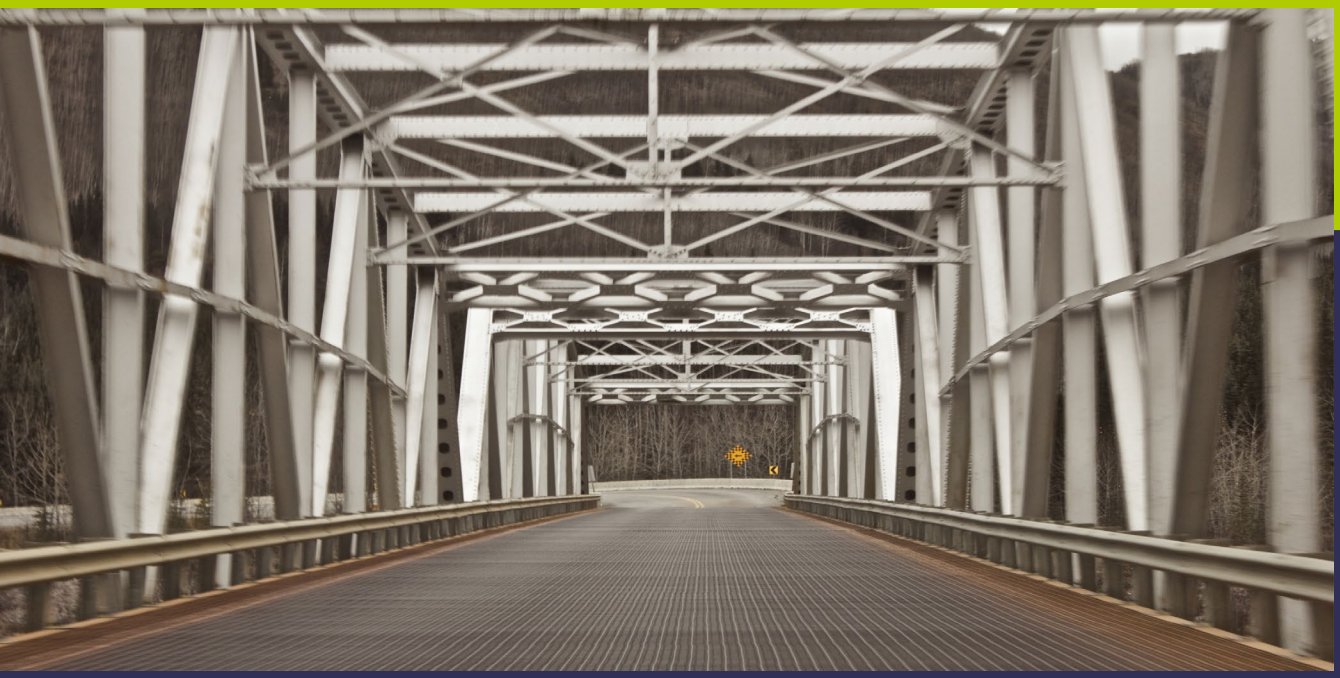
European Commission

EUROPEAN BARRIERS IN RETAIL ENERGY MARKETS



SPAIN
Country Handbook

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Energy

EUROPEAN BARRIERS IN RETAIL ENERGY MARKETS PROJECT: Spain Country Handbook

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

SUMMARY

Project Outline

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

The Context

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

Objective

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

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

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

Competitor Perspective

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

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

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

Scope & Scale of Research

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

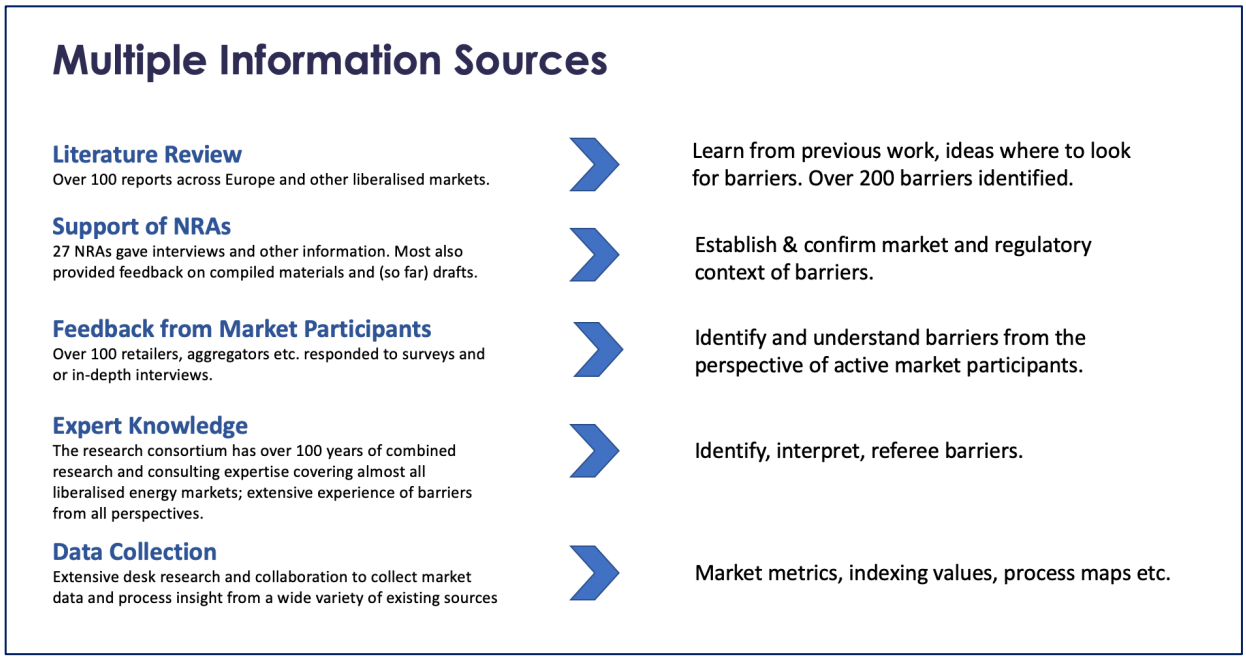
The project focuses on retail (supply), including also demand aggregation services, other additional offerings and new model retail, especially relating to the household segment customers (in some markets households and smaller SMEs may be difficult to distinguish). The project additionally concentrates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

