (18.7%).

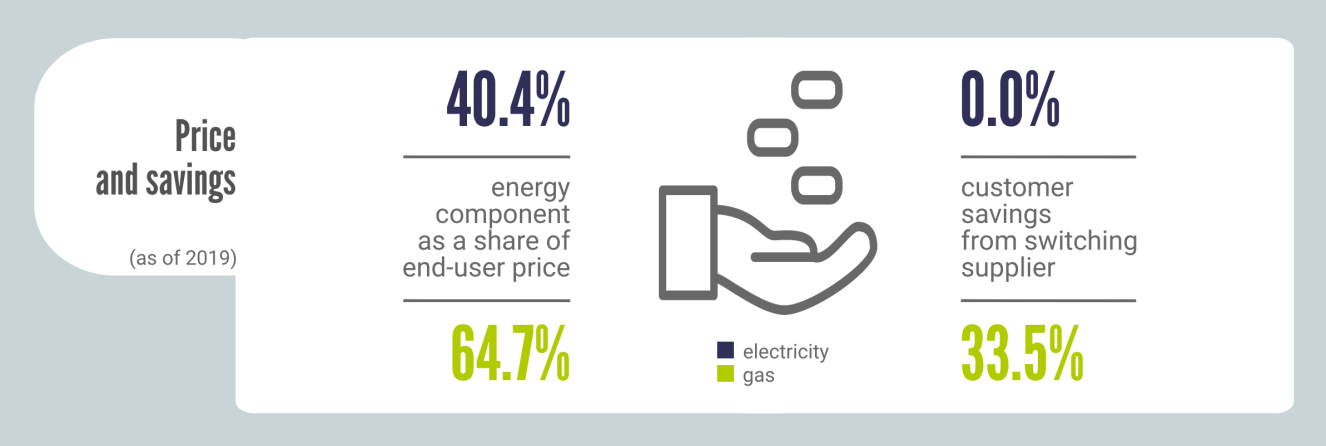


Political and regulatory orientation

Overall, the authorities are in favour of competition and value the importance of functioning, open energy markets. Nonetheless, the ex-monopolist incumbent retains a key role in the market and hence in how authorities approach market development. Changes to support competition and innovation are gradually being implemented, albeit at a rather slow pace, and in 7 years of an active electricity market the incumbent's overall share has fallen significantly.

Regulatory market characteristics

There is no longer any regulation of household electricity or gas prices. For customers on "universal service" from the DSO (those who have not actively chosen a supplier), prices are obligated to be reasonable and justified, and are spot-based with an added margin that is slightly above competitive margins. The regulator sets the allowed margin but does not directly approve these prices. However, this only applies to a small part of the market (16% in electricity). There is no licensing requirement as such for entering the market, new actors need only register with relevant authorities. Combined billing – with energy and distribution costs in a single bill – was extended to the entire electricity and gas market in 2019. No major developments to the market are planned, but ongoing changes will have an influence on market function and possibilities for suppliers over the coming years. Important changes in progress include developments in balancing market, introducing 15-minute settlement, and developing fast reserve markets (aFRR and FCR) by 2025 in concert with the system detachment from Russia.



Other market characteristics

Since liberalization, end-user prices have been relatively stable, though rising gently for electricity, and low. However, from 2016 to 2017 household gas prices increased by 20-40% (depending on the type of accommodation), partly driven by an ongoing progressive increase in tax on natural gas. Estonian electricity wholesale prices tend to be higher than the Nord Pool system average. Margins for suppliers are low, with substantial differences in profitability between the incumbent and new entrants (see Barriers chapter, section 2.1 below). The share of the energy component in the end-user price is relatively high for electricity and very high for gas.

Context for aggregation/demand response

Improved DR would serve both climate and energy independence goals, but demand-side management and aggregation are not yet well developed in Estonia. Smart meters for daily reading were introduced for all consumption points by 2017, and smart meter data is now passed hourly to the Data Hub, so an important infrastructure requirement for consumer participation in the markets is already in place. Hourly smart metering will also be introduced for gas (> 750 m^3 annual consumption) from 2020. The TSO has also developed a smart grid data sharing platform, Estfeed, linked with the Data Hubs of several other countries in the Baltic-Nordic region, which is expected to facilitate independent service providers to use smart metering data to develop and offer new services for consumers in several countries.

The regulator is in principle interested in novel steps towards a more decentralized, responsive power system, and sees it as a priority to engage flexibility and demand response at all market levels. Estonia has participated in a pilot project for a platform for independent aggregation, intended to exploit flexibilities in the power system both to maintain system balance and meet the needs of DSOs and BRPs, creating opportunities for new business models and flexibility asset owners (DR and independent aggregators) to take part in the market in advance of the Clean Energy Package. This was a success in that the market principles that were developed for this project are

still in force and commercial DR activity now contributes to the mFRR market on a daily basis. Independent aggregation is also allowed to bid into the balancing market.

However, on the market side, balancing products (and indeed Estonia's and its Baltic neighbours' entire electricity grids) function in a synchronous way with the Russian power system, so any demand-side balancing products must integrate into this cross-border system. Manual reserves (mFRR) are triggered and their market operated by the national TSOs, while Russia operates the fast reserves (FCR and aFRR). However, this situation will change in 2025, when the Baltic systems are planned to desynchronize from the Russian system. It is already possible for Baltic TSOs to offer fast reserves to the Nordic countries through HVDC links and to trigger them.

BARRIERS

The European Barriers to Entry and Competition in Retail Energy Markets project has researched barriers across 30 European markets. From this research, barriers to entry have been identified and grouped into four over-arching pan-European barriers' blocks.

Over-arching pan-European barrier blocks

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

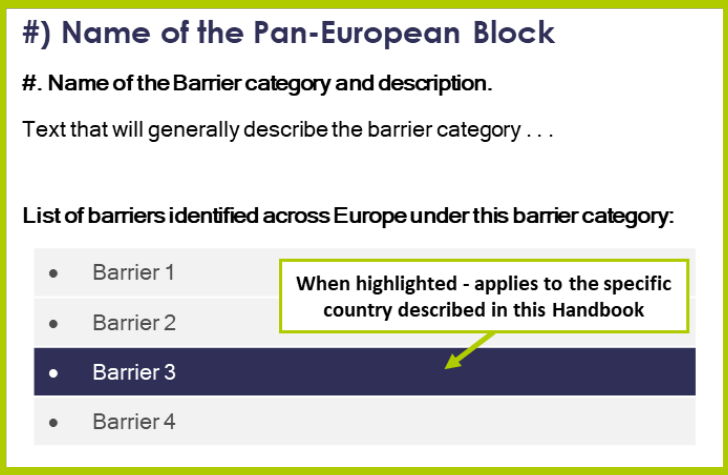
Description of the four over-arching pan-European barrier blocks:

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

HOW TO READ AND INTERPRET THE FOLLOWING SECTIONS

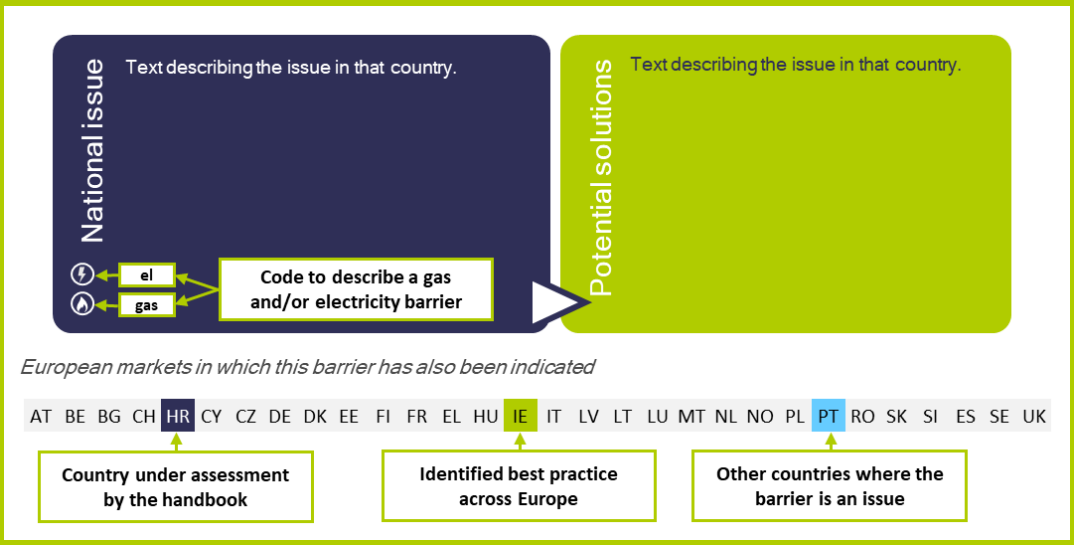
Each of the following four chapters explores one of the four pan-European blocks of barriers and report how each sub-category barrier apply to Estonia. When a barrier applies to Estonia, it will be highlighted in the table following a general description of the barrier itself as shown in the example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



As shown in the figure above, 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 does it mean that suppliers raised it as a barrier, and that it is a prevalent issue in Estonia.**

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
- suggesting potential solutions to the problem as depicted in the figure below.



