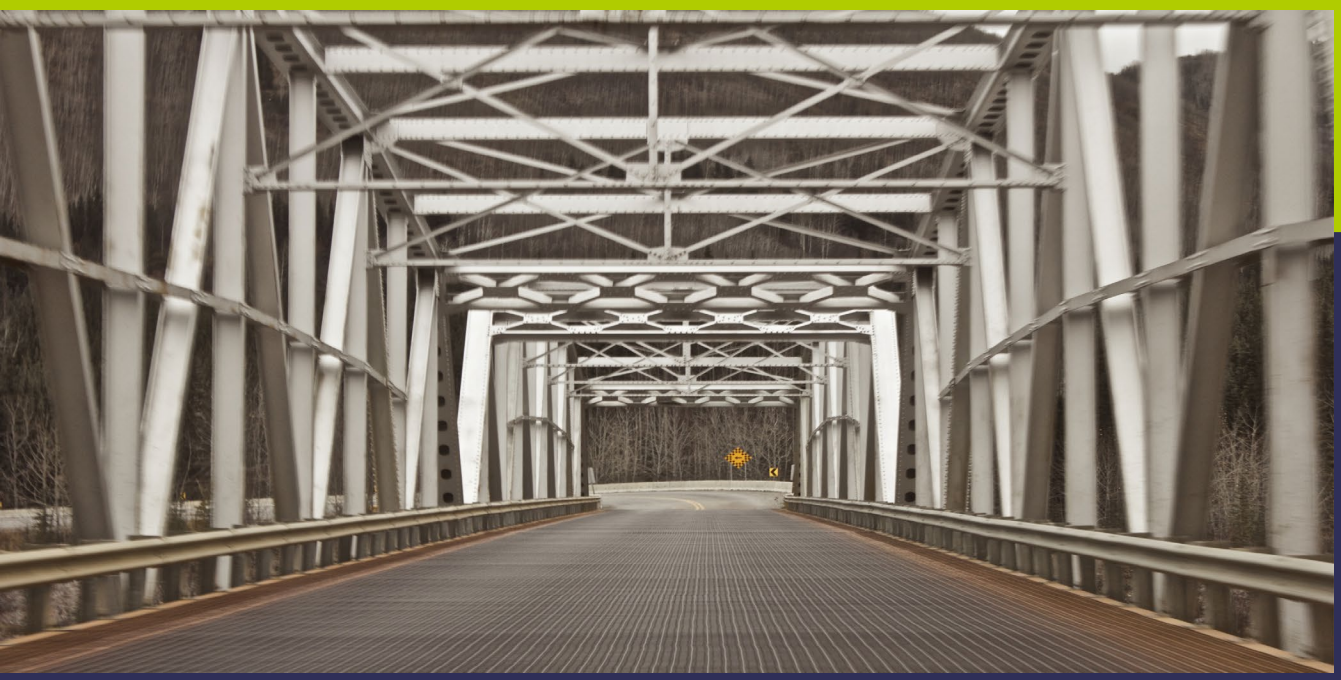
European Commission

EUROPEAN BARRIERS IN RETAIL ENERGY MARKETS



GREECE
Country Handbook

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Energy

EUROPEAN BARRIERS IN RETAIL ENERGY MARKETS PROJECT: Greece Country Handbook

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

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

SUMMARY

Project Outline

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

The Context

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

Objective

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

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

It is also important to note that all the markets included in this research are continuously evolving. Changes are being planned and improvements (and in some cases additional barriers) are possible as a result. While this project highlights and considers known future changes, it cannot make assumptions as to the effectiveness and

outcomes of those changes. This project is therefore weighted in the present, based on the actual context in the market, whilst accepting that the present context may change, in some cases imminently.

Competitor Perspective

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

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

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

Scope & Scale of Research

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

Focus Markets

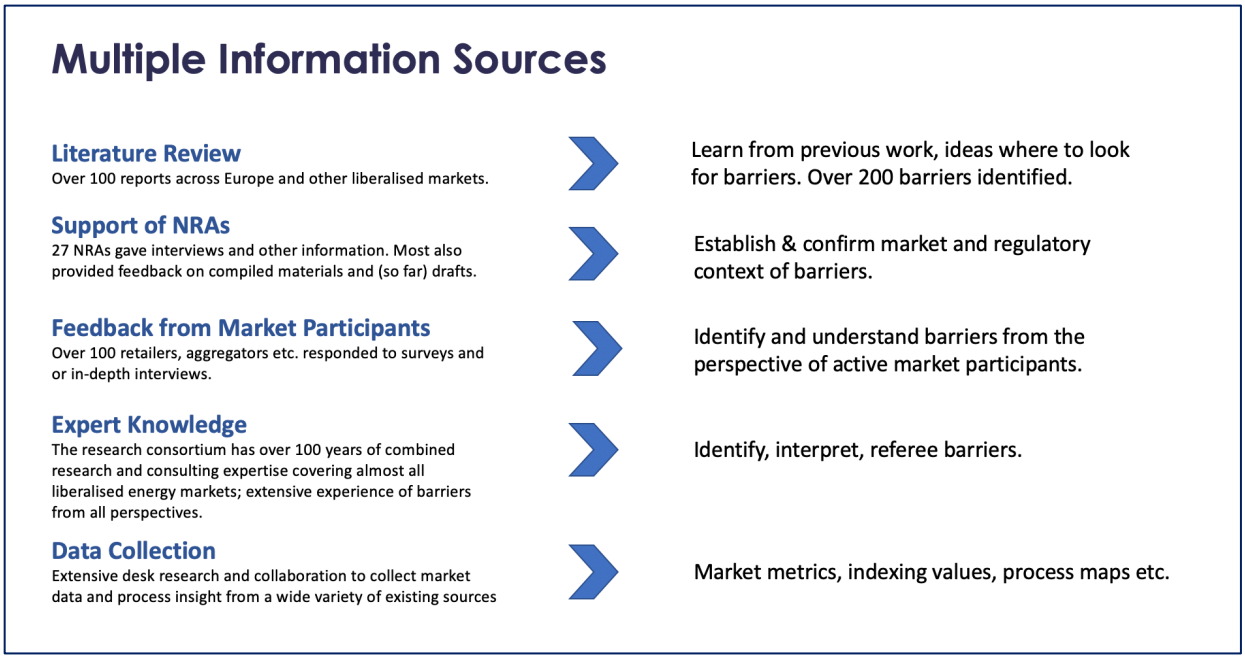
The project focuses on retail (supply), including also demand aggregation services, other additional offerings and new model retail, especially relating to the household segment customers (in some markets households and smaller SMEs may be difficult to distinguish). The project additionally concentrates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

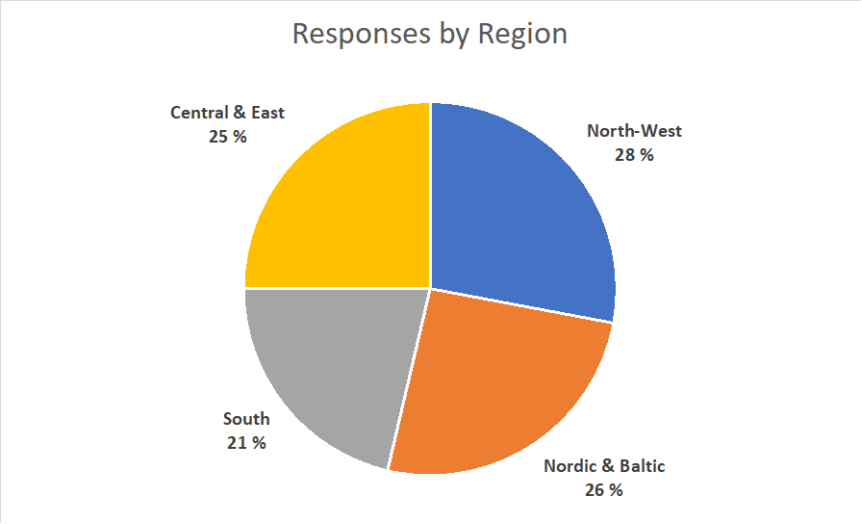
The primary research mediums used in the project were an extensive questionnaire and in-depth interviews. The purpose of the questionnaire, which contained separate questions depending on the type of respondent, was to provide a comprehensive and structured identification, weighting and magnitude of 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

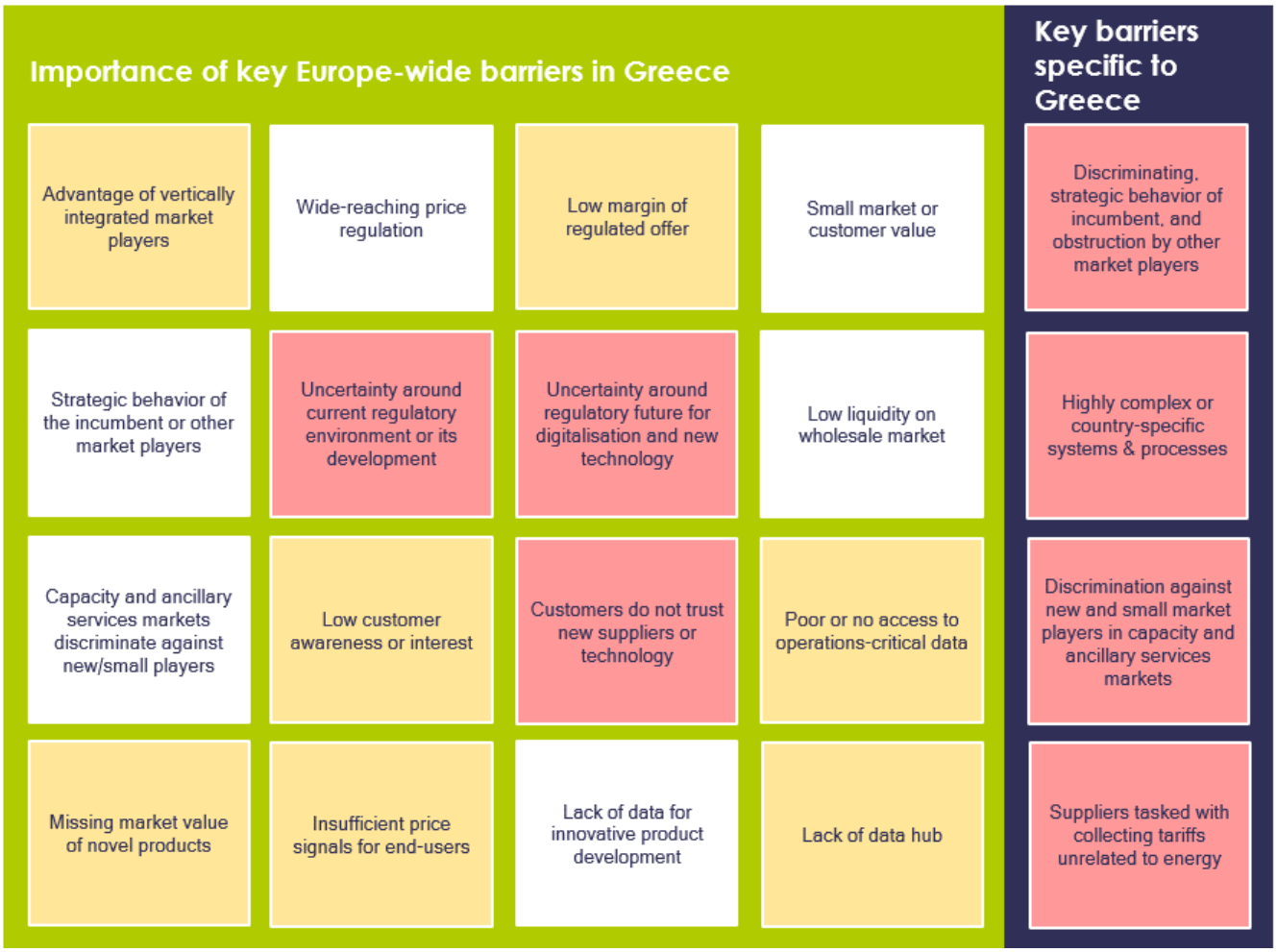
The purpose of the 'European Retail Energy Market Barriers Index' is to enable a degree of comparability between the barriers' context in each of the markets. It is based on metrics that can be collected for all markets, metrics for which available data currently exists. As such it provides a simple, 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 Greek market

The following figure highlights the key barriers in the Greek market. Please note, the terms are generic across all researched markets.



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

Due to the revision of the Economic Adjustment Plan, the Greek energy markets have been reformed deeply generating a degree of uncertainties among new entrants' suppliers. Electricity and gas prices are not regulated but there exists a social tariff (equal to all vulnerable customers that meet the requirements set by Ministerial decree) and the prices offered under the Supplier of Last Resort and Universal Service Supplier. Recent reforms, described later in this handbook, have impacted the regulator activity that is however implementing all EU energy regulation. There exist barriers at retail level that can stifle market development and functioning, hence we set a list of recommendations going in the direction of a well-functioning retail energy market, as one where there is a good environment for innovation of energy services and products that benefit the consumer.

- Actions aimed at stabilizing the current regulatory framework are recommended and should provide certain, tracked and long-term directives at political level. Identifying appropriate measures to complete the market liberalization phase and reducing frequency of regulatory intervention.

- If on one hand, charges unrelated to supplier's business should be collected with different methods, on the other hand, collection failure should be protected by settling such charges as a mere pass-through or through a recovery fund.

- Regulation around innovative services should be promoted as smart meters are not deployed. An initial effort towards this direction is the new National Energy and Climate Plan foresees the smartening up and digitalization of the national distribution grids, including the smart meters rollout within the next decade. However, digital innovation alongside with what utilities are already doing should be enhanced. Also, pilot projects should be boosted regarding the demand side participation to ancillary services market, completing the regulatory development also on demand aggregation. Technology improvements and innovation of market processes are factors influencing the scope for competition in Greece as in other markets across Europe.

- Monitor activity by the relevant authorities should be effective and record, if any, abusive behaviour from certain suppliers. From our survey, suppliers claim strategic behaviour of dominant suppliers causing predatory pricing and cross-subsidies. The streamlining of regulatory framework interpretation between different regions will help the reported not equal market access to information for suppliers.

- Liberalisation process should be completed and in line with EU directives.

- Finally, as most suppliers use the TSO's load forecast, suppliers propose to exclude the TSO's forecast error (MAPE) from the imbalance penalty. While in the gas sector balancing costs are perceived as high. Monitor activities are recommended to guarantee a fair treatment in the balancing market platforms.

- Activities aimed at raising process reliability and homogeneity are recommended. Together with the strengthening of the relevant institution actions in, for instance, introduction of one-window / simplified procedures to rise the quality of service provided to suppliers.

- Regarding data and quantities allocation forecast, in the gas sector, the regulator should intervene to make quantity allocation methods more transparent and help the streamlining of DSO procedures.