Sources of Information

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

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

Figure 1 – Multiple Information Sources



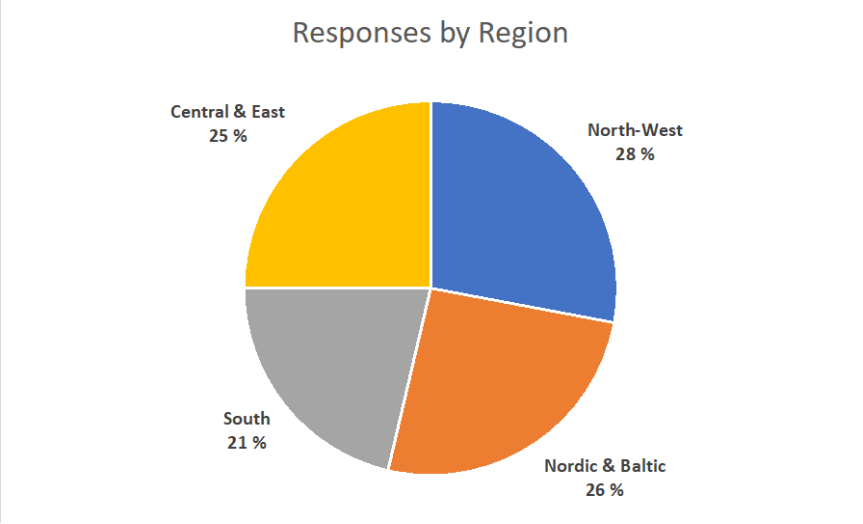
Surveys & Interviews

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

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

The Competitor Sample

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



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

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

Confidentiality

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

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

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

Deliverables

The project has three key deliverables:

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

The Barrier Index and Ranking

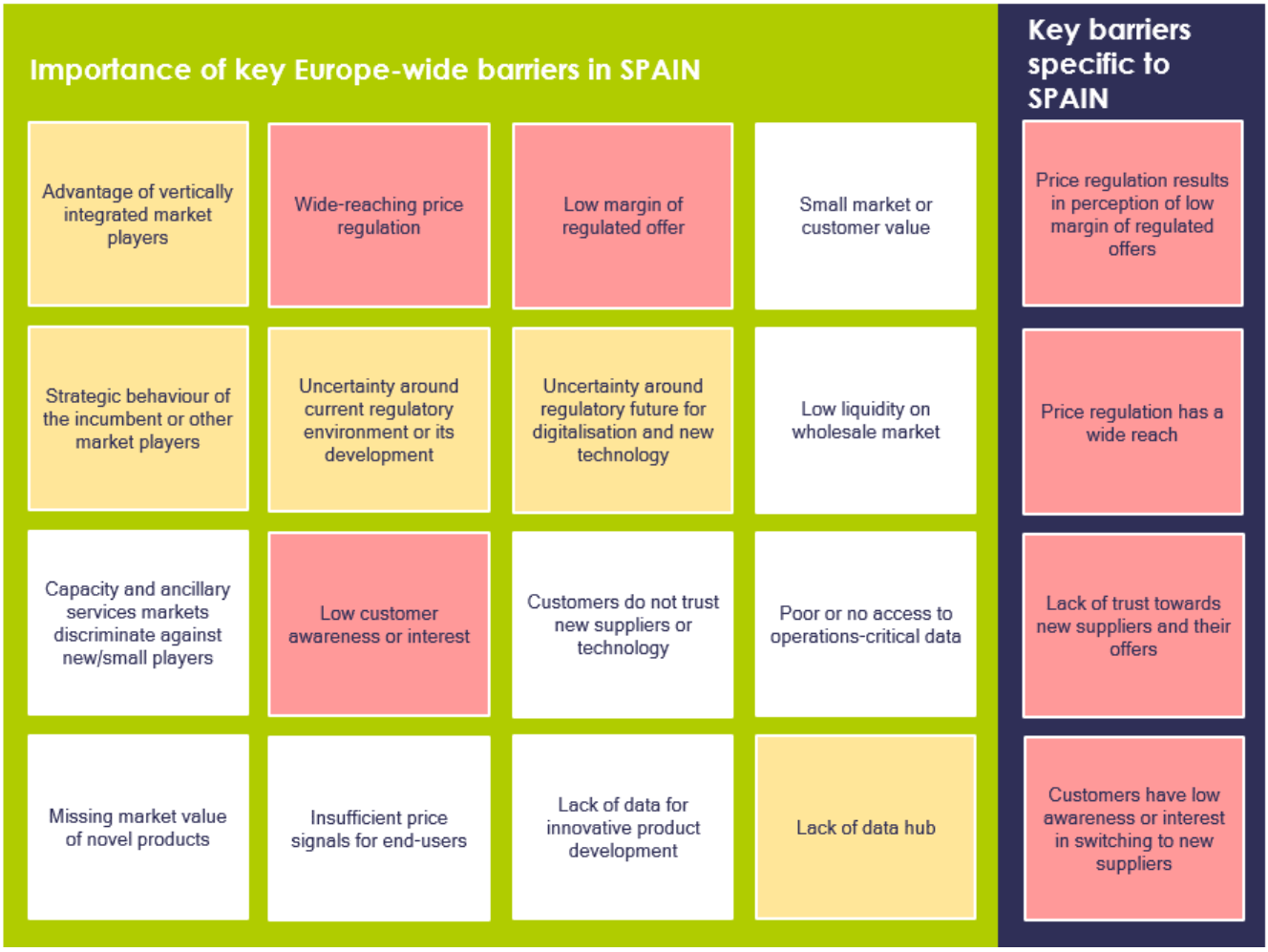
The purpose of the 'European Retail Energy Market Barriers Index' is to enable a degree of comparability between the barriers' context in each of the markets. It is based on metrics that can be collected for all markets, metrics for which available data currently exists. As such it provides a simple,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

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

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

Key barriers in the Spanish market

The following figure highlights the key barriers identified in the Spanish 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

The Spanish market is among the markets with the highest number of suppliers registered. With a pro-active regulator that seeks to welcome new players and novel business models. However, the project identified few issues that present significant barriers to the establishment and growth of new entrants and novel players. 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.