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

For additional market context, please refer to Appendix 1. Processes, 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[2]:

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.
   According to CEER[3], 14 European countries out of 27 answering a recent CEER survey have price intervention in electricity for household consumers. 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. Across Europe, the following specific barriers related to price regulation were detected by this study. Those highlighted in blue have been raised, indicated or identified as barriers in Estonia:
   - 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. Across Europe, the following specific barriers related to "burden(-sharing)" were detected by this study. Those highlighted in blue have been raised, indicated or identified as barriers in Estonia:
   - 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

[2] Please note: these definitions are Europe focused, not specific to Estonia. Highlighted barriers have been identified as country specific.
[3] Monitoring Report on the Performance of European Retail Markets in 2018. CEER Report 4 November 2019.

market regulation evolve rapidly. Transposition of regulation into the national regulatory frameworks is not always smooth and NRAs' actions are sometimes unpredictable. This leads to uncertainties for suppliers related to unclear and unknown future developments of the regulatory framework, including the attitude of the institutions that regulate the retail market and oversee market operation and organization. This uncertainty is a barrier that impacts suppliers' business, preventing their entrance in the market, making strategic business planning difficult or forcing them to adopt different approaches during operation. Across Europe, the following specific barriers related to "unpredictability of regulatory framework" were detected by this study. Those highlighted in blue have been raised, indicated or identified as barriers in Estonia:

- 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). Across Europe, the following specific barriers related to "innovation-friendliness" were detected by this study. Those highlighted in blue have been raised, indicated or identified as barriers in Estonia:

- 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 does not incentivize novel products (missing perceived value)

1.1 Description of regulatory disincentivisation barriers in Estonia: Price regulation

No prices are explicitly regulated in Estonia, and hence no barriers around price regulation were identified in this market.

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

No barriers around burdens on suppliers or burden-sharing were identified in Estonia.

1.3 Description of regulatory disincentivisation barriers in Estonia: Regulatory unpredictability

Suppliers face uncertainty because of a newly liberalized regulatory environment or uncertain future development of the regulatory framework. In the research this barrier was raised as an issue in Estonia. Suppliers experience uncertainty because of unpredictability around what the future regulatory framework will look like and hence what business opportunities will be possible.

National issue

Survey respondents reported that the regulatory environment feels uncertain. This hinders business decisions on entry and development in the market. The uncertainty does not concern specific policies but rather whether the regulator is motivated overall to improve the situation for competition.

Potential solutions

To some extent, uncertainty around regulatory developments is unavoidable in an evolving energy system. In several other markets, uncertainty for suppliers has been linked with poor communication by the authorities with market players. Sharing plans or considerations can help give market players a more secure feeling of where the market is going, and hence future business environment, even if those plans are not yet well developed.

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 caused by industry actors influencing legislation, e.g. incumbent or associations shape legislation. Although not having been specifically raised by any survey participant, our studies of this market suggest that this could pose a barrier in Estonia. While cooperation between authorities and market actors is essential for functioning and lasting market developments, certain industry actors may have too much power in shaping legislation. This keeps legislation designed to benefit of these actors to the detriment of other actors, customers or market competitiveness.

National issue

Although not explicitly raised by study respondents, their concerns around regulatory uncertainty and the authorities' attitudes point towards the incumbent retaining influence over legislation and policy that new entrants do not have. This could give the incumbent potential to skew market structure and function in its favour.

Potential solutions

The market would benefit from the regulator giving more active consideration to other players than the incumbent when shaping market developments and legislation (see following section).

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
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

Attitude of authorities hinders development of the market. In the research this barrier was raised as an issue in Estonia. The regulator is not felt to prioritise a well-functioning competitive energy market. This atmosphere can discourage new entrants and novel developments and may also favour the incumbent through inertia around regulation to decrease its market share.

National issue

Despite several recent actions by the regulator to increase competitiveness and innovation on the markets, suppliers felt that the Estonian authorities are satisfied with simply achieving a functioning market rather than an effective one. This places smaller, independent or new suppliers at a disadvantage, because a theoretically open market can remain dominated by the ex-monopolist incumbent due to its historical advantages unless regulatory steps are taken to level the playing field. When changes are made, they are often felt not to be in the interests of the market, and market players report that despite the decreasing switching rate there is no evidence of the authorities taking steps to activate the market. Aligned activities by the regulator and competition commission may lead to conflicts of interest in rules and monitoring.

Potential solutions

Large-scale projects such as integrating the gas market across the region, seeking common regional balancing markets, and beginning to bring DR onto the market show that the authorities do have a desire to develop market efficiency beyond its current traditional structure. Nonetheless, in the day-to-day environment experienced by independent suppliers, a broader regulatory perspective on the market would help shape the market environment to benefit all actors, e.g. acknowledging the subtle advantages that only the incumbent can leverage to retain customers at the expense of new entrants.

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
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 Estonia: Access to innovation

Barriers around demand response, aggregation and other novel services were difficult to identify in Estonia as there are few commercially active DR products and only a nascent prosumer market. Although no barriers around innovation were raised by respondents, our studies of other markets suggest that issues such as data accessibility, customer access, or regulation around novel business models ***could yet present barriers*** *to DR, aggregation of distributed energy resources and other novel products and services as they become more commercially established.*

No fit between new business models and existing regulation/obligations. From our studies of this market, it appears that this could pose a barrier in Estonia. Regulatory frameworks need to provide a secure environment for piloting and further developing new business models. 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 roles and responsibilities of market actors involved in novel services and products remains very unclear, leading to conflict over who should pay which costs. For example, a 2017 pilot study on aggregation foundered due to disagreement between the BRP and aggregator over an appropriate settlement model. This illustrates both the extent to which roles must still be defined for efficient demand-side market functioning, and how far market participants' attitudes lag behind the technological potential for demand-side market products.
Nonetheless, several technological limitations also affect the development of regulation for novel services, such as not having common methodology for calculating baseline consumption (each DR provider does this independently) and insufficient functionality in data exchange.

Potential solutions

Although it is understandable that established, traditional market players are not positive towards more novel actors entering the market, improved clarity around role definitions would set a clear regulatory framework within which to develop relationships between the actors. The regulator is already developing an overall framework for DR and improving the settlement model currently in place. Discussions regarding market models for DR are also ongoing, to ensure they are suitable for all market players.
In addition, the TSO is in the process of upgrading the Data Hub to provide better service for DR and aggregation to improve the technical environment for novel players.

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

Market structures does not incentivize novel products (missing perceived value). In the research this barrier was indicated as an issue in Estonia. Without an existing demand and/or mindset for novel services such as DR, new entrants face the barrier of establishing the entire market before they can act in it, which can be especially challenging for smaller players and new entrants.

National issue

Missing perceived value was identified as a considerable barrier to innovation across the Estonian energy market. Additionally, given the limited competition between traditional suppliers, they are not driven to innovate beyond their core business. This is compounded by low margins (see section 2.1) leaving little capital or appetite for investments in novel products and services. It was noted among respondents that the market environment in Estonia lacks innovation, despite the TSO and regulator being regional leaders in terms of welcoming DR onto the balancing markets and lunching a Data Hub.

Potential solutions

Despite the market obstacles to DR, players in other innovative products – solar, storage, EV charging etc. - have not met any innovation-specific hindrances. Indeed, market players cited sustainability-related developments as some of the most important recent innovations in Estonia's energy sector. Nonetheless, activating the energy market that is experienced by actors on the ground - currently perceived as slow-moving (see e.g. sections 1.3, 2.1, 4.1) - would likely open up currently unavailable market opportunities for innovation.

European markets in which this barrier has also been indicated

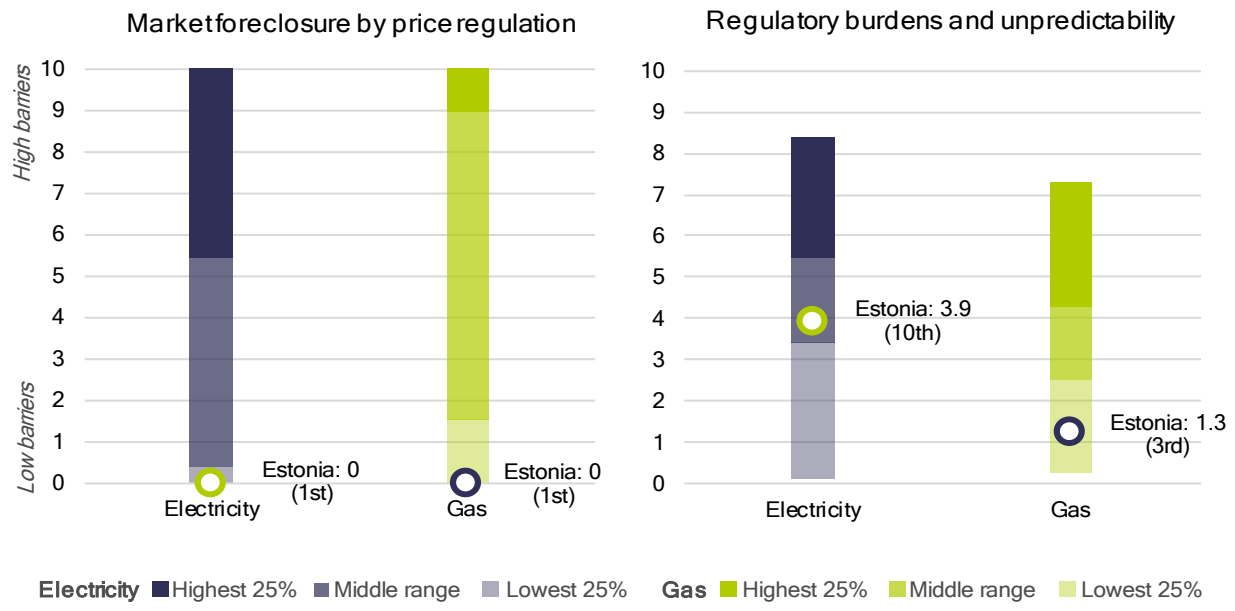
AT BE BG HR CY CZ DE DK EE FI FR EL HU IE IT LV LT LU NL NO PL PT RO SK SI ES SE UK

1.5 Estonia'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 Estonia 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 a high share of customers is supplied at regulated price, and the mark-up is significantly lower than the average mark-up in 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



With no price regulation in either market, Estonia ranked joint 1st across Europe on price regulation. Regulatory burdens ranked 10th for electricity and 3rd for gas.