- Customers' awareness campaign and their strengthening are recommended to relevant authorities. To raise responsibility around suppliers that should better inform customers with all precontractual information, providing clarity and correct price comparison. An activity that could also raise trust towards suppliers in the market. Also, customers associations may help by better monitor suppliers' behaviour, preventing unethical behaviour enhancing market attractiveness and reliability

MARKET OVERVIEW

Introduction

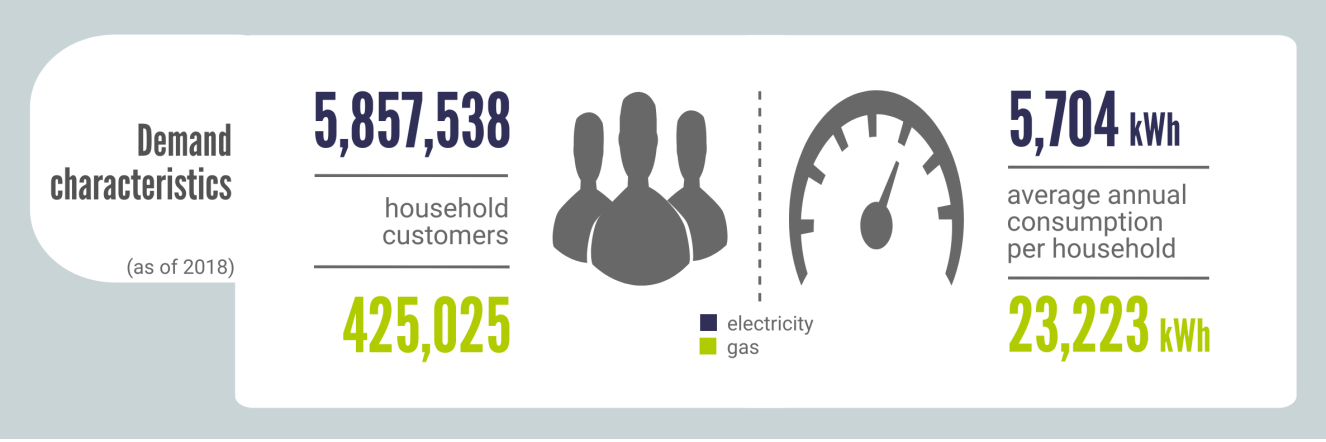
Electricity production levels for 2018 reached 45.21TWh. Overall electricity supply (including net imports) reached 51.44 TWh (-1.5% in comparison to 2017, +8% in comparison to 2016).

Indicatively, monthly production shares per fuel type for June 2019 were natural gas 43,09%, RES 24,10%, lignite 24,01%, large hydro plants: 8,78%. The share of the former incumbent PPC in power production was of the order of 50% in June 2019.

In retail, PPC's market share stood at 67.3% in March 2020, according to the latest report of Henex, though this share varies a lot depending on the market segment. In the medium voltage PPC share is 43%. Other suppliers (Mytilineos, Heron, Elpedison, NRG, Watt & Volt, Volterra and Aerio Attikis) have an aggregate share of nearly 25%. The individual share of the remaining nineteen players is less than 5%. The reduction in the share of PPC continues steadily.

A total of 65 participants are active in the day ahead electricity market. Fifty-two (52) were active during the month of June 2019: 8 producers, 32 suppliers and 15 traders.

In the gas retail market, the total supply (consumption) of natural gas in 2018 was 10.25 TWh (compared with 10.42 TWh of 2017 and 8.95 TWh of 2016). The two prevailing suppliers in the retail gas market (considering residential, commercial and industrial consumers) at the end of 2018, was 46.81% and 35.75% of the total natural gas volume consumed (representing 71.01% and 26.40% respectively, of the total number of connections).



Background

All electricity consumers, except for those at the non-interconnected islands became eligible as of July 1st, 2007 according to the provisions of Directive 2009/73/EC. Non-interconnected islands consumers became eligible in 2016 and 2017.

Substantial new generation capacity (natural gas combined cycle power plants and RES) was introduced into the energy mix post 2009. The capacity was built and owned by producers other than incumbent Public Power Corporation (PPC). The current share of PPC in installed capacity of the interconnected system (excluding renewable energy sources) is of the order of 76%.

The Greek wholesale electricity market continues to operate as day ahead mandatory pool. The design and implementation of elements of the Target Model, i.e. day-ahead, intraday and balancing market (according to Regulation (EU) 2017/2195) are ongoing whereas the initial go live was planned for June 2019. An organised forward market on a Henex platform is established in March 2020, though only with contracts with financial delivery.

Natural gas was introduced into the Greek energy mix in 1996.

Greece started with a derogation from the market opening provisions of the 2nd Gas Directive. Market opening began gradually in 2005 and was realized in five stages before all customers became eligible on 1 January 2018. Prior to 2010, gas was supplied solely by the incumbent DEPA through its long-term contracts with Gazprom (Russia), Botas (Turkey) and Sonatrach (Algeria-LNG). With the exception of electricity producers and some large-scale industrial plants, all remaining consumers connected to the distribution networks of Athens, Thessaloniki and Thessaly in central Greece remained captive until 2016.

The distribution system was developed through concession agreements post 2000 with the incumbent DEPA holding 51% in each concession. All distribution companies had a well-defined geographical area of activities and long-term gas supply agreements with DEPA. By law, the construction and ownership of the distribution network outside the concession areas was assigned to DEPA.

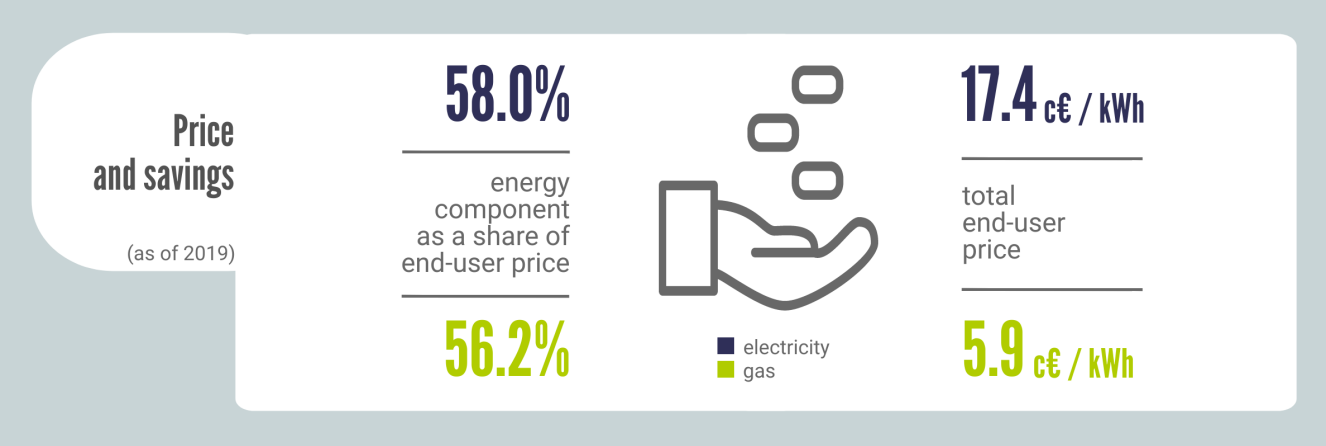
Market opening was inherently linked to the implementation of a gas and capacity release program. The Greek Competition Authority in collaboration with RAE imposed a gas and capacity release program upon the incumbent DEPA since 2012, with defined quantities until 2022.

The gas release program is implemented through annual and quarterly auctions. A capacity release program is also in place with DEPA's capacity rights at Interconnection Points limited to about 53% of the existing technical capacity.

The gas release program has been the major contributor to the opening of the Greek gas market. In addition to the gas release program, a significant role to market opening, and security of supply, was also played, since 2010 by the Revythoussa LNG Terminal which provides the only alternative gas source for Greece.

Energy charges

In 2018, the energy component was representing on average up to the 54.2% of the tariff. While the energy component in the gas end-customers' tariff was around 52.9%[1].



Market structure

Greece is currently preparing for the full deployment of the national electricity market design to accommodate the implementation of target model. ADMIE S.A. is the electricity TSO. ADMIE was finally certified as ownership unbundled in 2017 following the privatization of 24% of its shares and a transformation in its shareholding structure. ADMIE operates the balancing and ancillary markets. The remaining markets of the ETS will be operated by the Hellenic Energy Exchange (HEnEx). There is only one electricity distribution operator DEDDIE. DEDDIE is responsible for the distribution of electricity both in mainland Greece and at the non-interconnected islands. DEDDIE is a legal and functionally 100% subsidiary of the incumbent PPC. Apart from the mentioned TSO/DSO, another entity active in the electricity sector that is under regulatory supervision is the so-called operator of RES and CHP ssystems (DAPEEP). DAPEEP is an entity, established in 2018 with the sole task to handle of the reimbursement amounts of RES and CHP plants, in the interconnected network, that are under a feed-in-tariff or a feed-in premium regime (for the non-interconnected network, RES operator is DEDDIE).

DESFA S.A is the gas transmission system operator. DESFA is certified under ownership unbundling model following the conclusion of the sale of 66% of its shares to a consortium formed by the Italian, Spanish and Belgian

[1] HEPI by Energie-Control Austria, MEKH and VaasaETT Ltd.

gas TSOs (Snam Rete Gas, Enagas and Fluxys)[2]. There are three distribution system operators active in the areas of Athens (EDA Attika), Thessaloniki and Thessali (EDA Thessalokini-Thessalia) and the resto of Greece territory (DEDA). All DSOs are legally and functionally separated from supply according to the EU legal framework provisions. However, EDA Thessalokini-Thessalia is the only company that is fully unbundled, while EDA Attika was recently re-bought by DEPA and is now a 100% VIU. DEPA Infrastructure is currently under privatization (expression of interest phase due to end of 14 February 2020)[3].

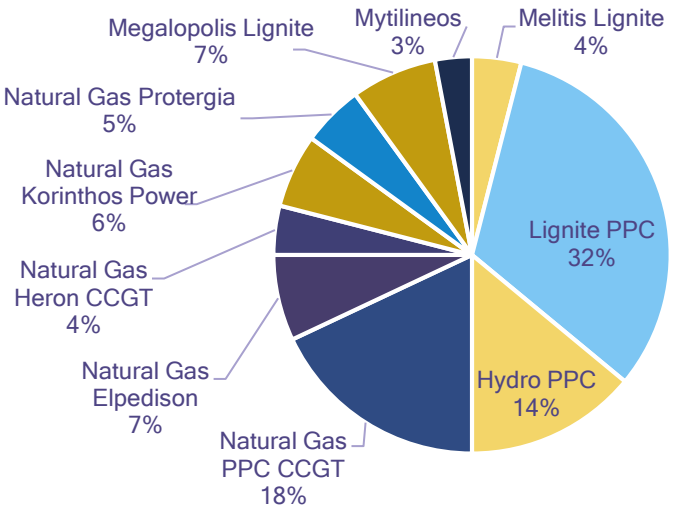
The National Natural Gas System (NNGS) operated by DESFA transports pipeline gas from the Greek-Bulgarian border, the Greek-Turkish border and regasified Liquefied Natural Gas (LNG) from the Revythoussa LNG terminal at the vicinity of Athens. The operation of the TransAdratiic Pipeline (TAP), due in 2020, will connect the system of DESFA to Italy and beyond. TAP allows for commercial reverse flows from Italy to Greece at very favourable transmission tariffs and is expected to greatly enhance the liquidity of the Greek market and also the markets of the Balkan region.

RAE is the national energy regulatory authority responsible for both the electricity and natural gas markets. Following joint actions of RAE and the National Competition Authority since 2012, the share of the natural gas incumbent DEPA has been substantially reduced following a structured gas and capacity release program. According to information available in the press, and due to the circumstantially low prices of LNG within 2019, DEPA may have lost market dominance at least for 2019.

Plans and studies for the establishment of an organized gas trading platform are ongoing. A feasibility study was completed in December 2019 and the implementation of a trading platform is expected by the first half of 2021. Currently the Greek market operates on interim measures as provided by Regulation (EU) 312/2014.

In terms of electricity volume, the incumbent's share in 2018 in the interconnected system amounted to almost 74.2% of the domestic production (excluding RES), while independent electricity producers achieved a 25.8% share. The net installed capacity and the produced volumes per fuel and producer in 2018 are shown in the below Figure.

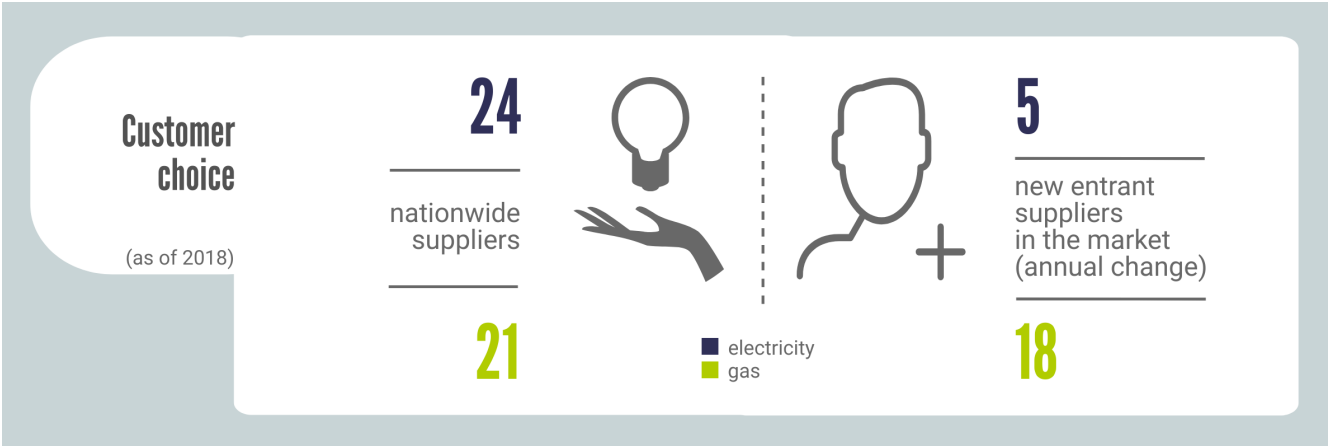
[2] 10% of shares of Senfluga Energy Holdings were sold to Copelouzos Group in the end of 2019.
[3] DEPA has shares in infrastructure including DEDA and six other DSOs.



Electricity Generation in 2018 per producer and fuel (%).

The HHI index for the wholesale market in 2018, a measure of market concentration, attained the value of 4,359 in terms of volume production and 5,627 in terms of installed capacity (7,820 and 6,804, respectively, in 2014).

Electricity consumption in 2018 in the country's Interconnected Network showed a slight decrease compared to 2017 levels, according to the accounts of the System Operator on the MV and the LV and the Monthly Energy Schedule December 2018 of the Transmission System Operator for HV (45,898 GWh in 2018 compared to 46,876 GWh in 2017, a small decrease approximately 2%). This decrease marks a return to the levels of consumption recorded in 2017. In December 2018, the incumbent PPC remained the main supplier throughout retail representing 90.99% of the total number of customers and 75.18% of total consumption in LV and MT. Following the commitments of the Greek government through the economic adjustment programs (see next section), the share of PPC in the retail market has been reduced to 70% in October 2019 (46% in medium voltage).