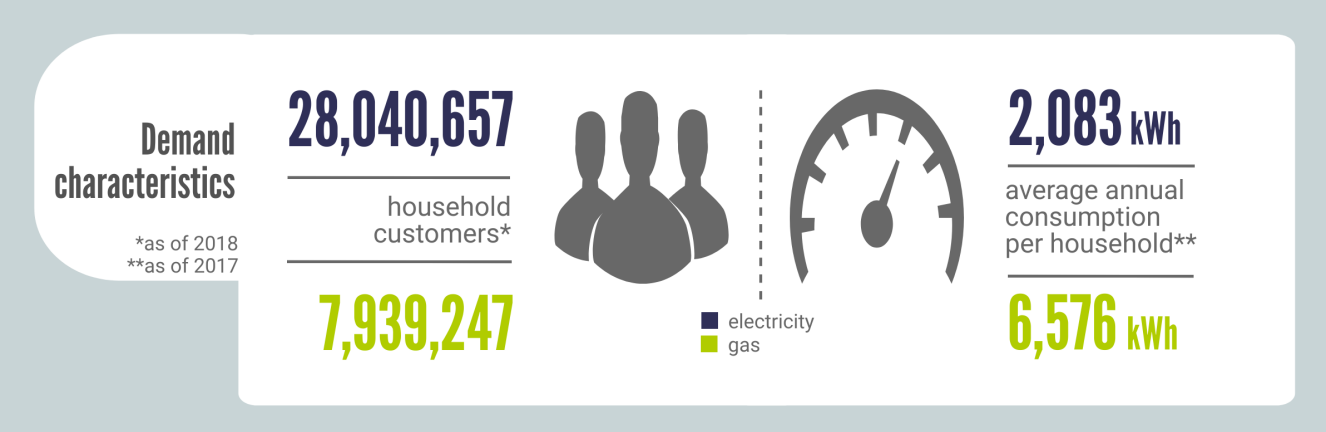
- Gradually decrease the contracted capacity for eligibility threshold and gradually restrict regulated prices to vulnerable customers thriving competition in the domestic segment. In any case, if there is no will to reduce the threshold, a solution can be to increase the mark up of regulated tariffs and use these proceeded funds for system funding and incentivize consumers to leave the regulated market due to its higher costs. Providing in this way, the purpose of protecting customers and ensuring that reference suppliers are not making unfair profits from regulated tariffs.
- Regarding market inequality, in Spain, functional unbundling has been implemented, with DSOs consequential re-branding. Yet, suppliers still report that the effects of such an action have not been perceived in the market. Close monitoring by the Regulator with accessory actions aimed at studying the effectiveness of unbundling are recommended.
- In a well-functioning energy market, there is a dynamic environment for innovation of energy services and products, to scope competition and with high benefits for the final customers. The availability of smart metering equipment and systems which allow time-of-use is well developed in the case of Spain, but as of today it is not used at its maximum potential. On top of this, the ability of demand and storage to opt into balancing services is emerging in the market. Due to the incipient status of the forthcoming regulation governing these services, we cannot conclude the effectiveness of the scheme, but this development has been deeply awaited by new entrants.
- On customer inertia, awareness campaigns are promoted in the Spanish market, although their effectiveness is yet to be confirmed. Also, the CNMC has published a list of recommendations to suppliers and customers on how to select and make a new supplying contract. With the end of stimulating competition, regulators should raise supplier company reliability and support their entrance. Recommended measures that would increase customer awareness are the enhancing monitoring activity on suppliers precontractual and information provision activity, customers associations to better monitor suppliers' behaviour, and act against unfair contractual clauses, enhancing recommendations to suppliers and customers on how to select and make a new contract, strengthening all the activities aimed at enhancing customer awareness in the domestic sector. Even though we acknowledge the relevance of these aspects for new entrants, it is worth highlighting that some of these issues are common to most economic activities and it is a matter of time to overcome these hurdles. In this aspect, a good example is the telecom sector where new operators have been able to penetrate a market which at the begging competitors were struggling to enter.

MARKET OVERVIEW

Introduction

Number of customers	Electricity	Gas
Household	28.7 million	7.8 million
SMEs	564 thousand	
Industrial	15 thousand	3.9 thousand

In 2019, Spanish electricity demand dropped to 264.8 TWh level, a -1.5% if compared with 2018 level. The first decrease after years of having an electricity demand with a positive trend which begun in 2015. The residential sector is composed by 28.7 million of households with 2,083 kWh of average annual consumption per household (2017 data). While the Spanish gas system, has 7.9 million of end users in the residential sector, as of 2018, with 6,576 kWh of average annual consumption (2017 data). In 2015 gas demand increased for the first time since 2008, and in 2017 it increased for the third consecutive year since 2008, reaching a level of 347,918 GWh.



Background

The first step towards liberalization of the electricity sector in Spain, was the Protocol negotiated by the Ministry of Industry and the major electric utilities in Spain before 1997.

Since 1998, electricity supply has been structured into two regimes:

- Free market supply to eligible consumers (all consumers became eligible on 1 January 2003) carried out by free suppliers using freely agreed conditions.
- Regulated supply to specific consumers carried out by reference suppliers (COR/CUR) under tariffs, terms and conditions set out in regulations approved by the central government.

The opening of the Spanish market has led to significant new commercial activity and has gathered around a thousand of agents in the Iberian spot market, that nowadays is defined as a very liquid market.