2) Market inequality

Within market inequality, barriers across Europe have been sub-categorised into two areas encompassing 8 specific barriers[4]:

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

   In order to avoid confusion among end customers between the separate parts of integrated energy businesses, brand unbundling has been a focus area for NRAs over the last years. Nevertheless, in several EU countries, the difference in the branding of the supplier and the DSO is perceived as insufficient. Strategic and unfair advantages for incumbent suppliers around transparency, pricing and access to information and data occur in most of the European countries studied. Access to production

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

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 related to "unbundling and market power" were detected by this study. Those highlighted in blue have been raised, indicated or identified as barriers in Estonia:

- 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. Across Europe, the following specific barriers related to "equal access to and maturity of wholesale market" were detected by this study. Those highlighted in blue have been raised, indicated or identified as barriers in Estonia:

- 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 Estonia: Unbundling and market power

Discriminating, strategic behaviour of incumbent, and obstruction by other market players. In the research this barrier was indicated as an issue in Estonia. The incumbent/existing suppliers are able to use tactics in pricing and customer access, e.g. targeted predatory pricing for certain customers to retain them, that are unavailable to newer players with a small customer base.

National issue

Strategic behavior by the incumbent was identified as a major barrier to independent supply activities. Thanks to its larger customer base, the incumbent can offer lower prices and hence keep margins across the market low. It can also exploit this in offensive pricing strategies, e.g. dumping prices for individual customers to dissuade them from changing supplier, that are not available to new entrants with a small customer base. Similarly, the incumbent's advantage in winning back switching customers (see section 3.1.8) means that new entrants lose many new customers immediately, after investment to attract that customer but before making any profit from that customer, which is not sustainable. Moreover, the incumbent retains influence with the TSO, and can justify favourable treatment by virtue of its high market share. For example, joint billing (preferred by customers) was first launched for the incumbent only, upon market opening, and was only opened to other suppliers four years later. This gave the incumbent an advantage in defending/attracting customers just as the market was becoming established.

Potential solutions

The market-dominant position of the incumbent in this ex-monopoly automatically puts it in a favourable position as defending customers is easier than attracting them. This is an unavoidable part of market opening, but specific instances of unfair exploitation of this power should be identified and addressed individually. For example, constraining companies' pricing options in a market-sensitive way could prevent individually-tailored price-dumping, and any market developments should be rolled out to all suppliers at the same time. The regulator is taking gradual steps to address some of these issues; combined billing, for example, was finally rolled out to the entire market in 2019.

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

"For new entrants, the doors to the market are wide shut."

Half of all nation-wide market players (2 suppliers) exited the market during the first 5 years of deregulation, indicating an unfriendly environment for new entrants. This is likely connected with a drop in switching rate from 10% to 2% in recent years, which illustrates the difficulty of new entrants to win customers.

Strategic, unfair advantage of vertically integrated market players and lack of transparency. In the research this barrier was raised as an issue in Estonia. Co-ownership of key market actors, the incumbent supplier and dominant DSO, gives these players to exploit advantages in access to customers and information unavailable to independent suppliers, allowing them for example to target customers based on consumption profiles or win back customers during the switching process. Co-ownership also opens the possibility of cross-subsidisation between distribution and supply, such as the DSO favouring its sister company when procuring services.

National issue

The incumbent, Eesti Energia, is co-owned with the dominant DSO, Elektrilevi, giving it advantages in access to customer information that it exploits. For example, joint billing, which customers prefer, remains administratively easier for the incumbent than independent suppliers. Elektrilevi has designated Eesti Energia as its provider for universal service (for inactive customers) and also procures from it services such as customer settlement and call centres.

It is notable that several DSOs, including the largest, have in recent years faced supervisory proceedings on account of their pricing not being cost-based as stipulated in regulation law. This suggests a readiness to exploit their monopolistic position, with potential gains for their associated supply company through cross-subsidisation.

Potential solutions

Stricter regulation and monitoring around how information is shared within the group, and how procurement is carried out, could reduce this barrier. In the longer term, the more extreme intervention of requiring full unbundling of DSOs would remove any commercial incentive for cross-subsidisation or within-group information flow.

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.

Discrimination against new and small market players in capacity and ancillary services markets. From our studies of this market, it appears that this has the potential to pose a barrier in Estonia, at least for the next few years. The balancing landscape remains focused on large-scale generation, making it challenging for the demand side or aggregated small-scale generation to participate fully.

Estonia's energy system, like the other Baltic countries, still works synchronously with the Russian system. Baltic TSOs are responsible for system control and manual reserves, but Russia maintains control of triggering fast reserves. Decoupling the Baltic national systems from the Russian system is hoped to be implemented by 2025; until then, DR will likely be restricted to the mFRR at best due to challenges in developing larger-scale products compatible with this coupling.

National issue

Currently, only generation can participate in most of the Baltic balancing market, with only one market participant in each country. This was not explicitly raised as a barrier by respondents, but it appears that this is a consequence of the lack of DR actors interested in accessing the balancing market. There remains clear potential for a concentrated balancing market with products focused on generation to pose an entry barrier for smaller, demand-side players. In available products, the minimum bid size is 1 MW, which is achievable for small-scale generation but not in practice for DR given the small market.

Potential solutions

Estonian-controlled balancing products are already open for aggregated and demand-side bids. Generation-focused balancing markets in other European markets, e.g. Finland, have made successful steps towards welcoming demand-side actors by actively designing products suitable for the size, response time and availability of demand side bids. This requires the authorities to want to integrate DR into the energy system in order to make the necessary developments.

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 EXAMPLE: Consumption bids in balancing

Several respondents active in aggregation and demand response expressed satisfaction at how Finland has redesigned balancing products to make them amenable for demand-side bids, complemented by its market-centric approach to DR. This indicates a willingness to let flexibility play a bigger part in the evolving energy system. Indeed, Finland's attitude to DR is positive and flexible, with respondents feeling that Fingrid is easy to work with and open to novelties. Many of the market structures for DR are an example of how to incorporate demand-side flexibility into the energy system. Some products are necessarily constrained by e.g. fast response times or minimum bid size due to their function, which make them difficult for DR providers to fulfill. However, open-minded amendments such as allowing pooling of loads, enabling step-wise activation or reducing minimum bid size where possible have opened up several products to DR. Developments remain ongoing, e.g. imbalance settlement for aggregators is currently under discussion. Progressive changes at the consumer end have also helped open the aggregation market in Finland, for example allowing 3rd party providers to access customers. Market players reported that the other Nordic countries are now developing in the same direction that Finland already has done, in this and other DR- and novelty-related aspects.

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

Low liquidity in the wholesale market. From our studies of this market, it appears that this could pose a barrier in Estonia. Insufficient liquidity in the wholesale market can act as a barrier to operation as it leads to higher prices and risks, and therefore increases sourcing costs. These risks are especially high if players with large market

share are able to withdraw their production from the wholesale market, potentially discriminating against other players.

National issue

The majority (83% in 2018) of Estonia's gas is still provided by Gazprom from Russia and hence not governed by EU regulations. This makes it difficult to ensure effective wholesale market functioning e.g. price formation. Moreover, wholesale market concentration is high with Eesti gas, the dominant supplier, holding a 67% share in 2017; consequently, the regulator has established that gas market liquidity is not yet sufficient.

Potential solutions

This market structure is predominantly a historical legacy, and is already developing towards a more open and liquid structure. For example, imports from Lithuania are increasing at the expense of Gazprom, and opening up more international connections through e.g. Balticconnector, launched in early 2020 should encourage competition on the wholesale markets. At the same time, an increasingly diverse supplier landscape will improve wholesale market concentration.