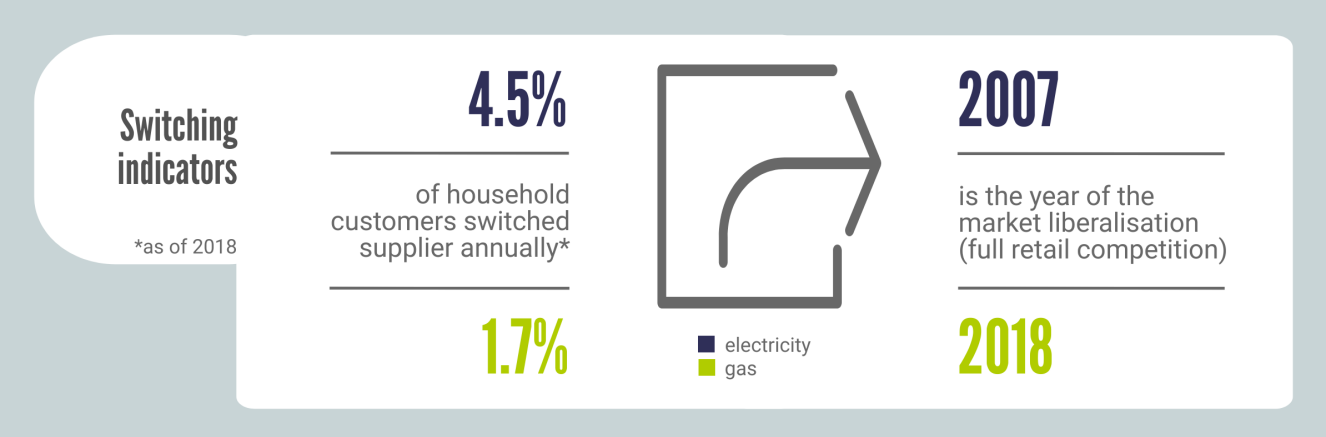
Supplier switching rates are reported by the Greek regulator for 2018 to be of the level of 4.5% (households) to 5.55% (small industrial and other LV customers). More recent data (that would reflect the substantial reduction in

the PPC share are not available. To this regard changes are however awaited due to PPC changes in pricing policies registered in September 2019. Switching rate regarding the gas retail market in 2018 was 1.7% for the household segment.

Political and regulatory orientation

The country's sovereign debt/financial crisis, which began in 2009 as a spillover of the global economic crisis of 2007-2008, resulted in an economic adjustment programme (EAP) firstly agreed between the Greek government and the European Commission, the European Central Bank, and the International Monetary Fund, in 2010. The original programme was followed up by a further 2 programmes (the second from 2012 to 2015, and the third from 2015 to 2018, which for the first time involved the European Stability Mechanism, ESM). These programmes and the related Memorandum of Understanding (MoUs) resulted in the Greek State committing to several reforms in the energy sector. Post-programme surveillance notes its progress in these areas. Notably the following were agreed:

- A reduction in the share of the incumbent PPC in the retail and wholesale electricity market (on going).
- Based on an existing anti-trust ruling, the privatization of a share of PPC's lignite production (not yet implemented, and an alternative remedy is now being discussed).
- The privatization of the gas transmission system operator DESFA (completed).
- The separation of gas distribution and supply activities and the abolishment of all original concessionaire licenses by 31 December 2017. Currently all provisions of Directive 2009/73/EC are implemented, and all distribution companies are unbundled from supply.
- The privatization of the incumbent gas supplier DEPA (ongoing).



The implementation of the Electricity Target Model expected to be finalized within 2020 and the operation of a gas trading platform possibly within 2021 are expected to promote transparency and reasonable liquidity at wholesale level and thus also promote the functioning of the retail market.

In 2016, Law 4389/2016 introduced the sale by the incumbent PPC of electricity forward products with physical delivery. The products were made available by auction and were bought by electricity suppliers. The system is referred to as 'NOME' auctions, after the French acronym for such models.

The market auctions were designed with the aim to:

- Reduce, by the end of 2019, the market share of PPC in the retail market of the interconnected system from 95.24% (as of August 2015) to less than 50%.
- Enhance competition among alternative suppliers and PPC by allowing the former to gain access to cheap electricity produced by the latter's lignite-fired and hydro plants.

The NOME auctions had been a main driver to the opening of the Greek retail market. Through the NOME auctions alternative suppliers gained access to the "cheapest energy sources" of the incumbent at very competitive prices and managed to increase their market share. As the system was prematurely halted in late 2019, with the cancellation of the last-planned auction, a major uncertainty exists as to whether the electricity retail market will retain the positive momentum of the previous years.

The National Energy and Climate Plan, submitted to the Commission in December 2019 includes commitments for a zero-lignite strategy to 2028, an ambitious plan for energy efficiency actions and innovation, a goal for incentive based regulation, further digitalisation of infrastructure services, new infrastructure to increase connectivity in electricity and gas and a general commitment for measures to increase of competition in the energy sector.

Regulatory market characteristics

Price regulation

Electricity prices have been fully liberalized since 01.07.2013. The only regulated tariffs are those under Public Service Obligations, i.e. the social tariffs (equal to all vulnerable customers who meet the requirements set by Ministerial decree) and the prices offered under the Supplier of Last Resort and Universal Service Supplier services.

Gas supply prices are also completely deregulated, while transmission and distribution tariffs are regulated.

Regulatory orientation

The implementation of the economic adjustment program between Greece and the country's lenders resulted in a substantial decrease of public sector salaries, including the salaries of RAE personnel (up to 25%). In turn, this led to a massive walk out of experienced personnel from the Regulator and to a substantial weakening of RAE specially in terms of know-how. Regardless of the challenging situation for RAE, which continues to nowadays, Greece is to the extent possible, rapidly implementing all EU energy regulation.

Planned regulatory developments

The market situation in the electricity sector remains challenging due to delays in the implementation of the Target Model, the abolishment of the NOME system and uncertainties on the design of an at least transitional mechanism until the Target Model becomes operational. The bad debts of the incumbent PPC's and the high level of household debts continue to create substantial uncertainty to electricity suppliers. Nevertheless, the market share of retail suppliers (third parties other than PPCs) has reached a level of about 20% in the two-year period 2016-2018. During the first semester of 2019, the market share of PPC amounted to 73% of the low and medium voltage consumption. Whether this momentum will continue after the end of the NOME system remains highly uncertain. The gas market was fully liberalized only in January 2018. The market is mainly shared between two main suppliers and a number of smaller players that rely on long term supply contracts and short-term bilateral transactions. The Greek market still operates on the interim measures of Regulation (EU) 312/2014. The lack of an organized trading platform for long- and short-term trades between participants hinders market liquidity and may cause substantial uncertainties to smaller players. The platform is under design by the Hellenic Energy Exchange and could become operational late 2020. The completion of the upgrade of the Revythoussa LNG terminal (late 2018-early 2019) with the addition of a third tank, the upgrade of vapourisation capacity and a harbor that can now host world scale LNG ships, together with the extremely favourable global LNG prices have created a positive momentum in Q1-Q3 2019. The operation of the TransAdratic Pipeline (TAP) in 2020 will link the Greek gas market to the Italian PSV and can provide a substantial potential to further market development.

Context for aggregation/demand response

The legal framework (i.e. Laws 4425/2016 and 4414/2016) have introduced the concept of the demand-response aggregators. Demand response (DR) aggregators are licensed by RAE and will be participating in the balancing market due to become operational probably by the second half of 2020. At the time of writing this handbook, few DR Aggregators have the license to operate in Greece. As reported by the Greek NECP, a regulatory framework for storage will be in place by 2020 with simplified procedures for licenses.

However, demand response measures have been in place since at least 2014. These were intensified after the transposition of Directive 2012/27/EU into the Greek legal framework (Law 4342/2015).

The TSO has the right to interrupt eligible high voltage consumers in the interconnected system for a specific period of time. Interruption may take place when necessary at a predefined load level. A compensation is offered to interrupted participants. The compensation is paid out of the so called “Reserves Account for Security of Supply” operated by the TSO. The account is financed through a levy imposed upon all the power producers. Interruptible contracts like the one described above are offered following an auction. Two types of Interruptible Load Services (ILSs) are offered by the Greek TSO (ADMIE),as shown below .

Product Type	ILS Type 1	ILS Type 2
Notice Time	5 min	5 min
Duration of each power reduction order	48 hours	1 hour
Maximum number of power reduction orders per month	3	4
Maximum duration of load shedding per year	288 hours	24 hours
Minimum period between two consecutive power reduction orders	1 day	5 days

The procedure ran following the decision of the European Commission (C(2014) 7374 final) who concluded that the measure, and its financing mechanism, do not constitute aid. The mechanism was initially approved until 2017.

On February 2018, the Commission acknowledged (State aid No. SA.48780 (2017/N)) that the scheme has proven its value during the tight supply situations in December 2016 and January 2017, when electricity cuts were avoided thanks to the reduction of the consumption of the participants in the scheme and noted that Greece has also committed to in parallel implement reforms in the electricity market which aim at remedying the underlying regulatory failures. The scheme expired on 2 February 2020. After this time, a new Commission decision prolonging the scheme may be required or demand response needs to participate in the market.

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

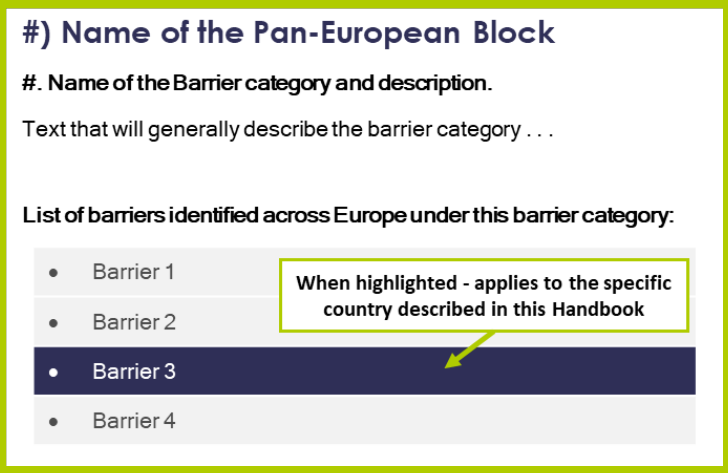
Description of the four-over-arching pan-European barrier blocks:

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 page. Altogether, we identified 45 barriers, most of which broadly across Europe. Only a selection of them apply to the Greek case as reported in the following chapters of this handbook.

HOW TO READ AND INTERPRET THE FOLLOWING SECTIONS

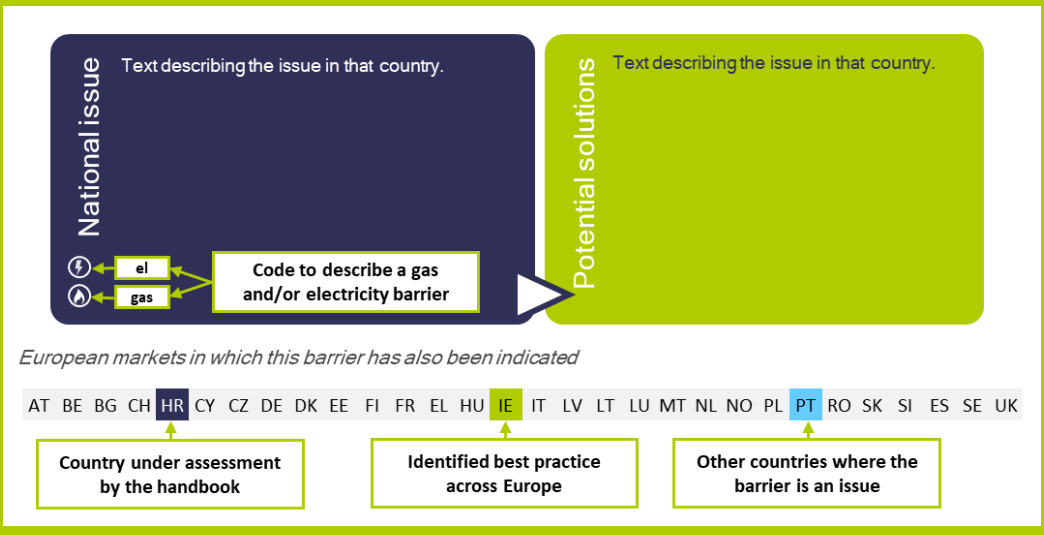
Each of the following four chapters explores one of the four pan-European blocks of barriers and report how each sub-category barrier apply to Greece. When a barrier applies to Greece, it will be highlighted in the table following a general description of the barrier itself, as shown in the example below:



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

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

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



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

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

1) Regulatory disincentivisation

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

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.
2. According to CEER[4], 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 either raised, indicated or identified as barriers in Greece:

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

3. **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 a46s 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 Greece:

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

4. **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

[4] 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 Greece:

- 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

5. **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 Greece:

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

1.1 Description of regulatory disincentivisation barriers in Greece: Price regulation

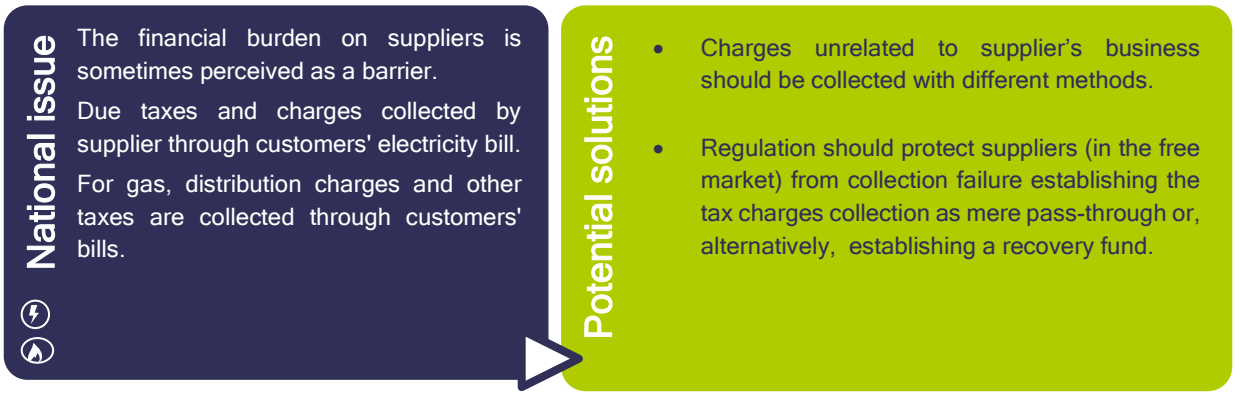
No barriers have been indicated under this subcategory.

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

Obligation to collect tariffs unrelated to energy on behalf of others. In the research this barrier was indicated as an issue in Greece. It shall be noted that this is common across suppliers regardless their origin. However, as in any other segment of the economy, ultimately this financial burden affects more the smaller companies.

In general, the obligation to collect non-energy-related charges, with the risk of delayed or non-payment, presents a barrier as it can substantially increase the total risk as well as required cash reserves. In other European markets, energy suppliers may be tasked with collecting fees for unrelated services, e.g. TV license fees, or providing other services, e.g. energy efficiency measures.

Identified national issue and related potential solutions regarding the Greek case are reported in the graphic below.