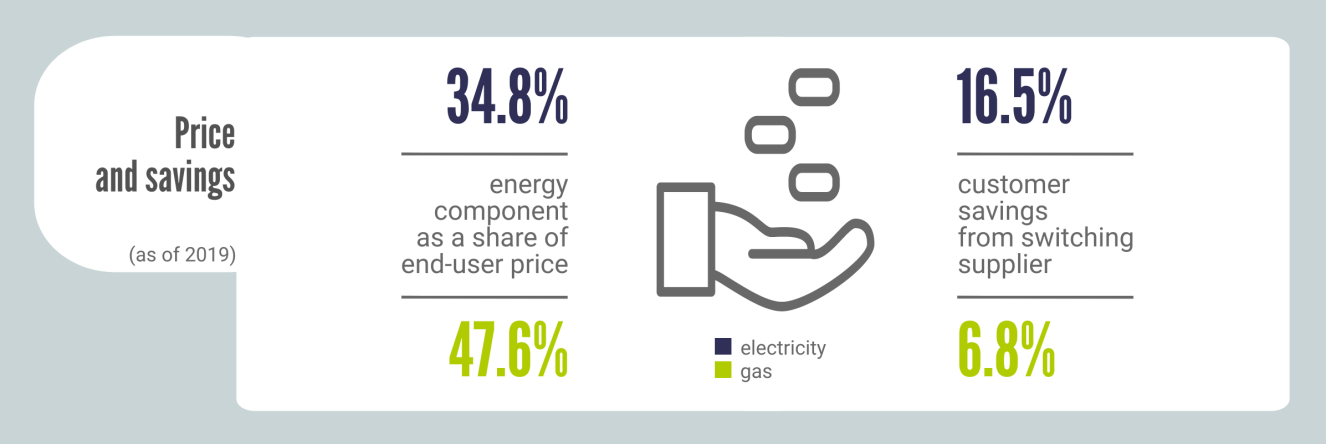
In Spain, the Ministry of Ecological Transition (MITECO), was responsible until 2019 for the economic regulation of the energy markets and the planning with regards to electricity and gas activities.

The energy sector is overseen by the Comisión Nacional de Mercados y Competencia (CNMC), the energy market regulator is entitled to establish tariffs and regulations for the returns of the regulated activities. As of 2020, and following European Directives, the regulator is now in charge of setting network tariffs ("*peajes*"), a role that was previously in the hands of the Ministry.

Many independent suppliers have established themselves after market liberalization. Since 2009, the number of suppliers and products offered have increased dynamically. As of 31 December 2018, 394 electricity suppliers and 180 gas suppliers are registered by CNMC in their list (many of them are not active in the whole Spanish territory). Given the characteristics of the Spanish electricity sector, out of the 394 registered suppliers, some belong to former regional DSOs that had less than 100,000 connected customers and are under account unbundling1. However, some of the suppliers resulting from the unbundling of regional DSO are grouped under a single company that are serving across Spain and acting as COR in relevant regions (eg CHC energía). Thus, the number of suppliers active in the market is relevant, although, given the total share of new entrants, only a few companies have been able to reach significant shares of the domestic market, primarily due to the lack of attractiveness of this segment. Recently, according to CEER, Spain is the country that has experienced the highest increase in the number of nationwide suppliers. One of the reasons for this development might be the recent facilitation of licensing procedures[2].

In 2019, 18.2% was the share of network tariffs in the household electricity bill, 46.7% the so called charges (other regulated costs, such as the cost of RES and cogeneration support, recovery of tariff deficit and compensation of the extra costs of supplying electricity in the islands) as well as taxes and VAT, with the energy component representing on average almost the 35% of the tariff. While the energy component in the gas end-customers' tariff was around 47%[3]. On average, in 2019, the estimated consumer savings from switching supplier was 16.5% for electricity and 6.8% for gas.

[1] Informe de supervision del mercado minorista de electricidad – 2018.
[2] CEER 2018 Report on Performance of EU Retail Markets
[3] HEPI by Energie-Control Austria, MEKH and VaasaETT Ltd.



Market structure

The Spanish electricity sector is organized around a set of regulated and unregulated activities ranging from unregulated power supply and commercialization activities to fully regulated operations through the electricity network.

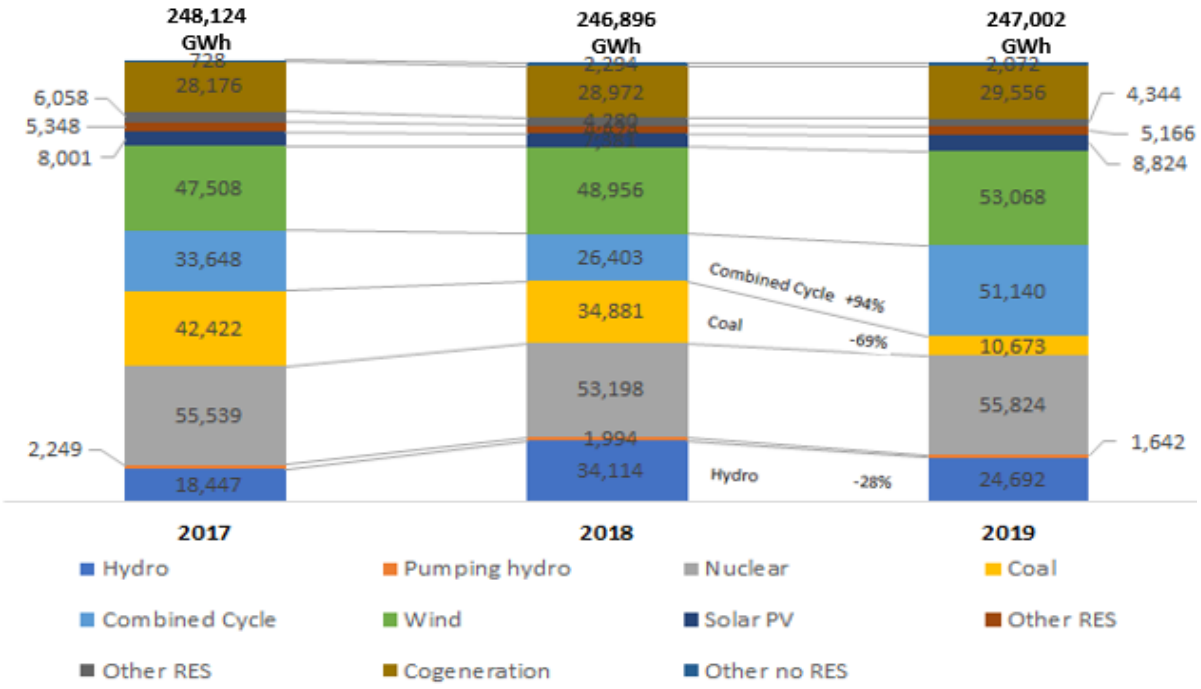
Since 2012, Red Eléctrica de España (REE) is the electricity TSO, running the ancillary and balancing market in the country, while ENAGAS is the gas TSO. Both TSOs ensure the energy system integrity and security.