European markets in which this barrier has also been indicated

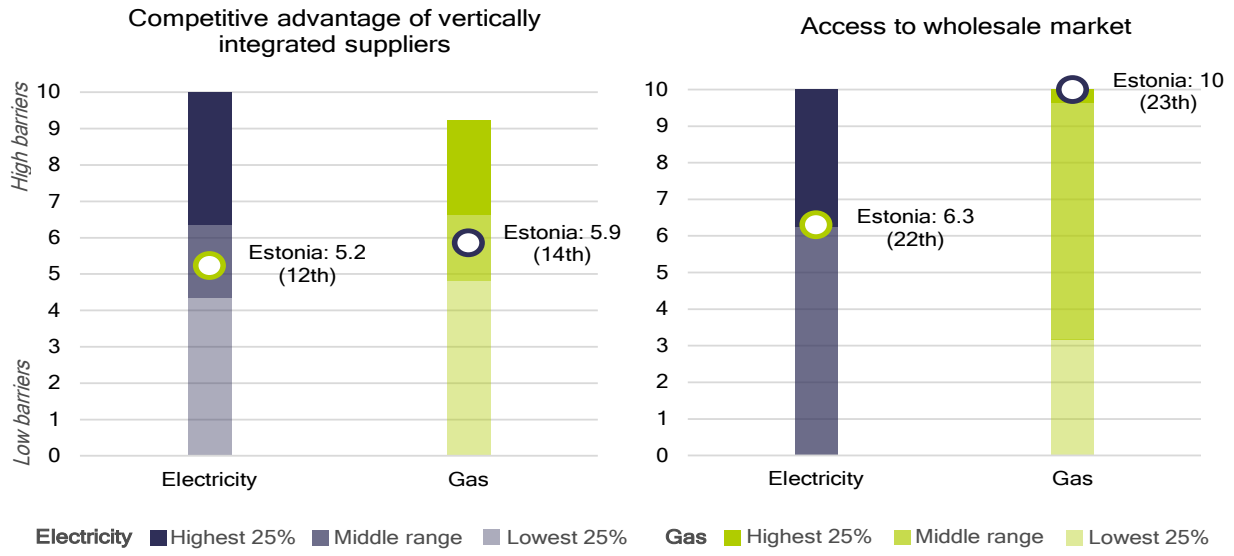
AT BE BG HR CY CZ DE DK EE FI FR EL HU IE IT LV LT LU NL NO PL PT RO SK SI ES SE UK

2.3 Estonia'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 Estonia are shown against the range across all analysed countries. These scores contribute to the performance index. The performance indicators of market inequality are the following:

- **Competitive advantages of vertically integrated players.** The index consists of two sub-indicators, the market share of vertically integrated suppliers (on the residential competitive 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



Despite the process-related issues raised by suppliers around incomplete unbundling, Estonia ranked moderately among all analysed countries on the competitive advantage of vertically integrated suppliers (12th in electricity, 14th in gas). However, equality in terms of access to the wholesale market was ranked relatively poorly (22nd and 23rd).

3) Operational and procedural hindrances

Within operational and procedural hindrances, barriers across Europe have been sub-categorised into two areas encompassing 13 specific barriers[5]:

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

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

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 related to "sign-up & operations compliance" were detected by this study. Those highlighted in blue have been raised, indicated or identified as barriers in Estonia:

- 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

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. Across Europe, the following specific barriers related to "data access & processes" were detected by this study. Those highlighted in blue have been raised, indicated or identified as barriers in Estonia:

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

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

Highly complex or country-specific systems & processes. In the research this barrier was raised as an issue in Estonia. The systems landscape (forecasting, customer service etc.) can require significant costs, especially when first being established or updated in response to new legislation, which can be harder for small suppliers to bear. 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

Recent changes to legislation will require suppliers to acquire new IT systems, which will be harder for smaller companies to implement due to economies of scale.
Although systems are somewhat country-specific, this was not seen as a barrier by market players: it was considered sufficient that markets and their requirements are transparent.

Potential solutions

Legislative impacts on systems should be assessed to ensure they do not discriminate against smaller or newer actors.
Cross-border interoperability was raised by actors in other closely related markets, e.g. the Nordic markets. If Estonia's systems could be harmonized with these markets, suppliers could use already-established capacity and assets to expand into Estonia and improve market concentration here.

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

Cumbersome or biased switching process. In the research this barrier was indicated as an issue in Estonia. The switching process creates a structural advantage for the existing supplier due to how switch messaging and enacting is scheduled, which gives the existing supplier warning for preemptive win-back.

National issue

Estonia's switching process is cumbersome for new entrants attracting customers away from the incumbent and keeping them in the face of aggressive win-back. The high win-back rate indicates some systemic bias towards the existing supplier (in most cases the ex-monopolist incumbent). For example, switch reporting is scheduled in a way that can be exploited by existing suppliers. Suppliers report switches to the DSO on the 15th of every month, but they are only implemented the following 1st of the month. Suppliers can thus use contract clauses requiring 30 days' notice switching from customers to gain two weeks in which to win back the customer and cancel the switch. This gives the existing supplier an advantage in defending their market share through win-back, making customer acquisition more challenging for newcomers.

Potential solutions

Attracting customers away from a current provider is always a key challenge, but the process landscape should be designed to ensure that all suppliers face the same challenges, especially where the incumbent retains such a strong position. Approaches used in other markets include not requiring the customer to notify the old supplier, only the DSO who then messages all suppliers at the same time, or preventing the existing supplier from starting win-back until after the new contract has come into force.

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

IRELAND BEST PRACTICE CASE: Switching and win-back functions well despite DSO integration

The central messaging centre in Ireland is well designed, requiring timely messaging of switches and with fair access to that information for all players. Switching messages must be sent only after a customer signs a new contract, but within four days. Win-back may only start after this and is restricted to a 10-day window. Hence, despite there not being a centralized data hub that includes data storage as well as messaging, access to information and the opportunities arising from it are considered equal across market players. Other industry processes were felt to be similarly well-developed and fair.

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

Lack of data hub. In the research this barrier was raised as an issue in Estonia. Although Estonia was first among the Baltic states to launch a Data hub, which provides equal access to metering and customer information for all players, aspects of its functionality remain arguably insufficient. This could favour the incumbent, with access to its own data from a large customer base. Given the evidence for and against, this issue is given the benefit of the doubt and not considered a clear barrier

National issue

Although Estonia has a neutral Data Hub run by the TSO, it is limited in that only current information is available. The incumbent still benefits from vertical integration and access to its historical data in order to target customers for particular offers or services.

Potential solutions

This issue could be alleviated both by stricter unbundling of the incumbent and (see section 2.1) and by explicit regulation concerning equal access to historical data for all players, for example through the Data Hub. Developments to improve Data Hub functionality for DR (see section 1.4) will also be welcome.

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

DENMARK BEST PRACTICE CASE: Denmark's DataHub

The development of the DataHub is held up by market actors in other countries as a good example of regulatory development that involved and cooperated with market players. A key aspect of the successful development process was that a single organization (the TSO) had a clear system-wide responsibility to implement the changes, enabling streamlining of the process. Market players report the launch of the DataHub as the most important recent innovation in Denmark's energy system.

NORWAY BEST PRACTICE CASE: A well-designed data hub improved market equality in Norway

The Norwegian market is characterized by a large number of small, local, currently vertically integrated supplier-DSOs. Across Europe, this study has found vertical integration to cause issues around data access, where the integrated supplier (usually the incumbent) has an advantage in data access through its affiliation with the DSO, which collects and controls the information. However, such issues were not raised in Norway.

This favourable situation results from the existence since 2019 of a centralized data platform, Elhub, that is functioning near-perfectly according to suppliers to even out the playing field around data access (see section 3.2). Previously, independent suppliers faced delays and obstruction in obtaining customer data from DSOs. The impact on data exchange was so great that one supplier described their dealings with DSOs as "different pre- and post-Elhub worlds". The Elhub moreover allows the regulator to technologically control that actors are behaving appropriately.

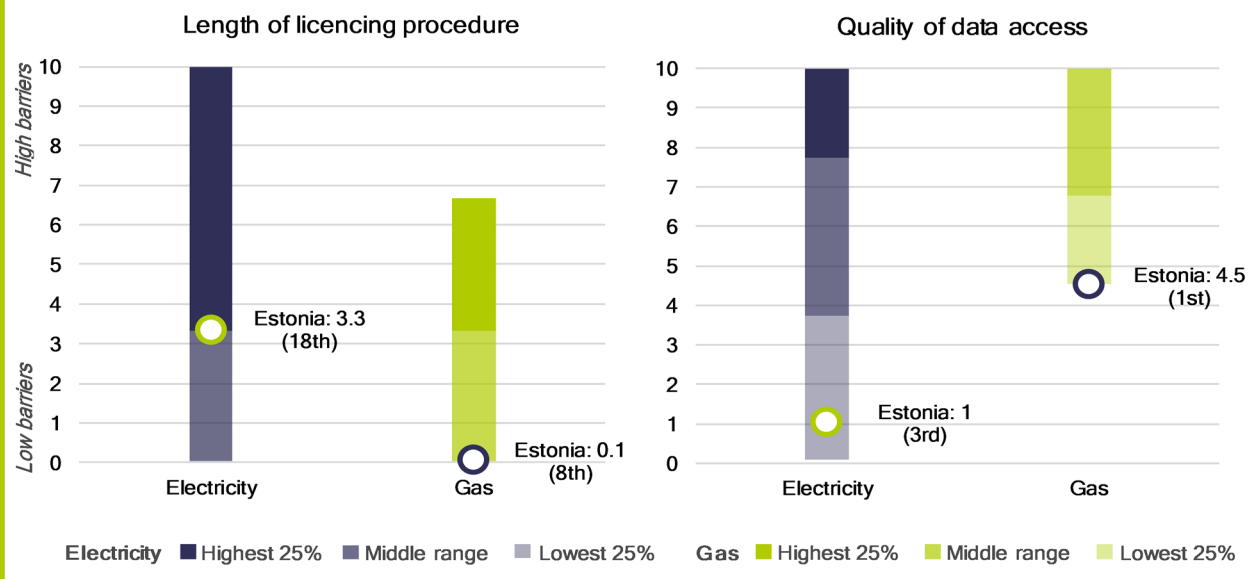
3.3 Estonia's performance in this barrier category

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

- **Length of licensing procedure.** The complexity of the licensing procedure is quantified using the legal deadline of the licensing procedure. A higher score is attributed the longer the regulator's authorization period, while a score of 0 is attributed if there is no licensing obligation in the country.