European markets in which this barrier has also been indicated

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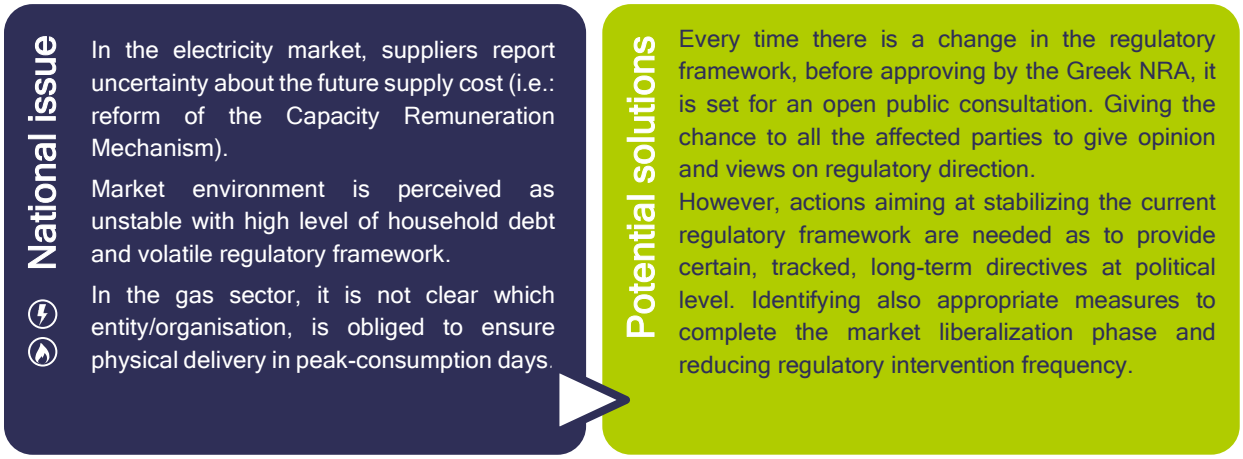
1.3. Description of regulatory disincentivisation barriers in Greece: Regulatory unpredictability

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 Greece.

In general, uncertainty can arise from a brand-new regulatory environment, which may include poorly defined responsibilities between actors, lack of or understaffed responsible departments/authorities that the supplier must communicate with, etc. Also, suppliers may experience uncertainty because of unpredictability around what the future regulatory framework will look like and hence what business opportunities will be possible.

National issue raised by suppliers and related potential solutions regarding the Greek case are reported in the graphic below.



European markets in which this barrier has also been indicated

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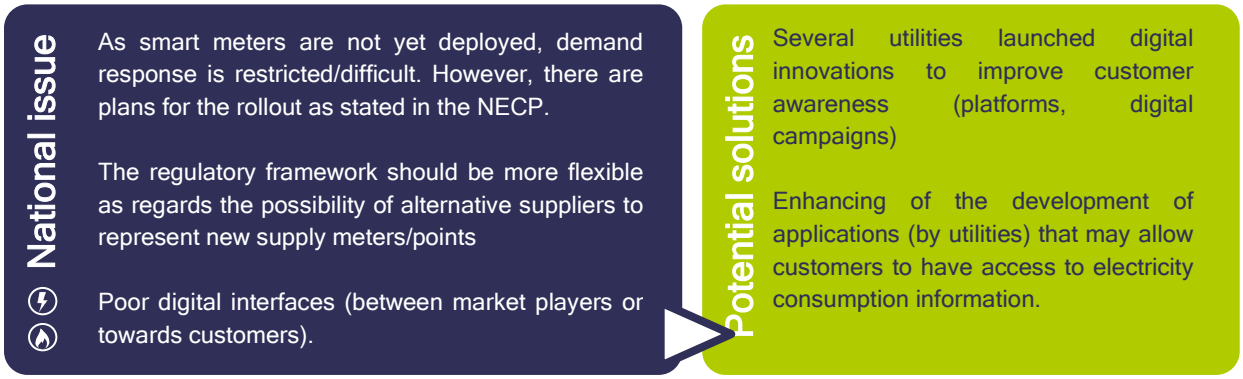
Uncertainty regarding future regulatory developments, especially in the field of digitalization and new technology. In the research this barrier was identified as an issue in Greece.

In general, new technological advances require regulatory frameworks in order to be fully rolled out without excessive business risk for suppliers. Smart meter rollout targets, progress and associated rights and obligations can be a main source of uncertainty. Also, regulatory uncertainty regarding the future of demand response aggregation or other novel services can hinder investment/innovation in these areas.

National issue raised by suppliers and related potential solutions regarding the Greek case are reported in the graphic below.



European markets in which this barrier has also been indicated

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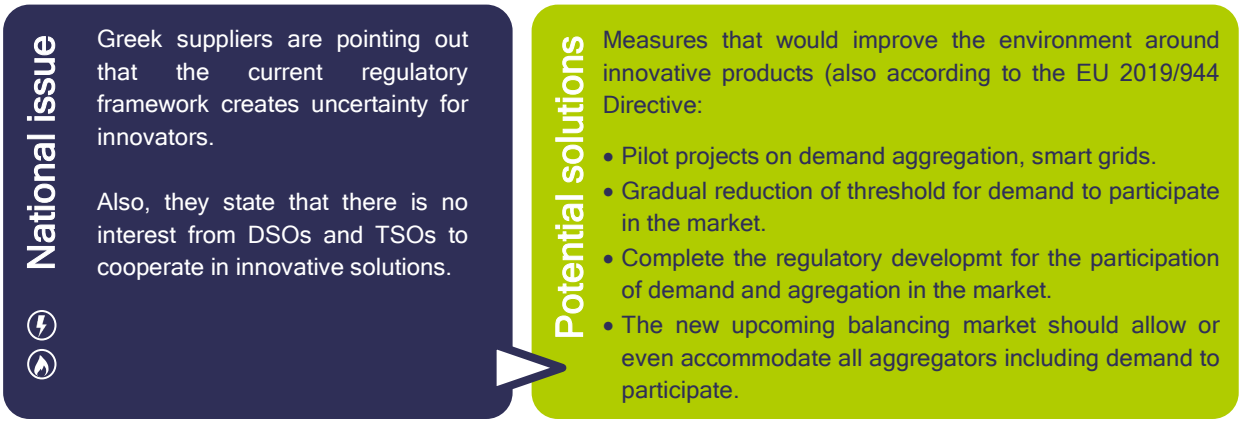
1.4. Description of regulatory disincentivisation barriers in Greece: Access to innovation

Lack of incentivisation for novel pilot projects or post-pilot market rollout. In the research this barrier was identified as an issue in Greece.

In general, the lack of financial incentives as well as missing technical support can be a major barrier for conducting pilots in DR and other novel technologies, as the piloting firm then bears all the risk for this experimental work. Projects started as pilots may even be tied by explicit conditions that they cannot remain on market after the completion of the pilot. This discourages participation, as there is no immediate commercial reward. National issue raised by suppliers and related potential solutions regarding the Greek case are reported in the graphic below.



European markets in which this barrier has also been indicated

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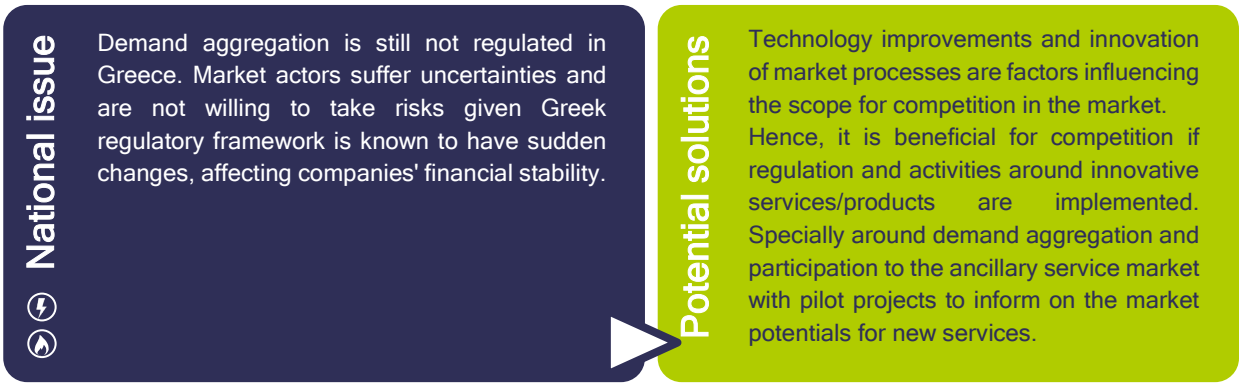
FINLAND BEST PRACTICE CASE: Incentivizing novel projects

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

Market structures does not incentivize novel products (missing market value). In our research this barrier was raised as an issue in Greece.

In general, without an existing market 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. The missing market could be due to a technology lag, customers' being unaware or not incentivized, or little competition between traditional suppliers resulting in little need for suppliers to innovate/differentiate.

National issue raised by suppliers and related potential solutions regarding the Greek case are reported in the graphic below.



European markets in which this barrier has also been indicated

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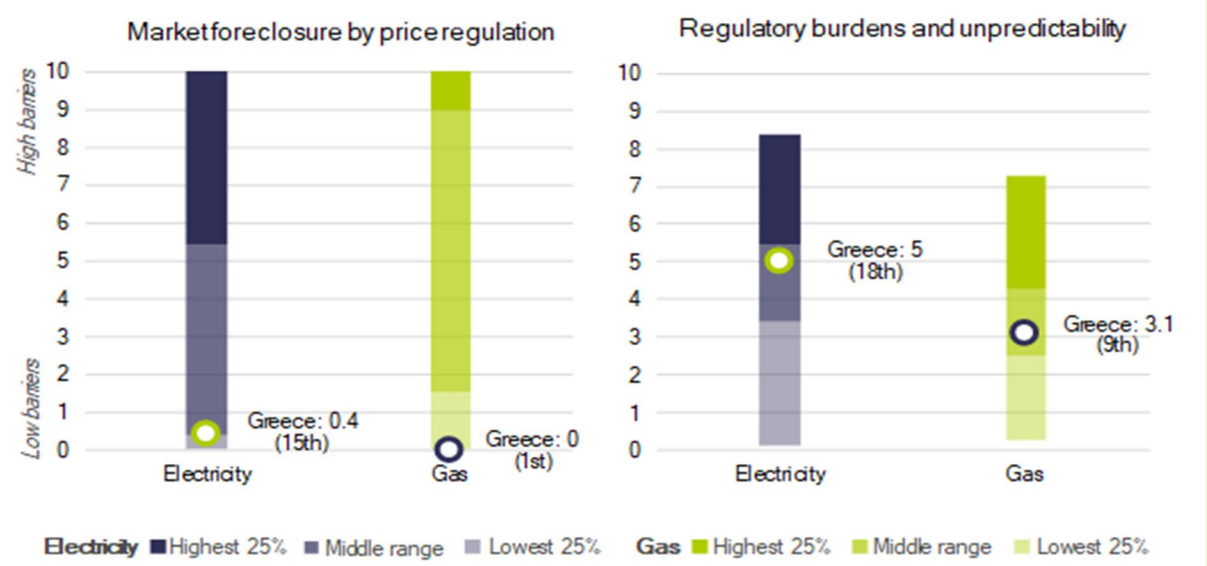
1.5. Greece's performance in this barrier category

The following figure shows quantitative indicators of how far regulatory disincentivisation acts as a barrier in this market. The values for Greece 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



Greece was ranked in the lower range for market foreclosure indicator, due to the fact that there is no price regulation in place, for both electricity and gas. While regulatory burdens and unpredictability in Electricity and gas ranked similarly for both indicators.

2) Market inequality

Within market inequality, barriers across Europe have been sub-categorised into two areas encompassing 8 specific barriers[5]:

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

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

   Across Europe, the following specific barriers around "unbundling and market power" were detected by this study. Those highlighted in blue have been raised, indicated or identified as barriers in Greece:

   - 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.

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

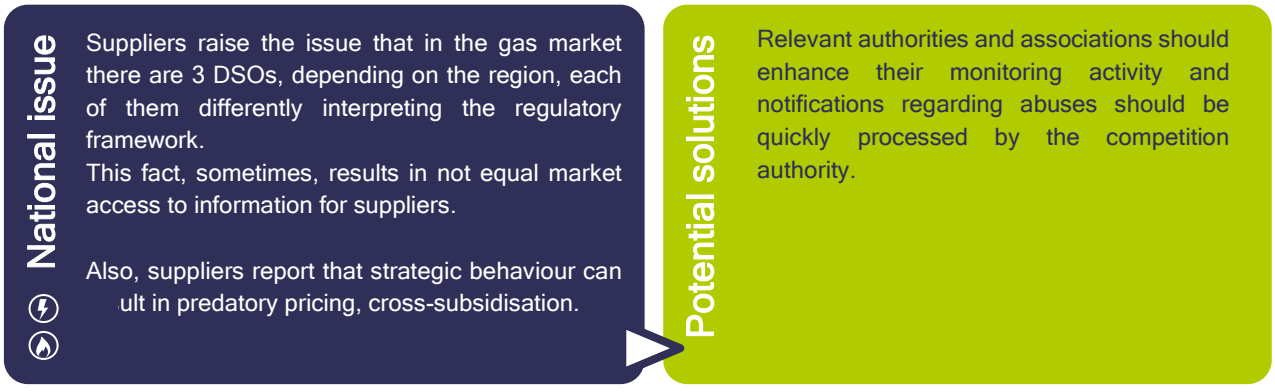
Barriers related to the wholesale market can arise by discriminatory market platform access and the absence of any viable alternative. Furthermore, a lack of available products and low liquidity can both lead to an increase in risk, disadvantaging small market participants substantially more than large, established suppliers. Across Europe, the following specific barriers around "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 Greece:

- 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 Greece: Unbundling & market power

Discriminating, strategic behaviour of incumbent, and obstruction by other market players. In our research this barrier was identified as an issue in Greece.

In general, the incumbent/existing suppliers are able to use tactics in pricing, customer access, combined billing (including the cost of social tariffs) etc. not available to new entrants. For example, large established players can afford to dump prices for certain customers to retain them. Market players with a lot of power, i.e. market share, may act in an obstructive way, especially around data exchange. This can especially disadvantage small suppliers with only a limited customer base to draw data from. If regulated DSOs are involved in other areas of activity such as customer care or flexibility services, it can narrow deregulated suppliers' potential to expand into these areas. National issue identified by suppliers and related potential solutions regarding the Greek case are reported in the graphic below.



European markets in which this barrier has also been indicated

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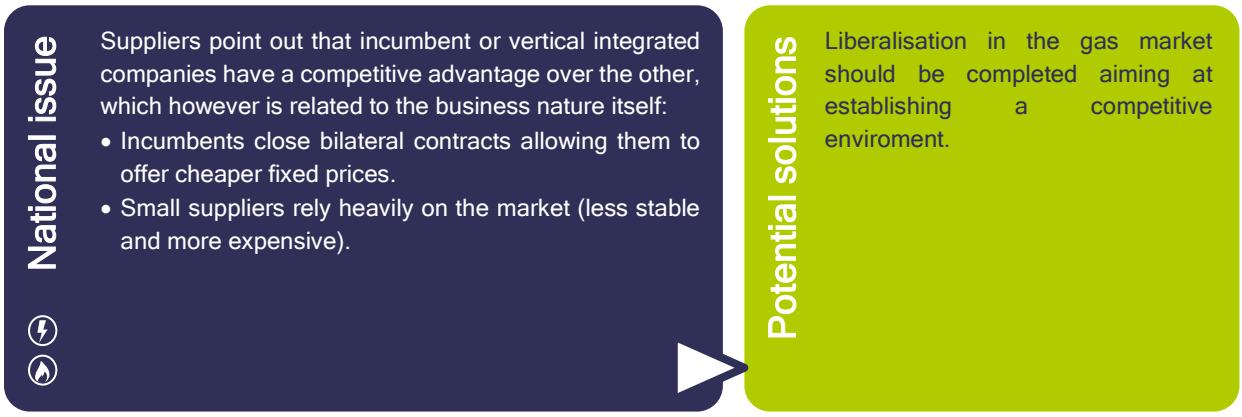
Strategic, advantage of vertically integrated market players and lack of transparency. In our research this barrier was identified as an issue in Greece.