Today, more than 300 DSOs are active in the electricity Spanish sector and around 10 in the natural gas sector. In the electricity sector, five large incumbent DSOs cover 86% of the network under management, while the vast majority of the remaining have less than 100.000 customers each (it is worth noting that as of today there are several suppliers with over 100,000 and increasing notably their customer base). According to the Internal Electricity Market Directive, DSOs are permitted to belong to a group that undertakes other activities including power generation, electricity recharging services (for electric vehicles) and selling electricity provided that a separate company performs the regulated activities (the so-called legal unbundling). This is especially relevant when assessing the number of suppliers operating in its former distribution area. In 2019, incumbent companies were forced to establish fully separated names for each of the brands, so as not to induce confusion on customers. Nonetheless, in the case of Spain and given the historic lack of awareness among customers, this measure still needs to prove its real effectiveness towards enhancing competition in the market.

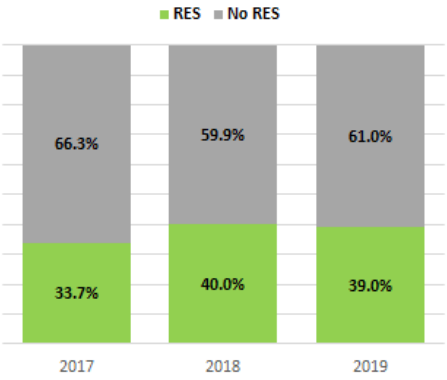
In the natural gas sector, most of the DSO unbundling requirements were introduced in the Spanish legislation in 2007, by the act 12/2007. DSOs can belong to a group that undertakes supply activities, provided that a legal unbundled company performs the regulated activities.

In addition, functional unbundling for energy DSOs is required. This includes management separation and measures relating to effective decision-making rights, in accordance with the 2003 and 2009 EU Directives.

Electricity generated in the Spanish peninsular system by technology between 2017 and 2019 (GWh).[4]



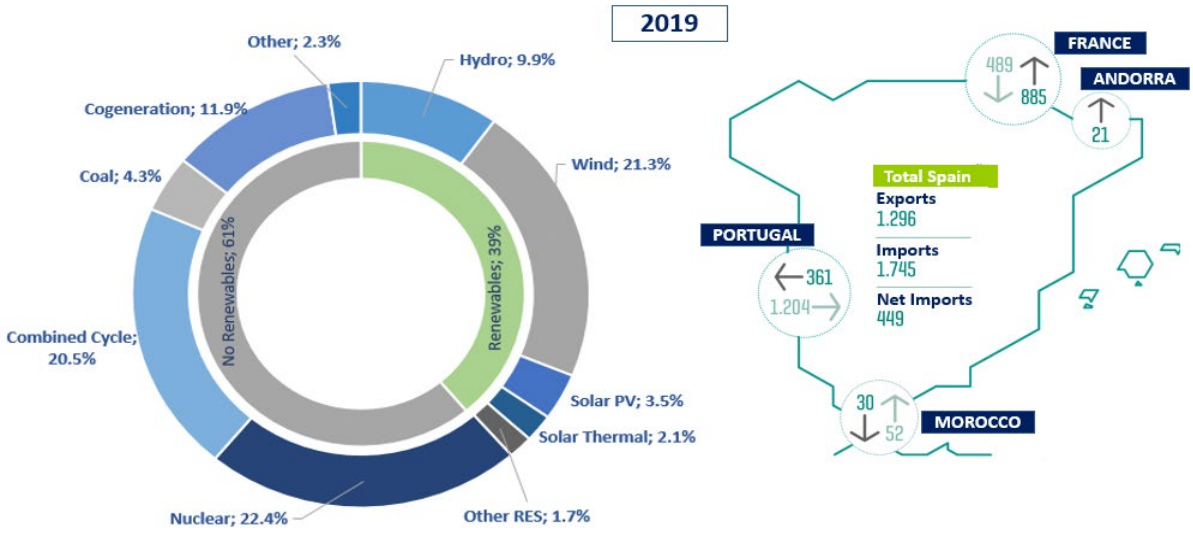
Electricity generation in the Spanish peninsular system, increased by 0.04% in 2019, standing at 247 GWh. The most significant variations with respect to the previous year were recorded by hydroelectric generation, which dropped by -28%, and coal-fired generation by -69%, while combined cycle increased significantly by +94%. Regarding the balance of generation by type of energy, unlike in 2017, renewable energy recovered their share in the peninsular electricity generation mix to 39% in 2019, compared to 33.7% in 2017, as a result of increased RES generation of 46% over the total generation. The share of non-renewable energies decreased to 61% in 2019 (66.3% in 2017).



The Spanish electricity market was integrated with the Portuguese electricity market in 2007. There is a relatively low degree of concentration in the Spanish electricity generation market. The main companies producing electricity in the Iberian integrated system are Endesa, Iberdrola and EDP, generating roughly the 60%of the electricity generated in the country.