- **Quality of data access**. 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. A 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



Estonia was ranked in the middle of the European range for the length of the licensing procedure (18th for electricity). Reflecting the presence of a data hub. Estonia also ranked highly for data access (3rdst for electricity, 1st for gas).

4) Customer inertia

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

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

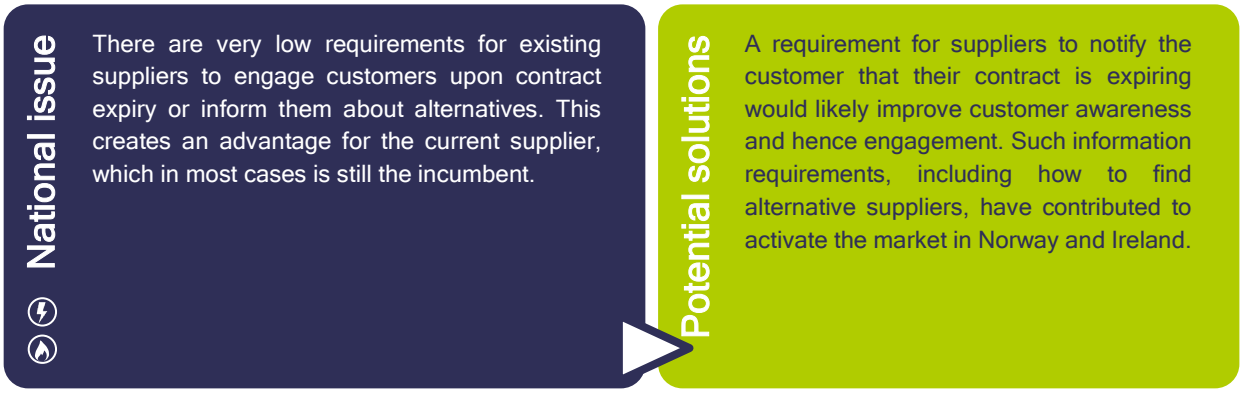
[6] Please note: these definitions are Europe focused, not specific to Estonia. Highlighted barriers have been identified as country specific.

customers the potential for them to engage may still feel unfamiliar. Across Europe, the following specific barriers related to "customer orientation" were detected by this study. Those highlighted in blue have been raised, indicated or identified as barriers in Estonia:

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

4.1 Description of customer inertia barriers in Estonia: Customer orientation

Lack of information regarding available offers and switching possibilities. In the research this barrier was raised as an issue in Estonia. Although the TSO operates a neutral price comparison website, this information is in practice not accessed by customers who are not already actively looking for new offers. The lack of information for inactive customers thus acts as a barrier for new suppliers to reach these 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

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. In the research this barrier was indicated as an issue in Estonia. If customers are not motivated to use their opportunities to participate in the market, for example because energy is not a core priority in their lifestyle, they are not driven to engage with new energy suppliers. 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

The low switching rate in Estonia (2%), following higher market activity on initial liberalisation, indicates a lack of customer interest and/or variety of offers. Several market players identified energy not being a core priority for customers as a barrier to engaging customers, particularly for demand response where customer interest is very low. This discourages companies from investing in novel products. Low customer interest means that obtaining customers is expensive as the main marketing channel is telemarketing, which hits new entrants harder as they must actively obtain, not only defend, customers.

Potential solutions

Lessons for engaging customers in novel services could be taken from other non-traditional supply products (e.g. distributed generation in the form of solar panels) where customer interest is much higher. These products have been made attractive for customers; demand response may still be such a novel approach that the technology and public attitude needs to mature before customers will embrace it.

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

Changing supplier is cumbersome or has little pay-off for the customer. In the research this barrier was raised as an issue in Estonia. While the switching process is straightforward for customers, the way that processes work behind the scenes could have undesirable consequences for customers.

National issue

The switching process is not practically difficult for the customer, but because of bias in the switching process (see section 3.1.8), it was reported that win-back competition can be an annoyance to the customer. This has the potential to reduce their motivation to participate in the market in future.

Potential solutions

Aggressive win-back competition is a consequence of a biased switching process, which has other unfavourable impacts on the market and should be mediated. The switching process itself is well established, with 82% of switching customers rating the process positively according to a regulator study, and could be taken as example in other markets. However, this is of little benefit to the market if the majority of customers do not engage with the market at all.

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

Lack of trust in new or foreign suppliers and in new technology. In the research this barrier was raised as an issue in Estonia. Customers and hence retailers may mistrust new technology or services, at least until they have been convinced that it is useful and will not disrupt their lifestyle, which is difficult to do until enough people use the technology.

National issue

Customers' distrust was felt to particularly impact innovation in the Estonian market. It was reported that Estonian customers need to be convinced of an innovative products' worth before taking it up, both in terms of seeing its value in savings and how reliable it is. Hence, innovation and rolling out novel products and services needs to happen gradually in order for customers to maintain interest.

Potential solutions

This barrier should decrease naturally as these novel products are taken up more widely as the market matures. In the mean time, an information campaign from a neutral actor, e.g. the regulator (as planned in Sweden), could encourage customers to trust and hence take up these products earlier.

European markets in which this barrier has also been indicated

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

4.2 Estonia'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 Estonia are shown against the range across all analyzed countries. These scores contribute to the performance index. The performance indicators of customer inertia are the following:

- **Comparability of offers.** The index consists of two sub-indicators. The first measures consumers' 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. A 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.** Difficulties around the switching process are also measured based on DG Justice's survey. The indicator incorporates the experience and opinions both of customers who have switched, and also of those who have not because they faced obstacles or thought it might be too difficult. A high score is attributed if a high share of consumers reported a bad experience of or poor opinion on the switching process, among all customers who considered switching.

Performance indicators

Estonia's potential for customers to compare offers was ranked relatively highly across Europe (6th in electricity, 5th in gas). In terms of perceived difficulties of switching, Estonia fell in the middle range (14th for both markets).

5) Other

Other aspects of the market not directly related to its functions, as addressed above, may also impact suppliers' ease to enter and operate in the market. These relate to characteristics of the market that are not necessarily a barrier per se, but their impact on the energy retail environment could be minimized to benefit market function.

5.1 Description of other barriers in Estonia: Other

Small market or customer value. A small population and/or low consumption hinders profitability. Market size as a barrier could be ameliorated by better harmonization of markets.

"When costs are low, convenience sells."

National issue

Customer potential was reported to be small, due to low margins which make it difficult for new entrants to get off the ground as they cannot price competitively while also sustaining a business. The low margins are unlikely to be a consequence of an active, well-functioning market (switching rate is low), but rather due to aggressive pricing by the incumbent (see section 2.1.2), who can survive lowering margins for certain customers if it prevents their large market share from shrinking. Moreover, the incumbent reports sufficient margins.
Fundamentally, the market is small, especially in gas, which makes it unattractive to large players from abroad. The gas market is also shrinking, resulting in little to attract new entrants to compete against a dominant incumbent.

Potential solutions

The government and regulator aim to promote growth in the declining gas market, increasing the use of gas as a transport fuel, and gas-fired district heating systems. A closer integration of the upcoming Baltic-Finnish gas market will also effectively enlarge the market.
Similarly, increased integration of the electricity market with neighbouring countries would create a more attractive market for new entrants, especially those expanding from other markets.

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

FINDINGS & RECOMMENDATIONS

As seen throughout this project, barriers to entry and operation can constrain the development and functioning of energy markets. Examples of such barriers identified in this project vary widely across EU countries, including issues as wide-ranging as the use of financial guarantees for access to wholesale markets, the presence of price regulation in the market, and burdensome licensing regimes, where the requirements are disproportionate to their protective function.

The Estonian energy market was the first of the Baltic states to liberalise. Despite initial development being sluggish, with market structures at first remaining dominated by the monopoly both in practice and in thinking, the last few years have seen an increasing pace of development. Key progress areas are the establishment of a data hub, making data access more fair across all suppliers, and ongoing work to welcome more novel players, such as small-scale generation and demand-side response, into the energy system, including a completed full roll-out of smart meters. Nonetheless, several major barriers remain that prevent new entrants from entering the market effectively. The impact of these barriers on the market is illustrated by the fact that customer switching rates, from an initial lively 10%, have actually fallen since liberalization and are now very low at c. 2% for electricity.