It has been found that in Europe, vertically integrated companies still have competitive advantages over small suppliers, in terms of being able to target customers based on consumption profiles or win back customers during the switching process, or in terms of access to financing.

Greek national issue identified by suppliers and related potential solutions regarding the Greek case are reported in the graphic below.



European markets in which this barrier has also been indicated

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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. In our research this barrier was identified as an issue in Greece.

In general, it might be the case that in Europe, in some countries, the balancing landscape remains focused on large-scale generation. This can exclude smaller-scale/aggregated generation or demand-side bids from participating in balancing markets as they cannot meet the product requirements. Inefficient capacity markets can lead to a market distortion, benefitting specifically incumbents and other established market players who are able to meet the large generation-focused market conditions (bid minimum size, treatment of users with asymmetric balancing etc.).

However in Greece, law 4512/2018 and RAE Decision 369/2018, on the application of the target model in Greece, favour the participation of RES plants, through aggregators, as much as of their load, in the balancing market (which is expected to be fully functionable in the second semester of 2020).

Greek national issue identified by suppliers and related potential solutions regarding the Greek case are reported in the graphic below

National issue

Elect.-As most suppliers use the TSO's load forecast, suppliers propose to exclude the TSO's forecast error (MAPE) from the imbalance penalty.

Gas-Forecasting errors are punished by the TSO through the imposition of high balancing costs.
Better and more detailed transparency reporting on network technical features and real-time operational data (updates on entry and exit flows as well as line pack status take place only at five times per day).

Potential solutions

- Enhance monitoring activities aimed at guaranteeing equal access of all participants.
- Platform imbalance calculation should guarantee the equal access of all participants (for electricity, allowing full participation of demand and RES generators).

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

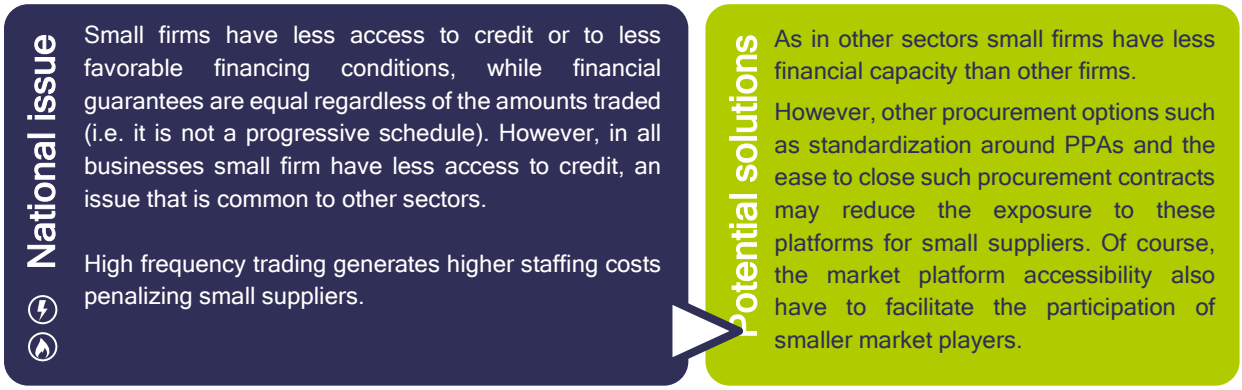
Several respondents active in aggregation and demand response expressed satisfaction at how Finland has redesigned balancing products to make them amenable for demand-side bids, complemented by its market-centric approach to DR. This indicates a willingness to let flexibility play a bigger part in the 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 stepwise 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 Greece: Equal access to & maturity of wholesale market

Discriminatory market platform access (standards, guarantees, etc.). In our research this barrier was identified as an issue in Greece.

In general terms, across Europe, if the same requirements/treatment for establishing market access are applied regardless of company size, small suppliers bear a disproportionate administrative or financial burden for market access. Nonetheless, it is worth mentioning that most of these platforms are privately managed and thus is unlikely the ability to reverse such barriers. Market arrangements favoring the development of new generation and bilateral agreements may relief partially this burden.

Greek national issue raised by suppliers and related potential solutions regarding the Greek case are reported in the graphic below.



European markets in which this barrier has also been indicated

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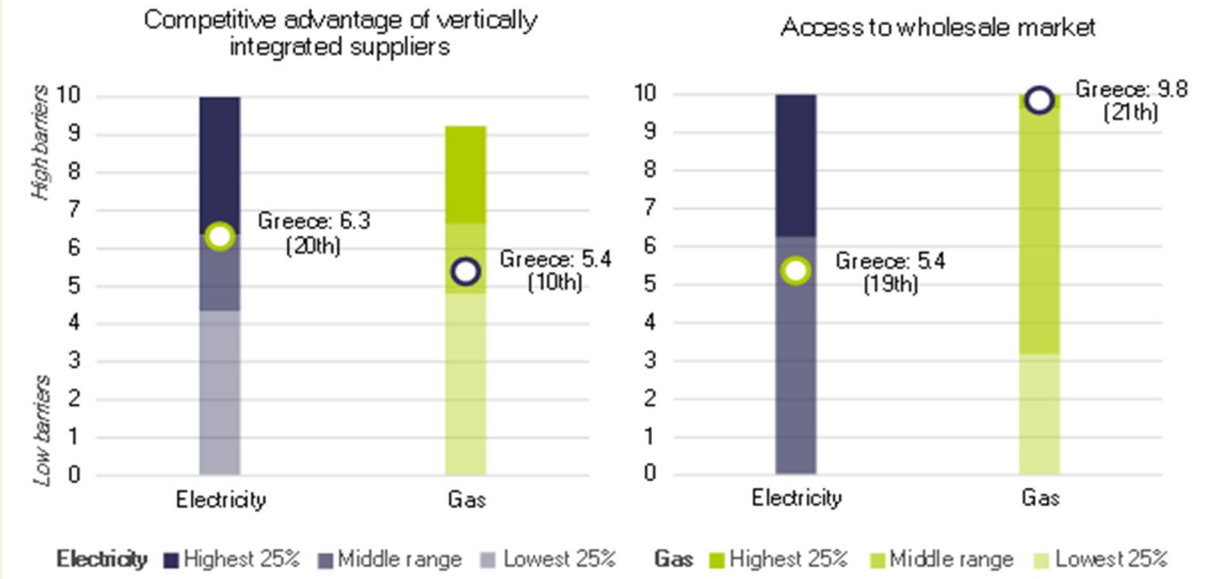
2.3. Greece's performance in this barrier category

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

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



Greece was ranked in the middle range for both indicators, however showing a worse placement in the electricity sector mainly due to the competitive advantage of certain type of suppliers.

3) Operational and procedural hindrances

Within operational and procedural hindrances, barriers across Europe have been sub-categorised into two areas encompassing 13 specific barriers[6]:

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,

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

balancing. This procedure can be very different from a country to another. Accessing wholesale markets and balancing may also require a license or prior agreement/registration with the market operator. In some markets, business processes to enter and operate in the retail market can be extremely detailed and burdensome. The lack of a functioning national wholesale market may also hinder the entrance of retail companies that are not vertically integrated.

Across Europe, the following specific barriers around "sign-up & operations compliance" were detected by this study. Those highlighted in blue have been raised, indicated or identified as barriers in Greece.

- 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 around "data access & processes" were detected by this study. Those highlighted in blue have been raised, indicated or identified as barriers in Greece.

- 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 Greece: Sign-up & operations compliance

Poor availability of information for market entrants & active participants. In this research this barrier was raised as an issue in Greece.

Generally, detailed information about legislation, licensing requirements and procedures during operations etc. are not readily available, or only in the local language. This makes it difficult for potential new entrants to (1) understand the market and judge its suitability for their business; (2) efficiently go through the entry process to establish on the market; (3) operate effectively and efficiently.

Greek national issue raised by suppliers and related potential solutions regarding the Greek case are reported in the graphic below.

European markets in which this barrier has also been indicated

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

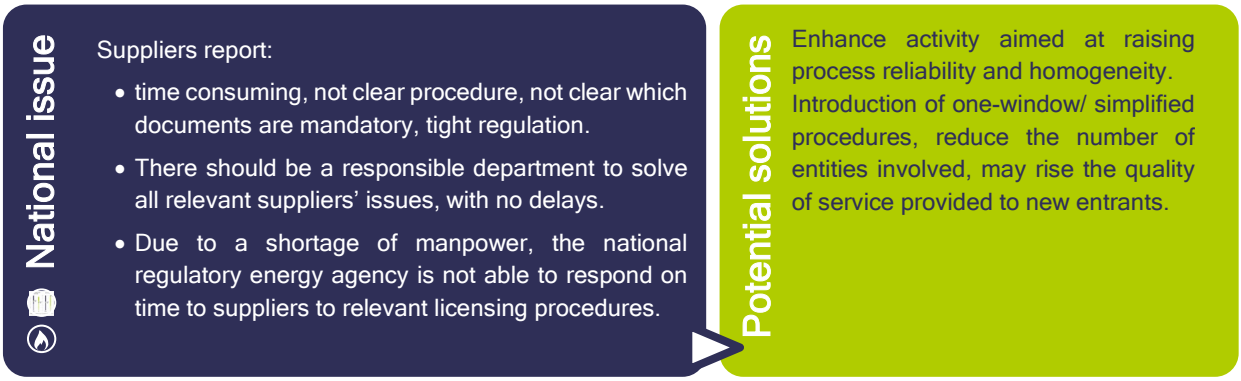
The Austrian NRA, E-Control offers a comprehensive "starter kit" with all the necessary information for new market entrants in German and English language (see chapter "Information gathering before market entry" in the Appendix 1 "Processes".). Furthermore, statistical data, covering switching rates, price levels, smart metering rollout progress and others is frequently being published. Therefore, a barrier is not only non-existing, but even more, the situation in Austria can be regarded as a best practice.

Heavy administrative process for entry (registration/licensing). In this research this barrier was raised as an issue in Greece.

In general, the processes required to enter a market may constitute a large administrative burden. Overly complicated and very time-consuming processes and requirements present a barrier in terms of the time and

money that new entrants must invest. This barrier refers to all steps required to obtain a license or registration allowing participation in the market as a supplier.

Greek national issue raised by suppliers and related potential solutions regarding the Greek case are reported in the graphic below.



European markets in which this barrier has also been indicated

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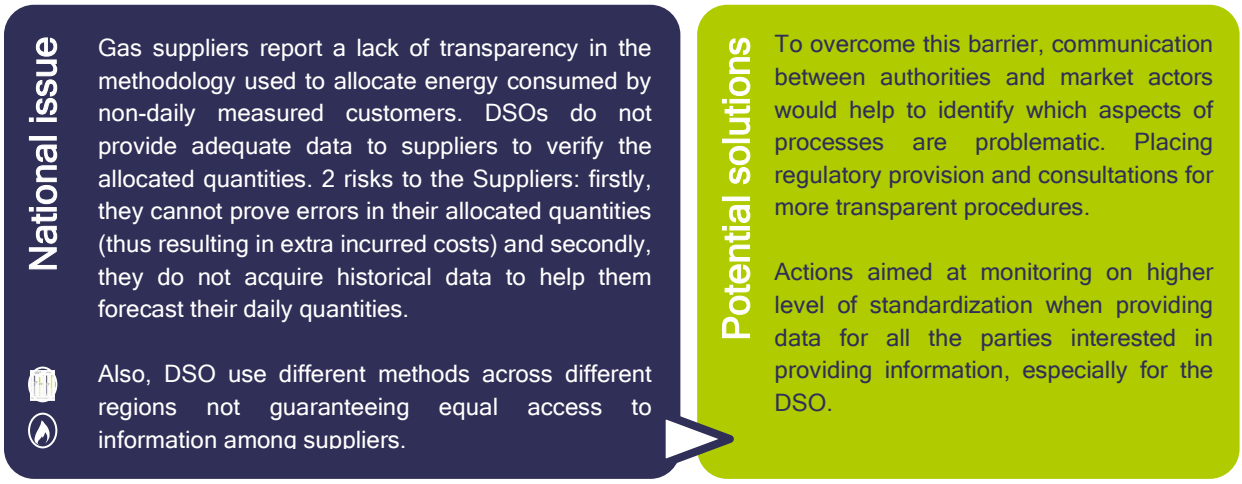
Regional differences or differences between DSOs within a country. In this research this barrier was raised as an issue in Greece.

As a general concept, different regions within the country or different DSOs' grid areas have different processes, data formats etc. This requires more effort from the supplier to be active across many regions, compared to if there were national standardisation. Examples of such difference include DSOs' reporting on operational data and non-transparent forecasting methodology.

Greek national issue raised by suppliers and related potential solutions regarding the Greek case are reported in the graphic below.



European markets in which this barrier has also been indicated

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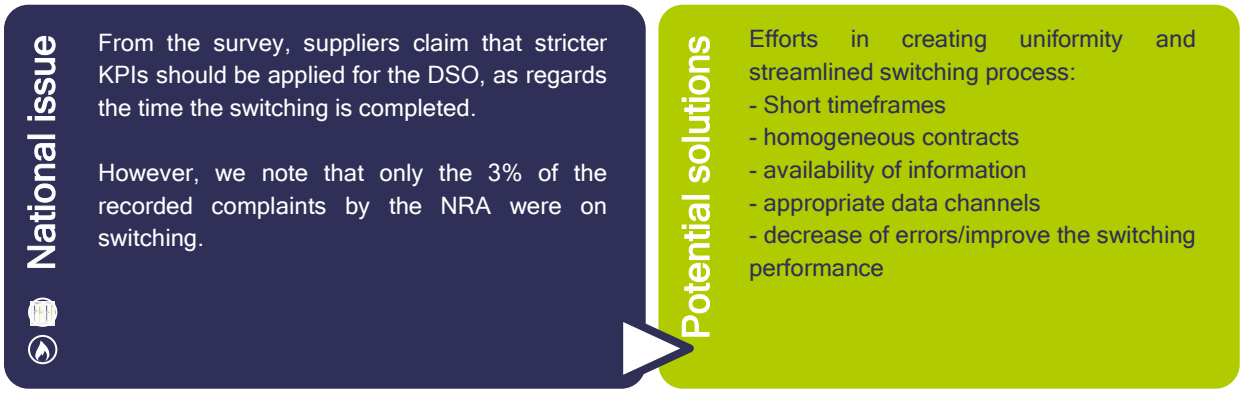
Cumbersome or biased switching process. In this research this barrier was raised as an issue in Greece. Switching is difficult for the suppliers due to the amount of information that must be provided, the time it takes, permissions that must be sought, complex technical systems etc. Existing suppliers have an advantage because they are the default supplier if the switch is not completed and may get warning for preemptive win-back.