2019 electricity generated in the Spanish peninsular system by technology and net imports (GWh)

[4] REE data and statistics, 2019.



Regarding wholesale market activity, the Spanish power and gas markets are largely developed, with most of the electricity and gas traded in bilateral over the counter (OTC) transactions or through the organized market managed by Operador del Mercado Ibérico (OMI Group).

In 2018, the electricity traded in the Iberian market was 276 TWh (including day-ahead, intraday and continuous intraday market) down from the 281 TWh level reached in 2017, with more than 1,000 registered agents across the market platforms.

MibGas is the wholesale natural gas trading platform, which traded 24 TWh in 2018, almost doubling the volumes traded in 2017 (13 TWh). With 82 registered agents across the market platforms.

- **Natural gas volume traded in 2018:**
  - MIBGAS: 24 TWh
  - OTC: 498 TWh (51% traded PVB virtual hub)
- **Number of suppliers active in the gas OTC:** 92
- **Number of suppliers active in the MIBGAS:** 42 (82 regist.)

The Spanish electricity system is interconnected with France, Andorra, Portugal and Morocco. In 2019 the balance of international physical exchange was of 449 GWh of net electricity imports. A relatively small share of what is the total capacity of the country and of what is consumed within it.

The Spanish gas system is connected by gas pipeline to France, Portugal, Morocco and Algeria, and has 7 active LNG regasification facilities (with a total import capacity of 44 MTPA/year, the largest in Europe)[5], importing gas from around 10 countries. In 2018, 392 TWh of gas were imported in Spain, 57% of which by pipeline and 43% by GNL, and around 35 TWh of gas were exported by pipeline or reexported by GNL. In 2018, Naturgy is the major importing company with a share of 43% and Algeria is main country supplying about the 51% of the total natural gas imports.

With regard to the retail market, during 2018, the electricity market was made up of 29.4 million supply points, of which 11.3 million (38.3%) were covered by price regulation (PVPC) – supplied by the so called reference suppliers

[5] International Gas Union (2019) WORLD LNG REPORT

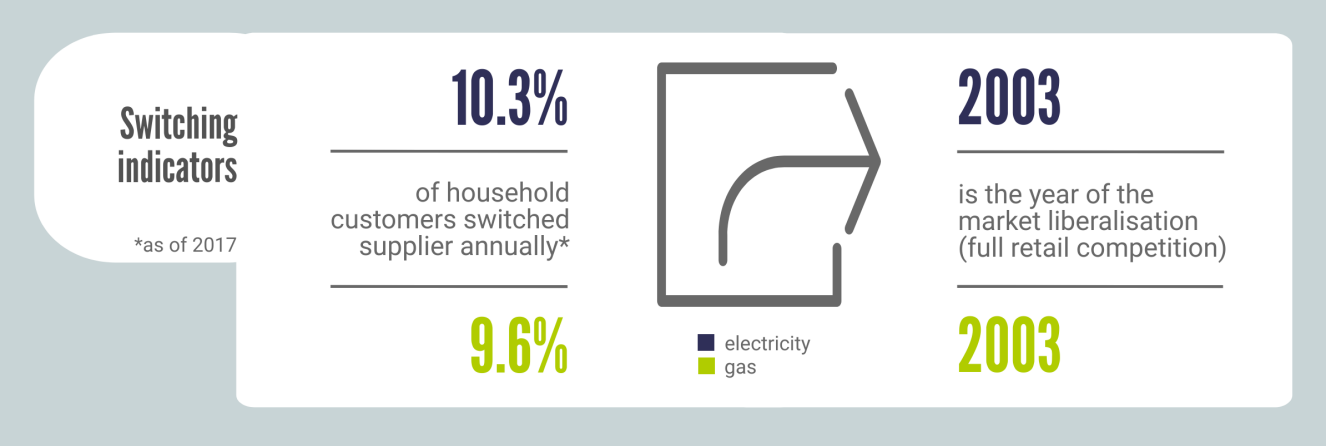
(comercializadoras de referencia, COR), while the rest, 18.1 million (61.7%), were supplied by suppliers in the free market (most of them, over 16 Million by the free market companies of the incumbent companies). However, all customers supplied below 10kW (<10kW, representing the 95% of the market), are eligible and have the right to be supplied under PVPC regulated prices.

In the last three years, the number of customers in the regulated tariff has been progressively reduced by 1.7 million, going down from almost 13 million registered on December 2015, representing a reduction of 13.1%. During the same period, the number of customers in the free market has increased by more than 2.1 million, going from just over 16 million points in December 2015 to 18.1 million points three years later, in 2018, representing a growth of 13%. Of these new supply points in the free market, the five biggest suppliers have contracted more than 1.2 million customers (including Endesa, with more than 0.6 million), while independent suppliers have contracted more than 0.9 million. The five incumbent companies still serve over 90% of the domestic segment.
The natural gas market was composed of about 7.9 million of supply points, of which around 1.6 million were supplied through a last resort supplier or CUR (20.2%) while the rest, over 6.3 million were supplied by suppliers in the free market (79.8%).

In the last three years, the number of points provided by the CURs has been reduced progressively, from the 1.7 million registered on December 2015 to the 1.6 million registered three years later at the end of 2018.

During the same period, the number of customers in the free gas market has increased by 0.4 million (from 5.9 million in December 31, 2015 to just over 6.3 million, three years later), which meant an increase of 6.8%. These new customers have been contracted mainly by the biggest 5 suppliers.

The number of suppliers registered at CNMC was 394 in December 2018 and during 2017, 0.9 million consumers moved from the last resort supply to the free market. In 2017, the switching rate slightly decreased with respect to 2016 to a value 10.8% (10.3% in the residential market).



With respect to total changes supplier of natural gas, in 2017 was 756.316 changes, equivalent to 9,6% of gas customers in Spain, moderately lower than the figure of 2016 (955.491 changes).