A key issue in the Estonian electricity market is the advantage of the incumbent supplier in many subtle aspects. With a large customer base (over half the market), Eesti Energia is able to use tactics such as lowering prices for targeted customers to prevent them switching that are not possible for other players with both smaller revenue bases and less economy of scale. This is compounded by a switching process that gives the existing supplier forewarning of a coming switch, allowing them to try to win back customers before the switch is completed but after the competitor has already invested much in attracting the customer. The incumbent also retains a data advantage, despite the successful recent launch of a data hub, by virtue of their access to historical consumption data and the business insight this brings. This is linked to issues around incomplete unbundling between Eesti Energia and the dominant DSO, co-owned by the same group, which allows information flows from the regulator network side to unfairly benefit the competitive supply side. Such unbundling issues are common across Europe. Looking at countries which have solved or avoided this problem, two potential remedies appear to be effective: requiring full unbundling, to remove the financial incentive for DSOs to favour certain companies, and/or a well-functioning data hub, to give all suppliers full and equal data access regardless of company ownership.

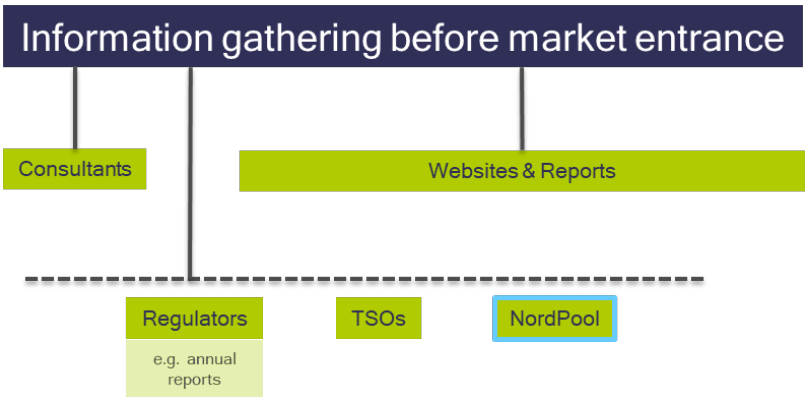
Underlying many of the barriers identified in both electricity and gas, the broad message created by the regulator is uncertain as to how welcome new entrants and novel players are on the market. This is tied to a lingering influence of the incumbent supplier, at least on authorities' view of the market if not actual planning processes. Together, this creates an uninspiring atmosphere for new players, compounded by the fact that Estonia is a small market with limited revenue potential. In other countries, openness of the authorities towards market players – sharing information and including them in planning discussions – has helped create a more welcoming atmosphere. This issue is tied to a lack of customer awareness or interest, for example because existing suppliers face no obligations to remind customers about their potential to switch upon contract expiry.

Looking towards the future, many changes are ongoing in the Estonian electricity sector to facilitate participation of new technologies both in supply and balancing services. Easing barriers around such services, for example that new services and business models do not easily fit into current regulatory frameworks due to a lack of clarity in e.g. role definitions, is thus on the right track, though will likely take time.

APPENDIX 1: PROCESSES

This section describes market processes in energy retail in Estonia. 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.

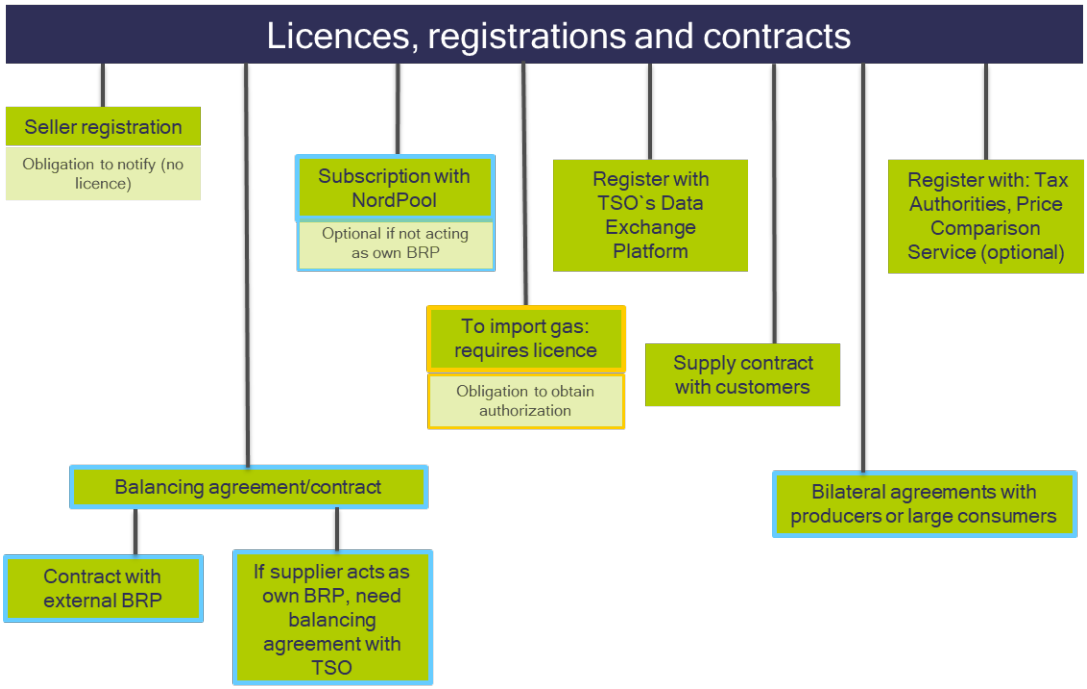
1) Information gathering before market entry



Further comments

Information for new entrants is readily available, much of it in English. The regulator is the same body as the Competition Commission.

2) Licences, registrations and contracts

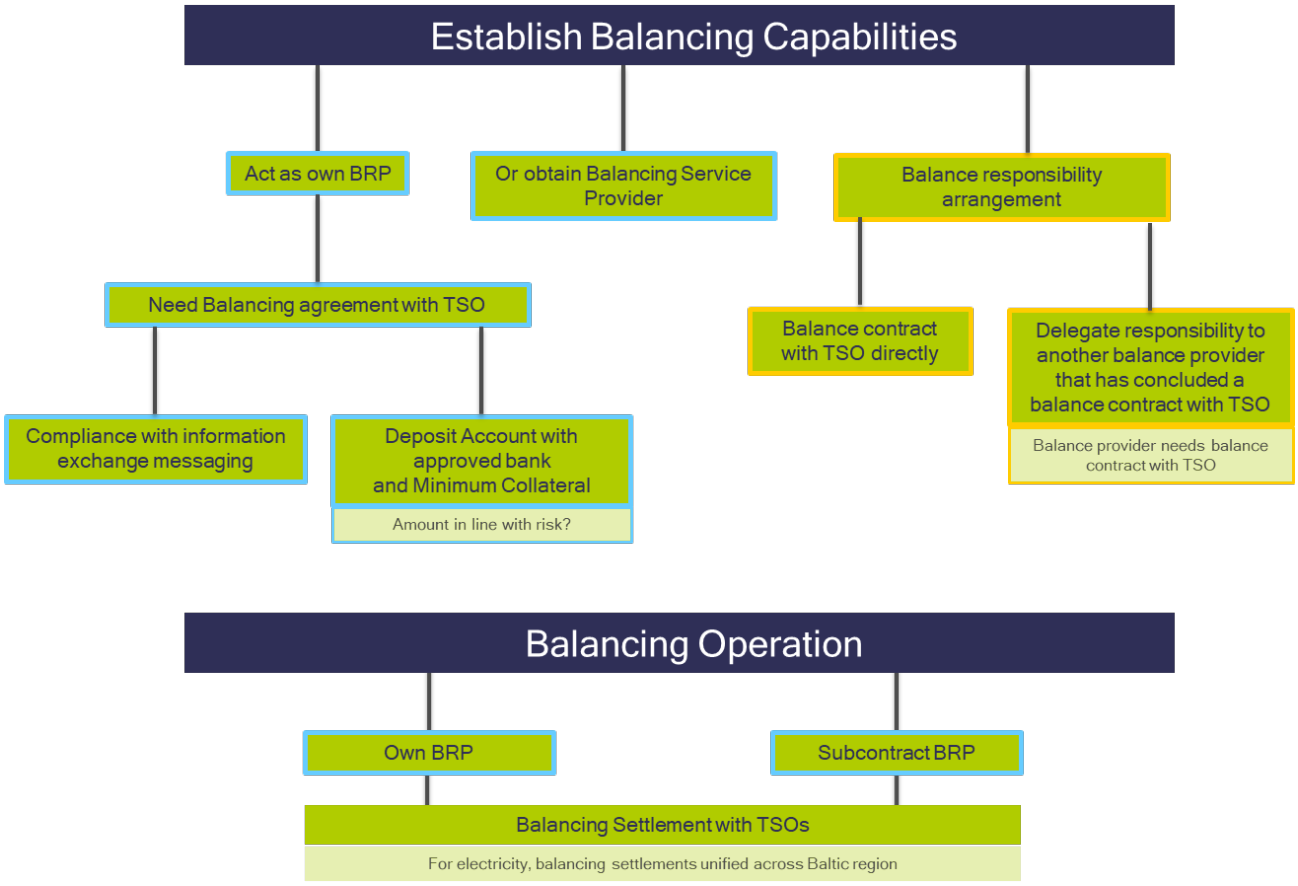


Further comments

No licence as such is required to act as a supplier, only registrations.