Greek national issue raised by suppliers and related potential solutions regarding the Greek case are reported in the graphic below.



European markets in which this barrier has also been indicated

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

Lack of data hub. In this research this barrier was raised as an issue in Greece.
In general terms, this barrier may increase the time and effort required by suppliers to access customer or network data, e.g. to enact a switch or target potential new customers.

Greek national issue raised by suppliers and related potential solutions regarding the Greek case are reported in the graphic below.

European markets in which this barrier has also been indicated

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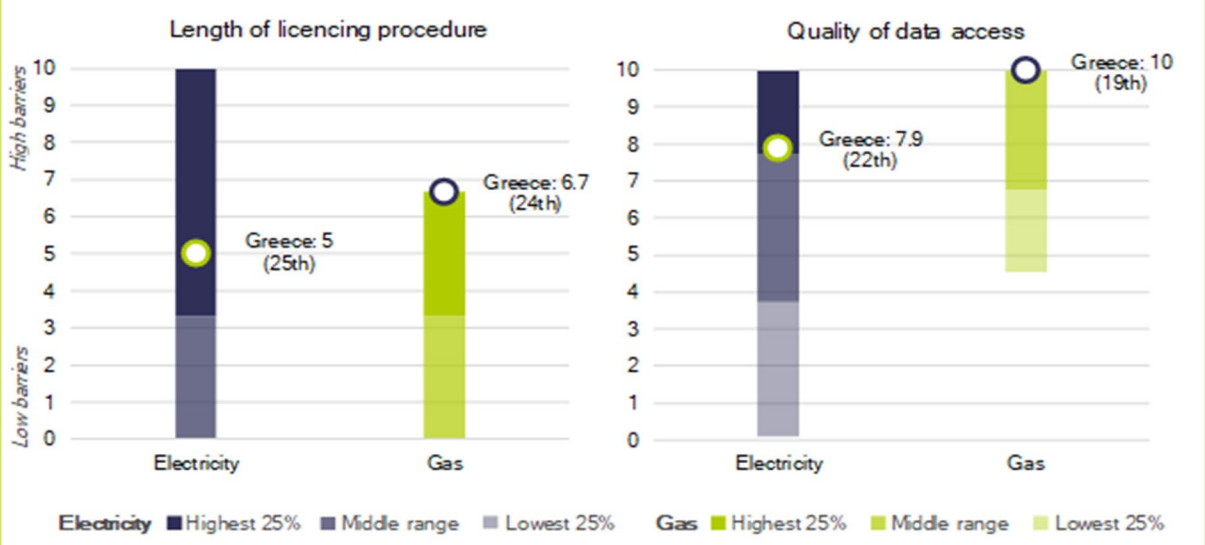
3.3. Greece's performance in this barrier category

The following figure shows quantitative indicators of how far operational and procedural hindrances act as a barrier in this market. The values for Greece 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



Both indicators record hurdles reported by suppliers in getting a licence but also in accessing high quality of data, in both electricity and gas markets.

4) Customer inertia

Within operational and procedural hindrances, barriers across Europe have been sub-categorised into one area encompassing 6 specific barriers[7]:

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

   Across Europe, the following specific barriers around "customer orientation" were detected by this study. Those highlighted in blue have been raised, indicated or identified as barriers in Greece.

   - Lack of information regarding available offers and switching possibilities
   - Low customer awareness or interest makes it difficult to attract customers

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

- 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 Greece: Customer orientation

Low customer awareness or interest makes it difficult to attract customers. In this research this barrier was raised as an issue in Greece.

In general terms, if customers are not well informed, they are not driven to seek out or engage with new energy suppliers.

In Greece, customer switching process is managed by the new selected suppliers that interact with the DSO and can cancel the customer contract with the old supplier on behalf of the customer. However, there is a very low level of customer awareness and suppliers have bad reputation limiting the customers willingness to look for alternative offers. Despite this perception, it is worth mentioning that in the past few years switching rates in Greece have been among the highest in EU.
Even though there is a comparison tool being developed and maintained by the RAE, the wide variety of offers available in the market now, make it almost impossible to customers to evaluate the offers. Although this is not necessarily perceived as a barrier since is widely used by all suppliers.

Greek national issue raised by suppliers and related potential solutions regarding the Greek case are reported in the graphic below.

European markets in which this barrier has also been indicated

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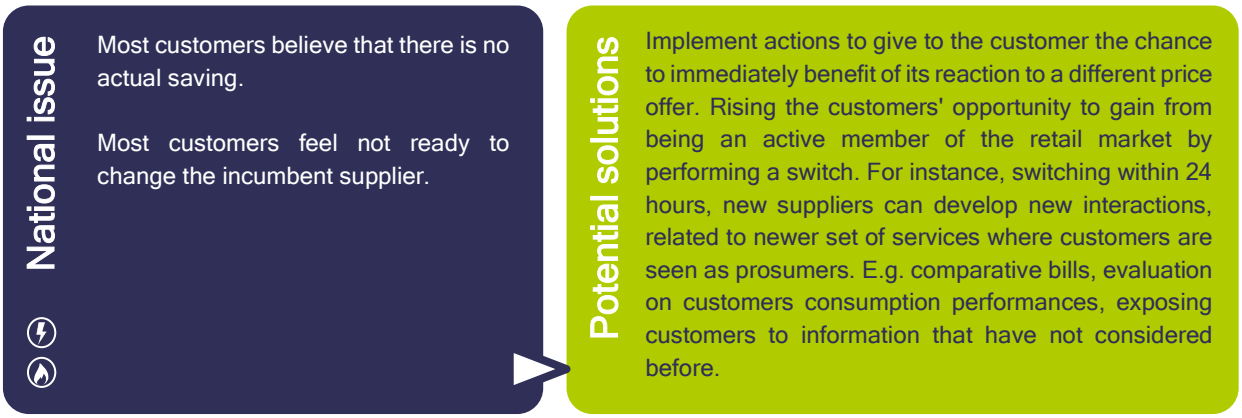
Changing supplier is cumbersome or has little pay-off for the customer. In this research this barrier was raised as an issue in Greece. A slow switching process, one prone to delays and errors, or having to pay to switch, may discourage customers to switch, which in turn lead to low customers engagement. Effective price competition between suppliers requires rapid, effective, such that customers see the benefit to them in a short timeframe. Also, if there is little financial gain for customers to switch, it discourages participation.

Greek national issue raised by suppliers and related potential solutions regarding the Greek case are reported in the graphic below.

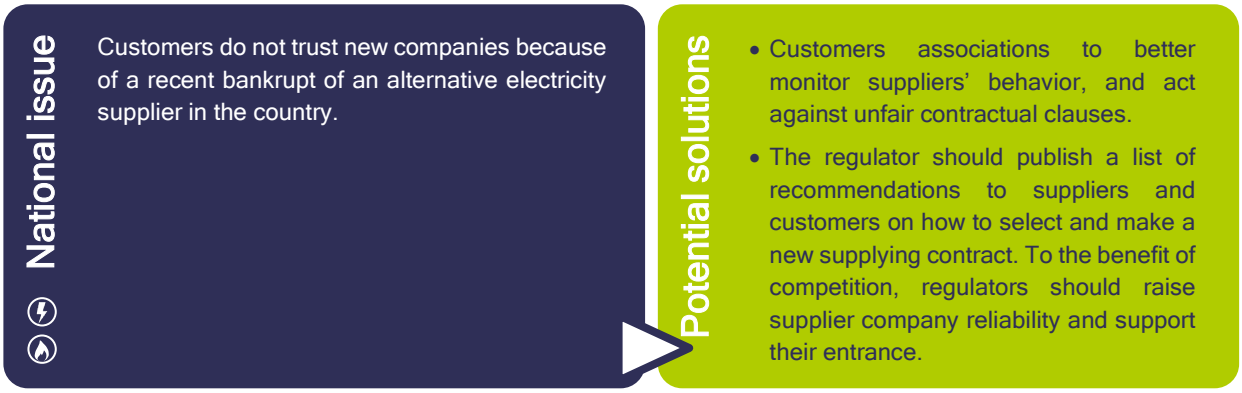


European markets in which this barrier has also been indicated

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 this research this barrier was raised as an issue in Greece. Lack of trust in new and/or foreign suppliers can be caused by previous bankruptcies in the market or simply customer unfamiliarity with the new supplier's quality of service. This presents a barrier for new suppliers trying to attract customers, as they have to invest heavily in building a new relationship. Customers and hence suppliers may also mistrust new technology, 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.

Greek national issue raised by suppliers and related potential solutions regarding the Greek case are reported in the graphic below



European markets in which this barrier has also been indicated

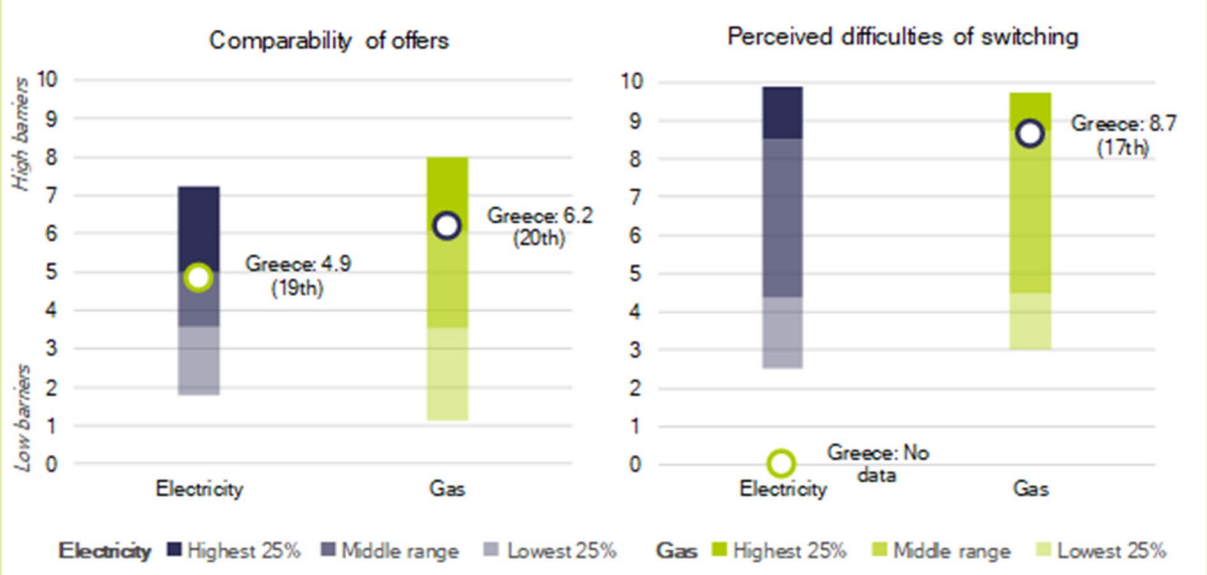
AT	BE	BG	HR	CY	CZ	DE	DK	EE	FI	FR	EL	HU	IE	IT	LV	LT	LU	NL	NO	PL	PT	RO	SK	SI	ES	SE	UK
AT			HR	CY	CZ	DE	DK	EE		FR	EL							NL				RO		SI	ES	SE	

4.2. Greece'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 Greece 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



For both indicators, where data were available, Greece ranked poorly or in the lower bound of the middle range.

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.

No substantial such barriers were identified in Greece.

FINDINGS & RECOMMENDATIONS

This handbook provides a high-level framework of relevant barriers to entry and operate for energy suppliers into the Greek retail electricity and gas markets, as well as examples of actions that relevant institutions as NRAs, ministries, etc., have taken, are taking or could take in the future to remove them.

In particular, the handbook groups the barriers to entry and operate in the energy retail market into four different categories as listed below.

1. Regulatory disincentivisation.
2. Market inequality.
3. Operational and procedural hindrances.
4. Customer inertia.

In this section we report the main findings and recommendations for each category.

Under the first group, **regulatory disincentivisation**, suppliers' main concerns relate to a high degree of uncertainty regarding the future supply costs due to the introduction of a capacity remuneration mechanism. Also, issues are raised in relation to the instability of the market due to high household debt and a volatile regulatory framework. Actions aimed at stabilizing the current regulatory framework are recommended and should provide certain, tracked and long-term directives at political level. Identifying appropriate measures to complete the market liberalization phase and reducing frequency of regulatory intervention. Another issue is the limiting of the burden that suppliers are bearing on cash collection, which includes collection of network charges and other taxes, two ways are recommended to relieve suppliers' operations. If on one hand, charges unrelated to supplier's business should be collected with different methods, on the other hand, collection failure should be protected by settling such charges as a mere pass-through or through a recovery fund. Finally, regulation around innovative services should be promoted as smart meters are not deployed. Digital innovation alongside what utilities are already doing should be enhanced. Also, pilot projects should be boosted regarding the demand side participation to ancillary services market, completing the regulatory development also on demand aggregation.

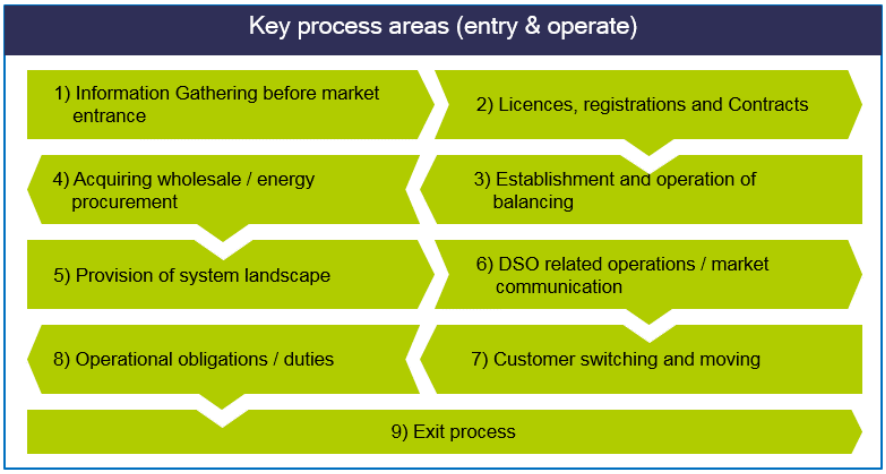
Regarding **market inequality**, barriers have been identified arising from a perceived uneven playing field for different types of suppliers. In particular, suppliers raise the issue that strategic behaviour of certain suppliers may result in predatory pricing with cross subsidisation. Also, regarding the gas retail sector, suppliers report that the 3 DSOs differently interpret the regulatory framework. Monitor activity by the relevant authority should detect such cases, addressing abusive behaviour and streamlining the regulatory framework interpretation. In Greece, the liberalisation process should be completed and in line with EU directives. Finally, as most suppliers use the TSO's load forecast, suppliers propose to exclude the TSO's forecast error (MAPE) from the imbalance penalty. While in the gas sector balancing costs are perceived as high. Monitor activities are recommended to guarantee a fair treatment in the balancing market platforms.