Political and regulatory orientation

Spain's electricity sector policies and legal regime are primarily governed by the European Union through Directive 2009/72/EC concerning common rules for the internal market in electricity. The main provisions of the Directive focused on ensuring the security and safe supply of energy at the lowest possible cost, boosting energy efficiency, ensuring the functioning of the energy market, and promoting the interconnection of energy networks. In this regards, Law 24/2013, on the Electricity Sector (LSE), aims to guarantee the supply of electricity and adapt it to the needs of consumers in terms of security, quality, efficiency, objectivity and transparency, and supplying it at the lowest cost (in line with EU provisions). The LSE also establishes the principle of economic sustainability of the system, meaning that all costs of the electricity system must be covered by the income the system generates.

Among the key provisions affecting the supply activities, the following may be highlighted:

- Third-party access to the transmission and distribution network is guaranteed, with the technical and economic conditions set forth in the LSE and its implementing regulations.
- Supply is also a liberalized activity and customers are free to choose their supplier. Since July 2009, individual entities have no longer been allowed to bundle distribution and supply. The supplier is the entity with a commercial relationship with the final customer and pays on behalf of consumers the access tariffs to use the transmission or distribution network.

Supplying activities in Spain are nowadays not subject to a prior authorization regime but to a prior notification to the Ministry. These notifications must include a responsibility pledge stating that the supplier fulfils all the requirements to carry out the activity (including unbundling obligations, technical capacity and fulfilment of wholesale market rules).

Spain distinguishes between power sales on the free and regulated markets. On the free market, customers can choose their supplier and both parties freely agree the price of the electricity. However, in the domestic segment, most of the consumers can qualify for the regulated market, which offers small consumer prices (PVPC). This regulated price is offered by the reference supplier (Comercializadores de Referencia, COR). In both markets, consumers pay the corresponding access tariffs for using the grid. These include the transmission and distribution network tariffs and the so called charges, which cover other costs (mainly the support to renewable production and cogeneration, the recovery of the accumulated tariff deficit and the compensation for the extra-cost of supplying electricity in the non-mainland territories of Canary Islands, Balearic Islands, Ceuta and Melilla), as well as the corresponding taxes. Thus, the differences among the offers of different suppliers lie in the price paid for the electricity itself.

There have been recent developments on the regulation governing self-consumption, regarding participation of demand in the balancing services and flexibilization of access tariffs to enhance efficiency.

To some extent, there is some level of regulatory uncertainty in the Spanish power and gas markets, which has hindered international investments in the sector and the development of new tools in the market. As a late example, self-consumption was held in a legal limbo for four years due to the lack of agreement between political parties, the IAE which is a tax on economic activities which has been in the process of being adjusted for some time (particularly to re-define the criteria for collecting this amount) and the inherited deficit of the electricity system which will now be explained . The burden caused by the development of RES under the Feed in tariff scheme, led to the so-called tariff deficit of the electricity system, since these costs were not passed-through to the charges included in the access tariffs and these were insufficient to cover all the regulated costs. The accumulated tariff deficit reached an unmanageable volume by 2012, and the government introduced a wide range of regulatory and tax measures to control it (including fiscal measures and review of the remuneration of transmission and distribution as well as a modification of the support schemes for RES and cogeneration). The resulting regulatory adjustments to ensure sustainability of the power sector temporarily diminished the interest in the sector and created some uncertainty since entrants had the perception of potential changes on the non-energy related components of the tariff. However, as shown in the recent business transaction environment (including Mergers & Acquisitions), the appetite for the Spanish electricity system is soaring again.

Regulatory market characteristics

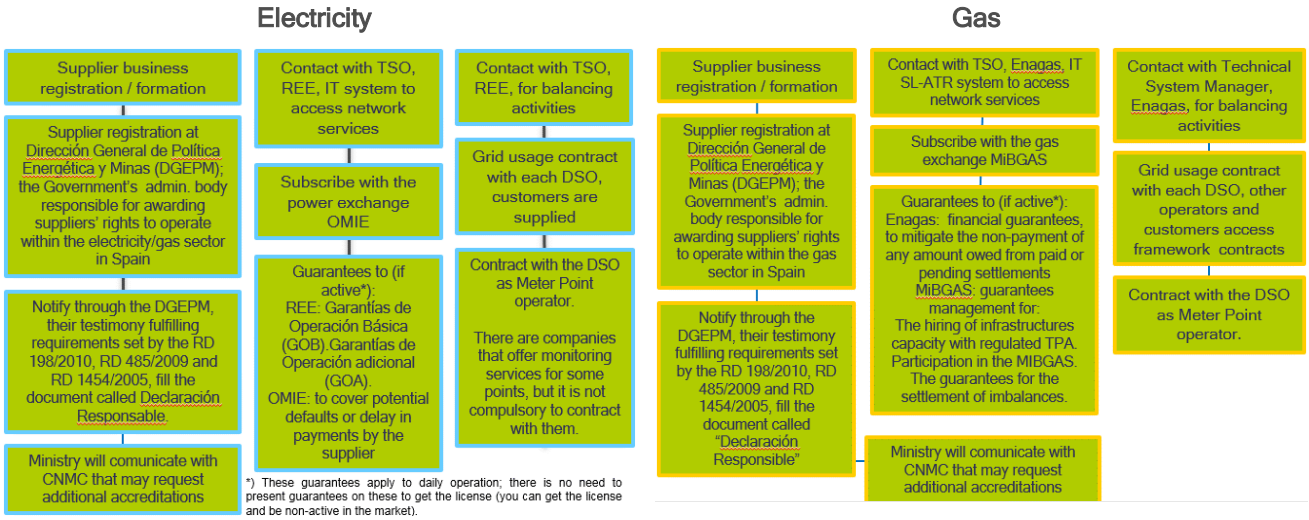
Price regulation

The Spanish price regulation regime so called “voluntary price for small consumers” (for electricity, known in Spanish as PVPC), which is offered by the so-called reference suppliers. These prices include the energy cost, the applicable access tariffs, (which include network tariffs and the so-called charges) and a commercial margin. A Royal Decree introduced a new methodology for calculating the commercial margin of PVPC and after 2016, the remuneration method recognizes the costs to carry out the supply activity made by an efficient and well-managed company. However, there have been numerous complaints that consider the commercial margin included in the tariff insufficient to cover all costs, making very difficult or impossible for suppliers to compete against the PVPC. The situation of regulated gas tariffs is very much aligned with the above. Further details are provided in the relevant sections.