- Since 2019, companies wishing to act as a seller of electricity must present a “notice of economic activity” to the Register of Economic Activity
- Both network and electricity contracts may be either fixed-term or open-ended. Open-ended electricity contracts are terminated when the network contract for that metering point expires.
- Network contracts must be made in writing; electricity contracts may be made orally, if both parties agree to do so
- Energy contracts must include the following: details of the seller; main parameters of the electrical energy or gas service; how to find further information concerning charges; information on how to contest errors or complain; payment options (at least two for electricity); the term of the contract; for gas, conditions for renewal, cancellation or amendment
- Changes to contract conditions must be objectively justified, necessary due to changing circumstances and approved by the regulator (Competition Authority).
- For non-household customers, large bilateral contracts can be made and kept confidential.
- In recent market developments, market players report that the wishes of the incumbent and other providers have largely been heard by the regulator.

3) Balancing

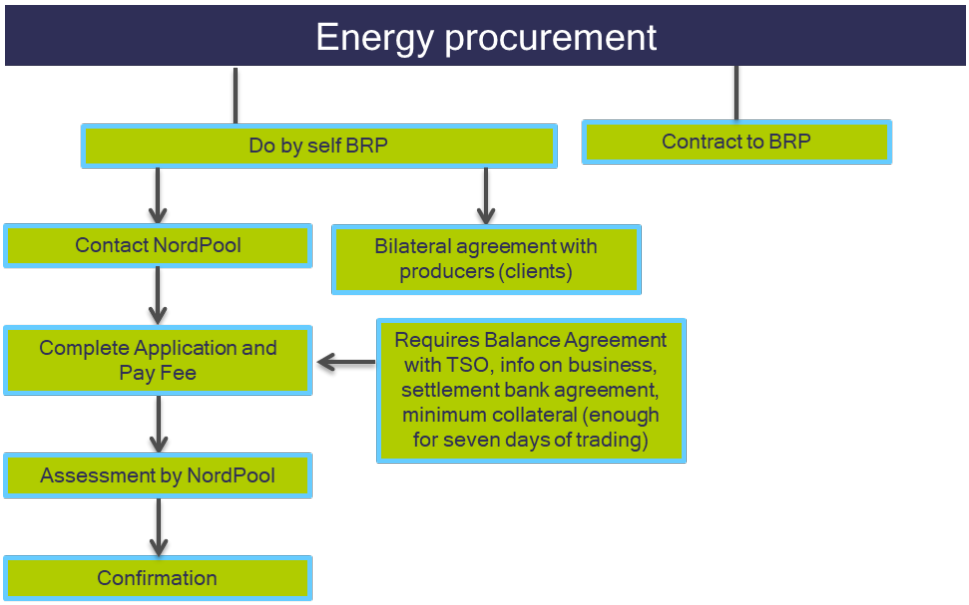


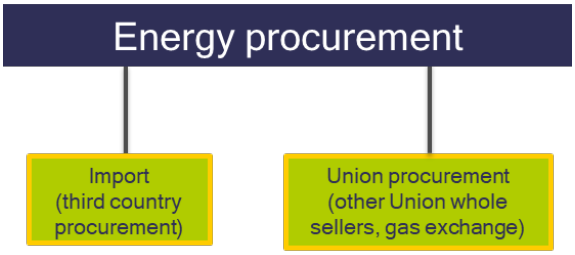
Further comments

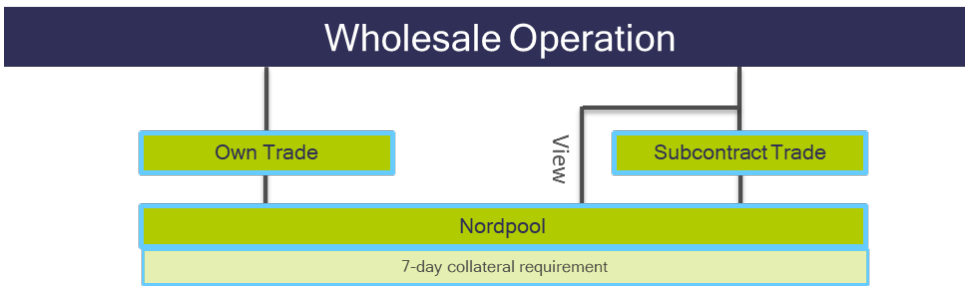
As of 2018, the balancing market is operated on a joint Baltic basis since 2018, with coordinated rules around balance management, a common balancing market and an imbalance settlement developed jointly by the three Baltic regulators. National TSOs retain responsibility for imbalance in their area, but a common imbalance price is applied across the region.

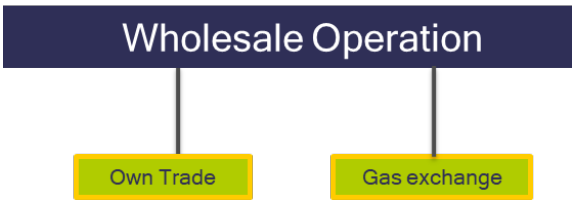
- For gas, the balance provider for household customers is the supplier. There are nine active gas balance providers (including suppliers and other service providers).

4) Wholesale







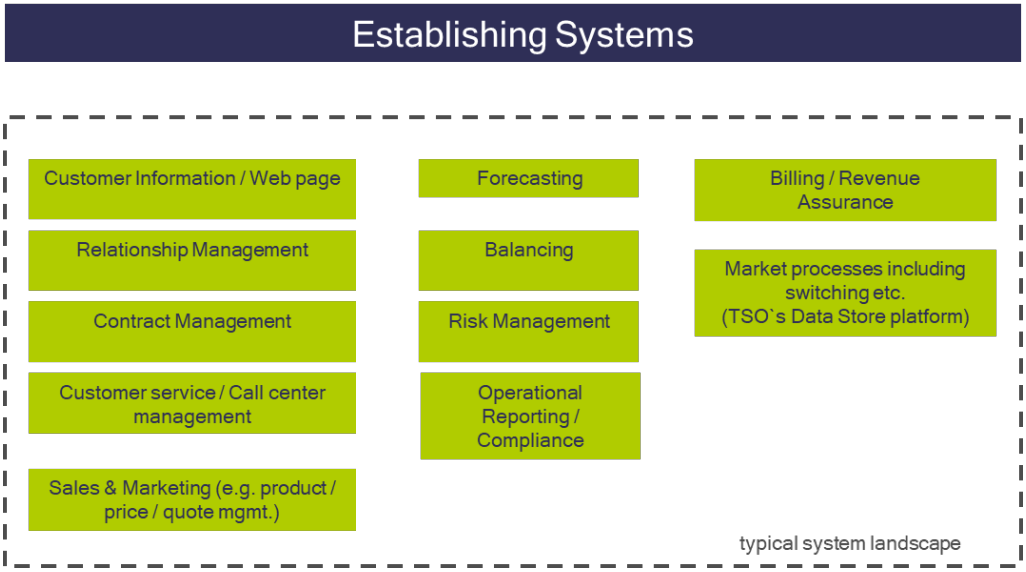


Further comments

Margins in electricity are low, making Estonia a challenging environment to operate in.

- The TSO may trade in gas for balancing without authorisation
- It is possible to have one registration for access to all NordPool markets, but for this to be possible the participant must have at least one legal representative.
- In 2017, the gas wholesale market included three active importers and four active traders.
- To increase the attractiveness of offers, some suppliers have started bundling their energy offers with completely different services, such as insurance
- One small provider recently had to raise prices mid-contract because they had not been able to attract enough customers on the small margins. Naturally, this damaged their reputation.

5) System landscape



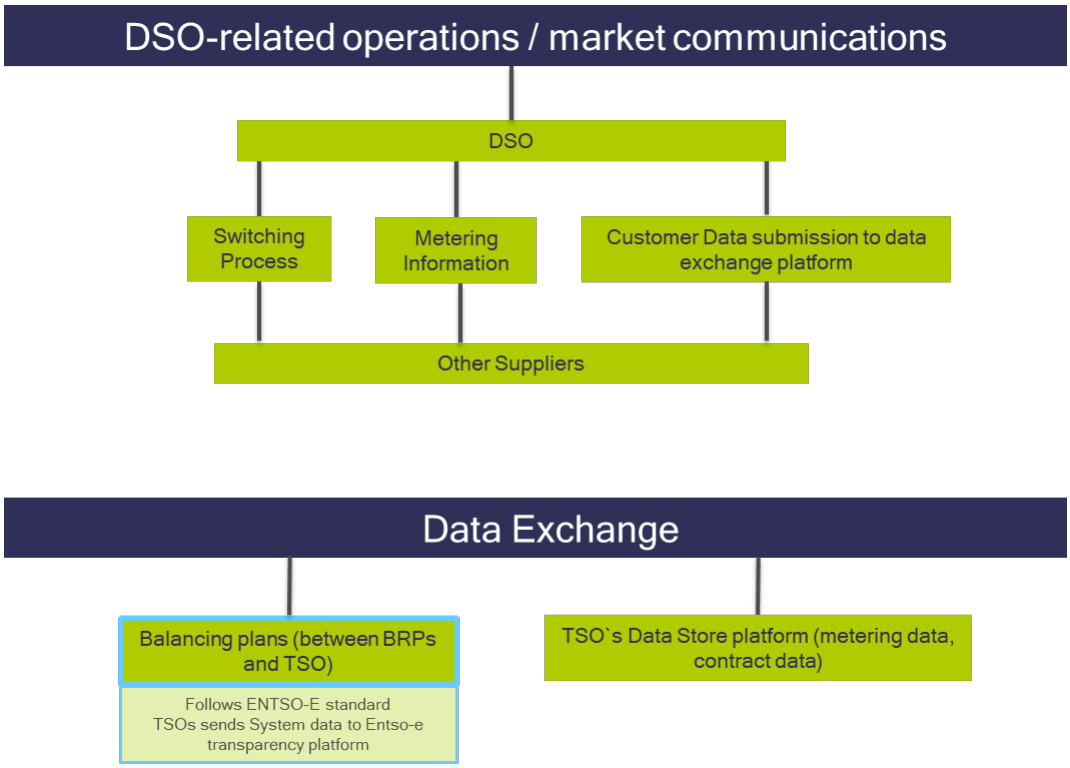
Further comments

The main marketing channel is telemarketing: end-user prices are so low that customers are generally not motivated to search for new offers themselves.