Operational and procedural hinderances are regarded as barriers by some of the suppliers responding to the survey or being interviewed. Complexities and differences in standards and procedures may affects suppliers' entrance and operation in the retail market. Suppliers experience discrepancies in getting metering data, with the required information regarding the retail market usually lacking. Also, suppliers report the lack of entities in charge to solve procedure relevant issues. Together with the perception that the Regulator is in shortage of manpower. Recommendations are made around activity aimed at raising process reliability and homogeneity. With the restructuring and upskilling of the relevant institution and introduction of one-window / simplified procedures to rise the quality of service provided to suppliers. Regarding data and quantities allocation forecast, in the gas sector, Regulation should intervene to make quantity allocation methods more transparent and help the streamlining of DSO procedures.

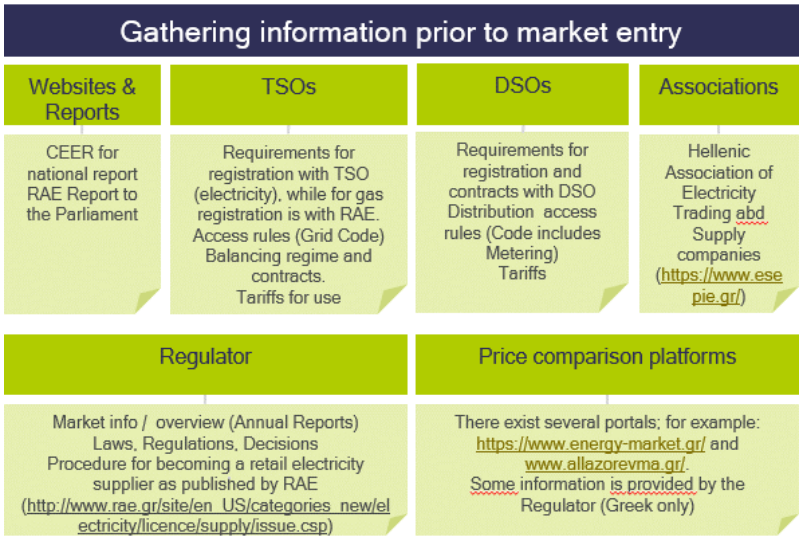
Customer inertia barriers category, groups all those issues related to customer behaviour and attitude within the retail energy market. In Greece, suppliers report that the domestic customer base, in general, experience a quite low awareness. Suppliers report that often customers do not know that switching of supplier is possible, and that the supplier is a different company than the DSO. Additionally, if customers know about the switching, they usually perceive low savings or not ready to leave the incumbent. Finally, customers do not trust new suppliers. Awareness campaign and their strengthening are recommended to relevant authorities to be enhanced amongst customers and supplier. Suppliers should better inform customers with all precontractual information, providing clarity and correct price comparison, raising trust towards suppliers in the market. Finally, customers associations should better monitor suppliers' behaviour, preventing unethical behaviour enhancing market attractiveness and reliability.

APPENDIX 1: PROCESSES

This section describes market processes in energy retail in Greece. It gives 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.



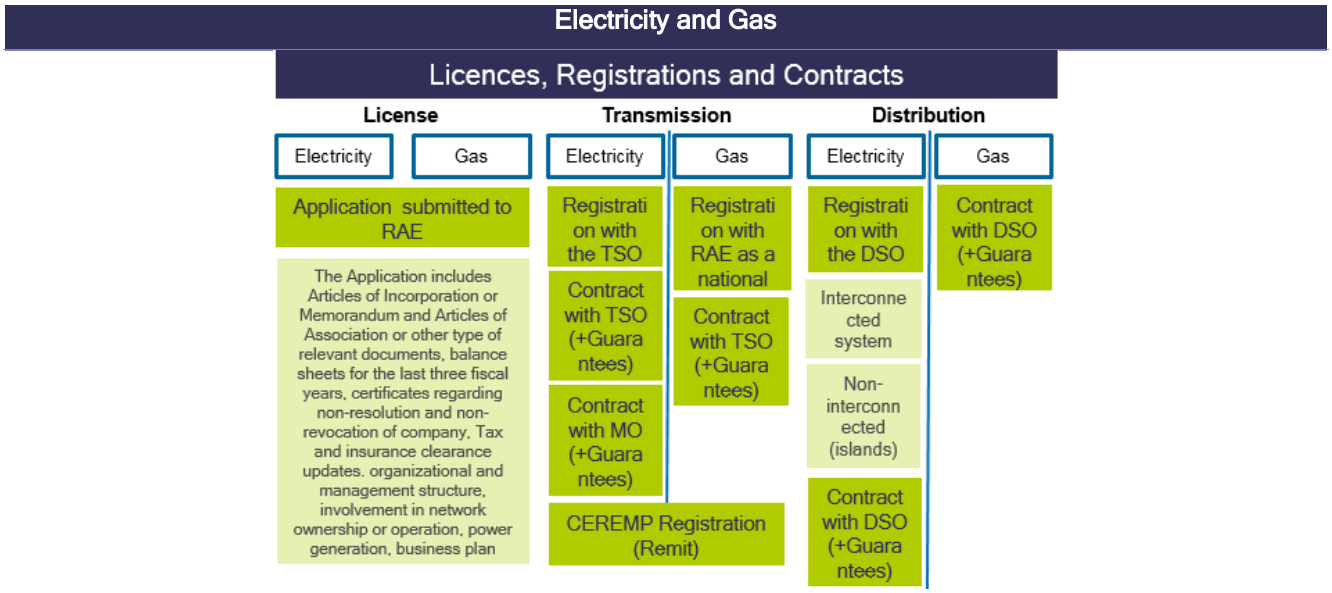
1) Information gathering before market entry



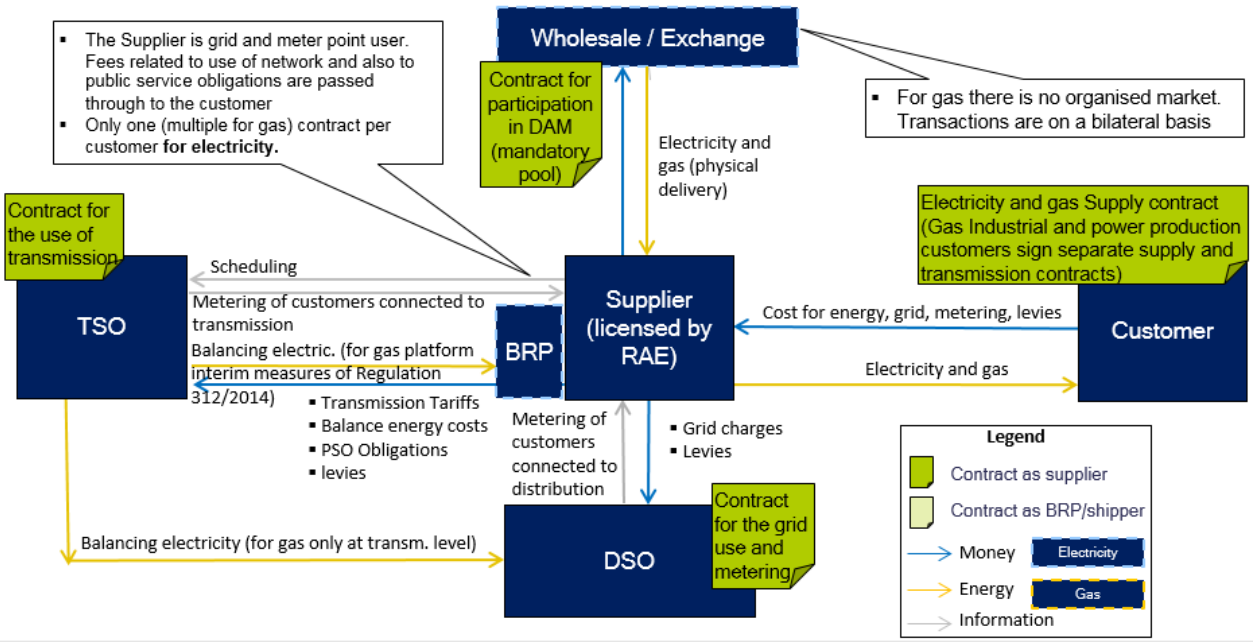
Relevant comments on information gathering

- RAE's Annual Report provides a good high-level overview on retail markets (available in English published on the CEER webpage and on RAE's site). Additional information can be sourced from RAE's Report, annually submitted to the Parliament for review (also available at RAE's website but only in Greek).
- Primary legislation is only available in Greek
- Secondary legislation for electricity (transmission and distribution) is only available in Greek. Tariffs for both transmission and distribution are available at RAE's website (Greek only).
- Secondary legislation for gas (transmission) is available in both Greek and English. This also applies to standard contracts, tariffs and balancing rules. For distribution, the respective documents are only available in Greek, including DSO's tariffs.
- There are 2-3 private tariff comparison websites. RAE has announced that the Regulator will also develop a tariff comparison section in its website.
- RAE publishes a complete list of actions that interested parties need to take in order to become electricity supplier. The list is available in Greek and English on RAE's site. A similar list is available for gas but only for the previous version of the licensing Regulation.

2) Licenses, registrations and contracts



Dependencies / Contracts for Electricity



Further comments

- Applications for electricity and gas supply licenses are submitted to RAE at any time in writing and in electronic form according to the formats defined in (a) Annexes 1, 2 and 3 of Government Gazette B 2940/2012 for electricity and (b) Annex VI of Section I of the Annexes Government Gazette.B 3430/2018 for natural gas. Provisions for a simplified application for the case of entities legally engaged in gas supply in other EU Member States are in place.
- Supply licenses are granted according to the License Regulations for electricity and gas refered above. The respective regulation for electricity is available in Greek and English at RAE's website. Government Gazette B' 2940/05.11.2012 (English version available here). For gas only the previous Regulation 464/19.04.2010 is translated in English (English version available here). The new version of the gas licensing regulation (Gov.Gaz. B' 3430/17.08.2018) is only available in Greek.
- Applicants need to be companies established in the EU, the EEA, the Energy Community or from third countries provided that country bilateral agreements with Greece exist.
- Suppliers licensed in other EU Member States need to apply for a license in Greece. In their application they include information on other licenses they may have and their overall supply activity abroad.
- Licenses are issued by decision of RAE.
- The obligations and rights of the licensee are set by the terms and conditions of their licenses (published and in the License Regulations) and in the respective Suppliers Codes (electricity : Gov. Gazette B' 832/09.04.2013, for English here, gas: Gov Gazette B' 1969/01.06.2018).
- Rules for balancing are prescribed in the respective codes of the TSOs (only gas TSO documents are available in English)

- For electricity, the decision for the issuance of a supply license or for the rejection of the application, is published within three (3) months from the submission of the application, if the file is complete, or within 3 months after the date that the file is deemed complete.
- For gas, the issuance of gas supply licence is within four (4) months from the date on which the application is deemed complete.
- Considering requirements for completing the applications, the total time from application until the completion of all registration processes may be of the order of 4-6 months.

Conditions for the provision of an electricity Supply License

- The Applicant must be Société Anonyme or a Ltd type of company with a registered share of capital of at least € 600.000. (+ € 60.000 for Energy Communities)
- The applicant should demonstrate the existence of an adequate organizational and administrative structure to ensure reliable, credible, prudent and sound business of Supply; financial strength and creditworthiness, as evidenced by the accompanying annual financial statements and business plan.
- The license holder must, in exercising its activities, provide enough long-term guarantees in accordance to the relevant Code.

Application Fees

- The application fee is credited to the Regulator and represents the administrative cost for processing the application and monitoring that the licensee complies with the license terms and conditions.

Conditions for the provision of a gas Supply License

- The applicant needs to be a Societe Anonyme or a Ltd or a private company with a registered share of capital or a company capital of at least six hundred thousand euros (600.000,00 €) or a cooperative capital of at least sixty thousand euros (60,000.00 €), if the applicant is an Energy Community as defined in law 4513/2018 (Government Gazette B' 3430/17.08.2018).
- The applicant should demonstrate: the existence of an adequate organizational and administrative structure to ensure reliable, credible, prudent and sound business of Supply; financial strength and creditworthiness, as evidenced by the accompanied financial statements and business plan.
- Documents accompanying the application are simplified in case the applicant holds a supply license in another Member State.
- The applicant also needs to register as a user of the national transmission system. The official processing of the application needs to be completed within one (1) month from the date that the application is complete (a full list of necessary documents is also published, available in Greek only).

Application Fees

- There is no application fee. The legal framework provides for a fee to account for RAE's administrative costs, but none has been established yet.

Application form language

- The application form must be submitted in Greek. Supporting documents are also accepted in English.

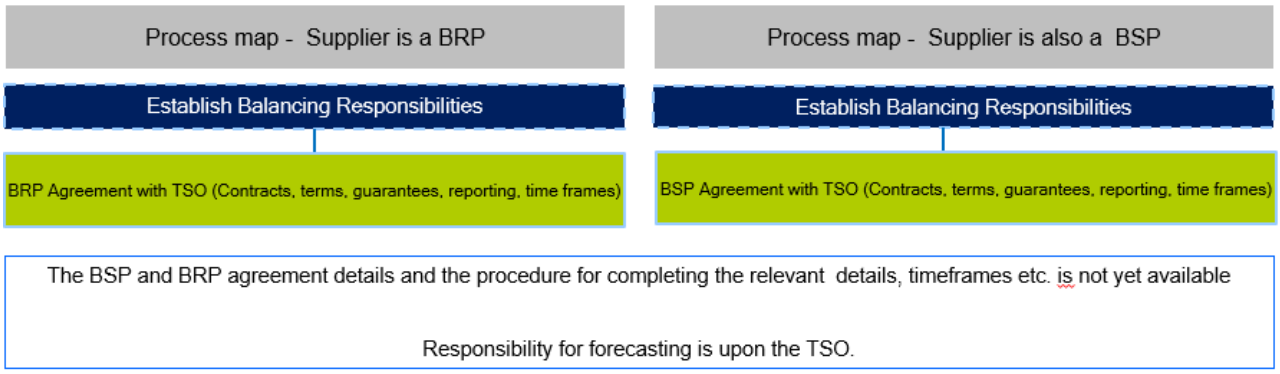
Transparency

- RAE publishes a summary of the application in its website within 15 days from receipt of the application so that comments may be submitted by affected parties.
- The decision for the issuance of the License or the rejection of the application is published on RAE's website (including the license terms and conditions). It is notified to the Minister of Environment, Energy and Climate Change, as well as to the competent Operators.

3) Balancing

Electricity

Greece has a central dispatching model. The balancing market (according to Regulation (EU) 2017/2195) was planned to be operational on 6th of June 2019 (RAE's Decision 1116/2018), but it has not been activated yet. A supplier that is not a BSP is anticipated to reach a relevant agreement with the BRP.



- Both suppliers and RES producers will proceed to forecast their load and generation respectively. However, since Greece has a central dispatching model, TSO should proceed, simultaneously, to its own forecast to estimate system's reserve needs.
- The National Balancing Code sets that the BRP must abide to the instructions of the TSO, meet the financial obligations and follow the communication protocol set by the TSO (not established yet according to the provisions of the Code, article 16 par. 2)

- The cost of balancing will be calculated according to the procedure of article 88 of the National Balancing Code as the average of the Upward Activated Balancing Energy and Downward Activated Balancing Energy offers made during the settlement period.
- The level of guarantees for participation in the balancing market is not yet available.

Gas

- All shippers of the natural gas transmission system have balancing responsibilities.
- Currently the transmission system operates on interim measures (as provided by Regulation 312/2014). This means that the TSO (DESFA) operates a balancing platform (i.e. the TSO is the 'trading participant to all trades).
- Shippers balance their portfolio through bilateral transactions. However, the development of an organized trading platform is underway - but most likely it will not be available before the beginning of 2021.
- Under the current operating conditions of the Greek gas market such as the limited storage capacity of the transmission system and the restrictions imposed by the existed importing supply contracts such as "take or pay clause", DEPA's commitment to its own gas release (sale) program is currently, the main option for gas supply to third parties - consumers and suppliers - and hence, currently, the only way possible to develop competition in the wholesale gas market, in Greece. Quantities sold through DEPA's gas release program are very low in the present moment. There are many other importers of Gas in Greece the last two years, mainly taking advantage of the low LNG prices.
- Natural Gas release (sale) program by the Public Corporation DEPA S.A., improvements:
  Several necessary amendments were made on the gas release (sale) program of DEPA S.A. The authorities (the Ministry and RAE) completed the review of the gas release (sale) program by the Public Corporation of Natural Gas (DEPA S.A.), improving conditions of access for alternative suppliers and substantially increasing the quantities available. A written proposal by DEPA with revised commitments omnibus bill, i.e. improved access conditions and increased quantities up to 20% in 2020, was sent to the Hellenic Competition Commission (HCC) and was endorsed by HCC in the year 2016. In 2017, the quantities put on sale in the gas release program were 16%. However, if the quantities being auctioned rose, the actual amount of gas brought through this procedure in 2019 & 2020 is still extremely low.

4) Wholesale

Access to the wholesale market

Non-compulsory for alternative Suppliers but Compulsory for the production sector of Incumbent Supplier	Compulsory	Compulsory- Real Time
NOME Market (up to Oct. 2019)	**DAM**	**Balancing and Settlement**
• NOME Application with the MO	• DAM Application with the MO	• Application with the TSO
• Assessment by MO and RAE	• Assessment by MO and RAE	• Assessment by TSO and RAE
• Confirmation and inclusion in the NOME Register	• Confirmation and inclusion in the DAM Register	• Confirmation and inclusion in the TSO Register
• NOME Contract with MO and payment of Guarantees	• DAM Contract with MO and payment of Guarantee	• Contract with TSO and payment Guarantees)
• Participation in NOME auctions (scheduled 4 times a year)	• Participation in DAM	
• CEREMP Registration (Remit) can be done directly or through the MO		

Future structure of the wholesale market

To become operational by Q3 2020.

- Energy Financial Products Market
- Gas Forward Products
- Day-Ahead Market
- Gas Day-Ahead Market
- Intra-Day Market

Already operational since March 2020 – financial settlement only

Hellenic Energy Exchange

Details for Day-ahead and Intra- Day market are defined in Rulebook of RAE's Decision 1116/2018.
For the gas platform a feasibility study is underway.

It should be operational by Q3 2020

Balancing Market

- Application with the TSO
- Assessment by TSO
- Confirmation and inclusion in the TSO Register
- Contract with TSO and payment Guarantees)

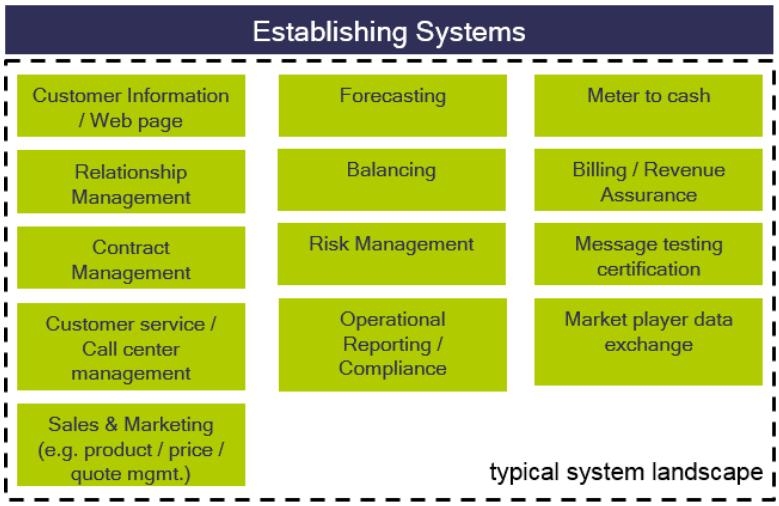
A number of details concerning access (e.g. BSP and BRP contracts are defined in Rulebook of RAE's Decision 1090/2018).

Further comments

- Greece has not yet applied the target model in full. Only a Day Ahead Market, in the form of a mandatory pool, is currently operational.

- A balancing market was planned to be operational on 6th of June 2019 (RAE's Decision 1116/2018), but it has not been activated yet.
- The remaining markets will become gradually operational by Q3 2020. In parallel to DAM, auctions in the form of forward products are available since 2016 (first auction 25.10.2016).
- There is no reference at all to the coupling with neighbors. GR will enter the pau-EU DA coupling in 2020 for GR-IT and beginning 2021 for BG-GR. Also, on intraday, GR should join the pan EU continuous trading through XBID Q1 2021.
- In principle energy procurement can be outsourced (i.e. a retail supplier does not need necessarily to be active in the wholesale market). Yet, suppliers can also act as traders i.e. be active only in the wholesale market and solely in imports/exports.

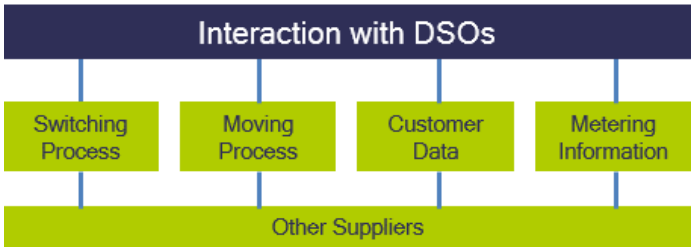
5) System landscape



Further comments

- Data exchange between TSOs, MO and Shippers is done using a custom-made web-based interface.

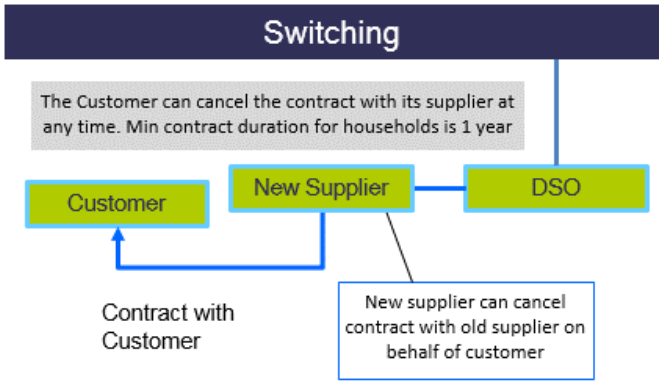
6) Supplier interaction with the DSO



Further comments

- There is only one electricity DSO.
- For gas, the suppliers need to sign an agreement with the DSO of the geographical area that the supplier is active in. Separate agreements are required (one with each DSO if the suppler is active in more than one area).
- Information exchange between suppliers and the electricity DSO is done through a the so called “Thalis” purposely designed platform.
- Specific regulations regarding actions such connection/disconnection to the network, switching (i.e. number in days for connection/disconnection etc.) are specified in Electricity and Gas Supply Codes.
- The new supplier undertakes to carry all actions related to customer switching
- The DSO is responsible for metering.

7) Customer switching & moving



Further comments

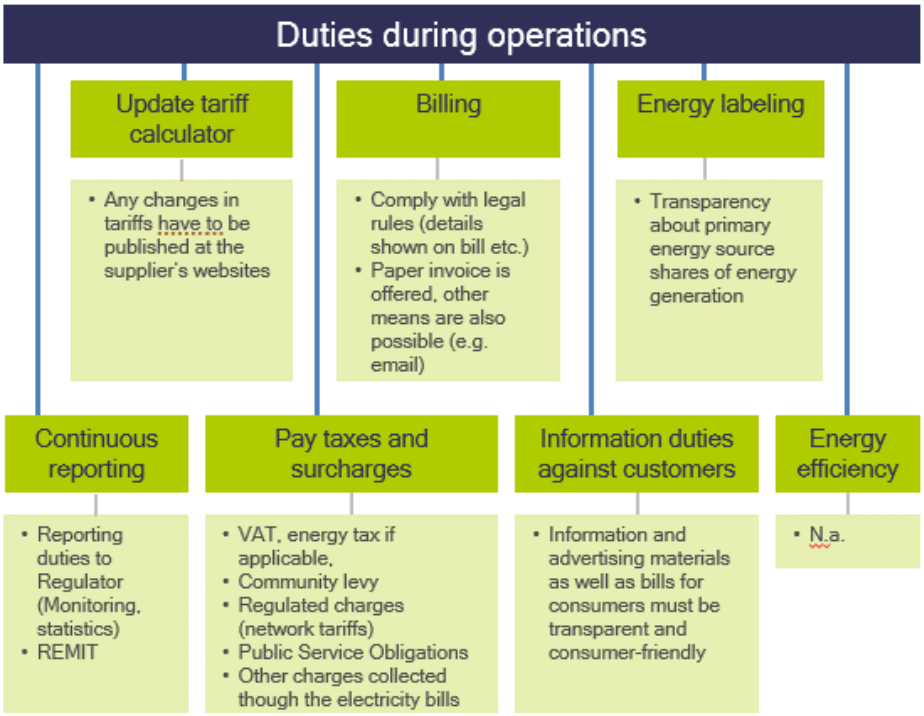
Switching process

- Switching processes are standardized; they also include deadlines for each business process and market players
- It is possible to apply for a change in supplier any day of week including weekends.
- Special clauses: some suppliers offer discounts on power or gas and vice versa if the buyer acquires both services.
- The duration of the supply contract is agreed between the buyer and the seller. There is no minimum duration prescribed in the Supply Code. In all cases the supplier needs to inform the client 1 month before the end of the contract.
- In principle, the buyer can cancel the contract any time. The Code provides that some special conditions that do not allow this "cancellation at any time" may exist.
- The provisions for supply switching are included in the electricity supply code (Government Gazette B 832/2013 (Articles 21, 39 and 42), amended by Government Gazette 1463/2016), for English here, gas: Gov Gazette B' 1969/01.06.2018).

Moving

- The procedure is described in Art. 43 of the Supply Code (electricity), Gov. Gazette B 832/09.04.2013 also available in English. The Supply Code has been amended to Gov. Gazette B' 1463/24.05.2016
- A Default Supplier is a supplier obliged to supply Customers who are not represented by a Supplier, by fault of their former Supplier, which has led to the former Supplier's deletion from the Power Market Participants' Register.
- RAE appointed the incumbent PPC S.A. as the Default Supplier for a period of 1 year (RAE's Decision 595/2019).
- The appointment of the Default supplier is in principle done through a market-based procedure, however no interest from the market was received, RAE nominated the incumbent (supplier with largest share provided) by law to serve as the default supplier in case of no interest received in the market process.
- The service is provided with a surcharge of 10% upon the respective PPC tariffs (competitive charge) of Low Voltage & Medium Voltage customers, and 5% upon the cost of the wholesale market for High Voltage customer (taking into account all the components of this cost), until 28.06.2020 (RAE's Decision 595/2019)..

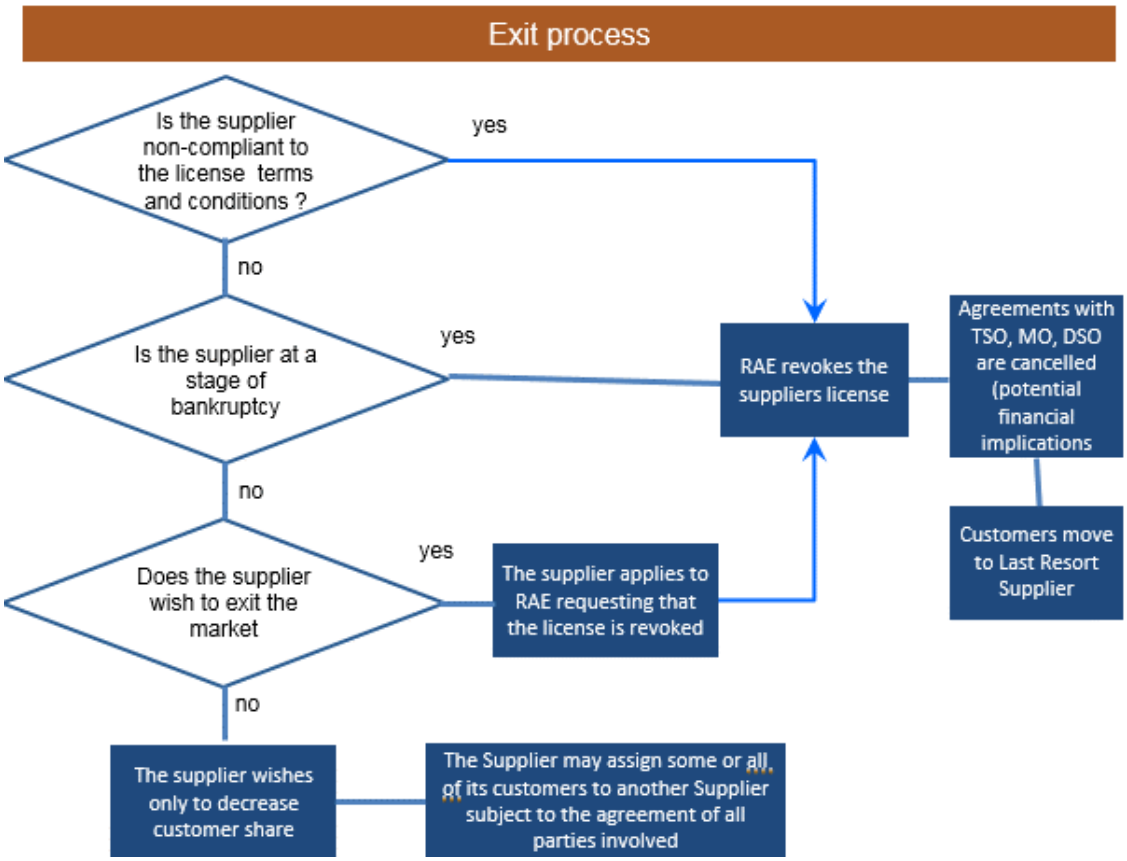
8) Operational obligations / duties



Further comments

- Tariff information and all actions of the Supplier are upon continuous monitoring and scrutiny of the Regulator. The procedure and rights of the Regulator to request information are described in the Supply Codes for electricity and Gas
- The bill must contain certain pieces of information (e.g. system charges, taxes and surcharges, and energy costs must be stated separately). The type of information included in the bill is also described in the Supply Codes.
- Combined billing (energy + grid charges) is compulsory.
- Charges for each service are reported separately. All additional taxes and levies are also reported separately.
- In principle, customers have a right to receive a paper or electronic invoice.

9) Market exit



Further comments

- The supplier may leave the market on its own request, at the case of bankruptcy or if RAE revokes the license (in case of non-compliance to the license terms and conditions)
- There are no fines/penalties regarding the revocation of the supply license per se but there may be outstanding obligations and fines towards the TSO, DSOs and MOs.

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