Since 2016, the TSO provides IT systems for joint billing. However, until 2018 at least, this was only implemented for the biggest DSO Elektrilevi; other DSOs are expected to be added.

- The incumbent has observed that competitors are no longer conducting sales campaigns as actively as in the early days of market liberalization.
- Customers must be invoiced once a month unless otherwise agreed
- The invoice must also contain: sources of electricity, including proportion certified by guarantees of origin; amount supplied the previous year; the proportion of electricity purchased from a power exchange; reference to information on the environmental impacts related to the customer's consumption; information on customer rights.

6) DSO-related operations & market communications

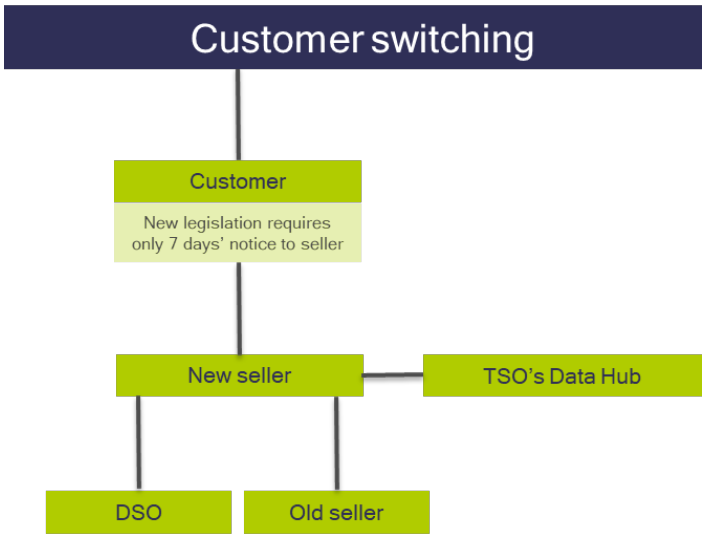


Further comments

The TSO (Elering) runs an Estonian information exchange platform (Data Hub) for both electricity and gas that is the most advanced of the Baltic countries. All information exchange runs through here. The Data Hub integrates data of all the contracts related to the sale of electricity and network services, as well as the metering data in electricity consumption.

- It is mandatory for hourly electricity meter readings are passed to the Data Hub; the same will apply to gas from 2021
- Functions of the Data Hub: contract information; customer data; historical consumption data; information on disconnections & reconnection requests (in order to ease debt management arising from joint billing)
- Customers may also view their own data, provided they have a network contract
- Equal access for all market participants is protected by law
- Through the Data Hub's customer platform, customers may authorize other suppliers to access their consumption data, allowing them to make personalised price offers
- Several comparison sites exist
- Joint billing is possible

7) Customer switching & moving

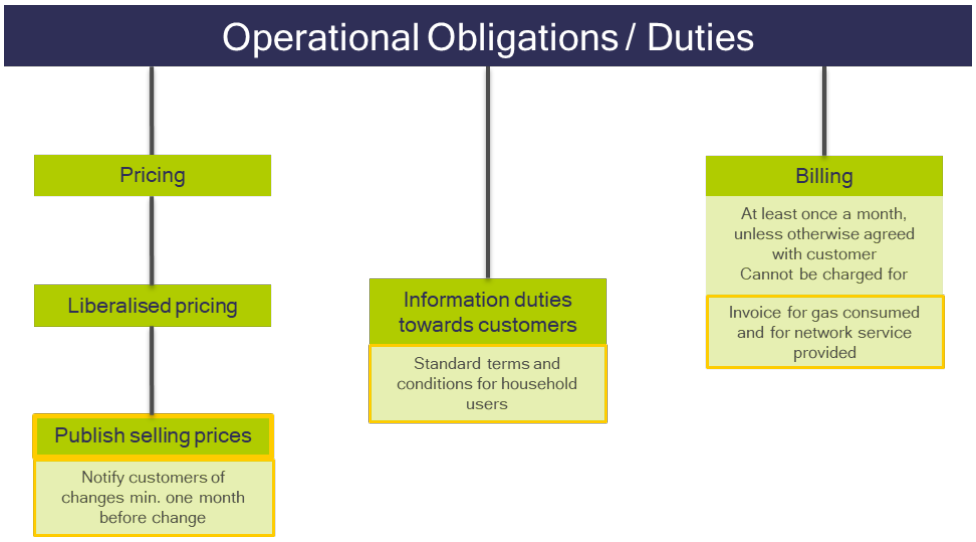


Further comments

The switching process and how much it is used is key to an active energy market, as this is where the customers exercise their right of choice. The decline from c. 10% to c. 2% in the 5 years since market opening indicates that this is not happening in Estonia. Fundamentally, the population is small and margins are small; for gas, the number of customers is even lower. Network tariffs account for almost half (43%) of the end-user's final bill; electricity only accounts for 29%, and taxes and renewables charges make up the remainder.

- A consumer who has not chosen to contract with an electricity supplier receives their electricity through the network operator under the framework of universal service
- The old supplier must submit a final invoice 6 weeks after the switch
- In gas, switching within 14 days of notification by the customer was legislated in 2017
- Large competitors also struggle to win customers, indicating that customers fundamentally have little interest in engaging in the market. In 2017, 10% of customers were still not fully aware of the fact that they were able to switch provider[2].
- The customer contacts the DSO to make the switch, and it is the new supplier's duty to inform the old supplier only after the switch.
- Win-back rates during or immediately after switching are very high, estimated by a market player at an unusual 60-70%.
- Around 95% of contracts are prolonged at expiry, rather than customers switching to a new offer or provider. Upon contract expiry, the current supplier is required to notify the customer but neither supplier nor DSO are required to follow up or remind again. If the customer takes no action, the contract rolls over.
- The incumbent's main demographic is people > 55 years old, indicating that younger generations may be more engaged in the market and switch away from the incumbent. This is probably linked to their being more aware of online tools to find and compare other providers
- There are no explicit regulations surrounding moving for gas

8) Operational obligations/duties

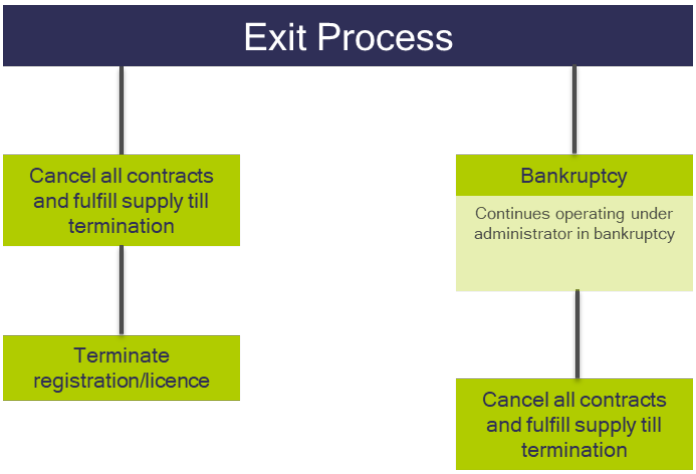


Further comments

- For universal service, pricing corresponds to the market price but prevents suppliers earning unreasonably high income. The universal service provider is the network operator or a seller designated by them (based on standard conditions from the Competition Authority). Price formation (market price plus justified cost and reasonable profit) is verified by the Competition Authority to be justified.
- Pricing can be individual to customers, which means there is potential for discrimination against certain individuals. However, of customers who have switched since liberalisation, over one third (36%) reported that price was not one of the main drivers to change supplier[7].
- Joint billing for supply and distribution, known to be attractive to customers, is now available for all suppliers. However, it took 4 years after market opening for any new entrants to gain the right to provide joint billing.
- In gas, joint billing for retail customers is not yet established. However, it would be particularly important here, especially stove gas customers, who do not want to deal with an extra bill for just a few euros' worth of consumption.
- Contracts may include a termination fee, except fixed-term contracts
- Retail prices must be published on the company's website. Based on this information customers may choose to switch.
- The regulator resolves disputes between market players and handles customer complaints
- Customers breaching contract conditions can be disconnected after 180 days of persistent contract breach.
- Cancellation of electricity or network contracts must be notified 30 days in advance
- In gas, both network operators and suppliers must have a website that contains the following information: charges for network services; maximum prices for gas; how connection fees are calculated; standard contract terms and conditions.
- The dominant gas supplier within a network areas is required by law to sell gas to all household customers in that area who have a network connection and are willing to buy.

[7] https://www.konkurentsiamet.ee/public/Annual_Report_2018.pdf

9) Market exit



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