To prevent the energy component of the regulated tariff to be set below cost, the new regime foresees an energy cost calculated on an ex-post basis, using the average price resulting in the spot electricity market during the period covered by the bill. In the case of consumers with an operative smart meter installed, since 1 October 2015, a real time consumption tariff following the spot price was applied. Smart meters deployment rate is nowadays of more than 99% of installed meters in the country. This outstanding roll out of smart meters sets the basis for further penetration of innovative business models and improving range of services to final customers, eventually enabling competitive advantage of new entrants in the market whose main differentiation leads on data mining and combined offers.

Supplier registration and contracts

The supplier business registration or formation starts with supplier registration at Dirección General de Política Energética y Minas (DGEPM), the Government's administrative body responsible for awarding suppliers' rights to operate within the electricity and gas sector in Spain. More details on licensing, registration and contracts required to enter and operate in the retail electricity and gas system are described in the following figure.



Regulatory orientation

In the past, there has been an increasing struggle between the market regulator (CNMC) and the Ministry. Despite European legislation clearly states that the regulator is the body responsible for establishing the regulated transmission and distribution network tariffs and the remuneration of regulated activities, several different Governments (from opposite political signs) have directly set the tariffs. This situation was resolved at the beginning of 2019, when a new Law gave the regulator CNMC authority on all the issues mandated by the European Directive. The CNMC approved its network tariff methodology at the beginning of 2020; later this year the Government is expected to approve its methodology to set the charges.

The Clean Energy Package takes an important step towards utilizing digital solutions for the clean energy transition and building a more flexible electricity system. Businesses in the energy industry are provided with a solid legal framework for an increasingly digitalized energy economy and possible new business opportunities. The practical application of the new rules will show where future amendments might be necessary to better adapt to the energy industry's digital realities. Given the rapid development of technology, the digitalization of the energy sector will keep moving forward and regulators have to keep pace with the developments. In this regard, there is still a way to set the adequate transpositions to ensure the ability of suppliers to enlarge its services and reach deeper penetration in the market.

Even though there is not a clear pattern on how free market for customers' tariffs is beneficial for them, the availability of tools to enhance portfolio of services to be provided by suppliers may enable a more competitive

environment. According to the discussion with stakeholders and authorities, there is not a clear perception of the benefit from liberalized the electricity supply. However, it is the common understanding of market players entering the market that ability to offer bundle offers not only related to the electricity enhance competition. Similarly, the adaptation of charges and tariffs to almost real-time may provide more incentives to customers in being more active managing their consumption.

All in all, some regulatory amendments are pointed out across this handbook based on the feedback provided by market players, as well as our own expert opinion and best practices across EU countries.

Planned regulatory developments

In the gas market, the role of MibGas is forecasted to increase significantly in the following years, given the increased number of products and agents present in the market.

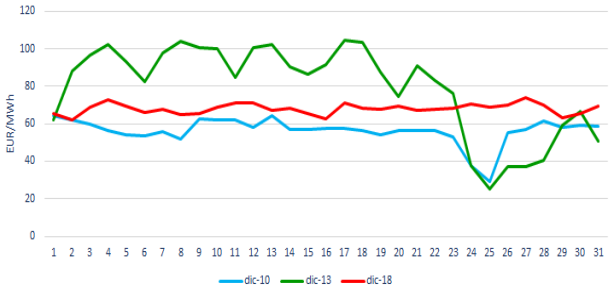
In the power segment, three main large developments are foreseen:

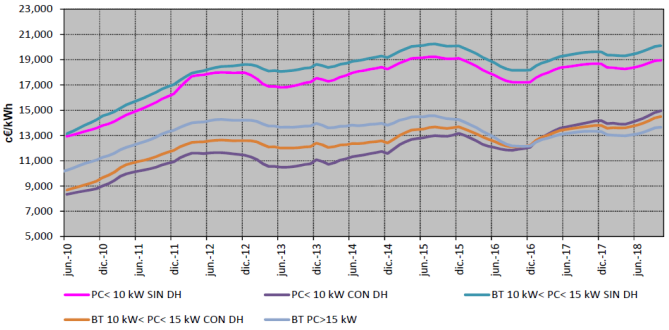
- the regulation of demand aggregators and demand side participation for small and mid-size consumers was lowered to 1 MW (larger consumers are already covered by the interruptible demand mechanism), which will introduce new roles for market representatives and will foster the appearance of discount pricing for customers potentially subject to curtailment.
- After the approval of new regulation on self-generation in 2019, in the beginning of 2020 net-billing will be fully applied. This system will allow small consumers to sell power to the market and to offset part of their bill. This figure (present in many other European countries) did not exist in Spain and small and large suppliers are already positioning themselves in a *hunt* for small prosumers, offering full packages (installation of PV panels, yearly maintenance contracts and supply/representation agreements).
- As mentioned before, a new network tariff methodology was approved by the CNMC in 2020 (expected to come into force in January 2021). This change affects all voltage levels and introduces changes in both, energy and power terms, as well as a new time-of-use network tariff. The methodology issued by the CNMC introduces a simplification of the different existing categories according the voltage level and defines time periods (from 3 to 6 for small SMEs), which will vary depending on the month, hour and day. As for domestic customers, all of them will be subject to a two-period tariff for the contracted capacity charge and a three-period tariff for the energy charge. This reform intends to foster the optimization of contracted power (since small customers will be allowed to contract two different kW levels) and induce peak shaving behavior. According to the CNMC, this measure should induce behavioral changes within end-users that will help to shift demand to valley hours and will help to increase the number of products present in the market. More details on the perception of this new tariff structure will be provided in the relevant sections.

Other market characteristics

Volatility of wholesale & retail prices

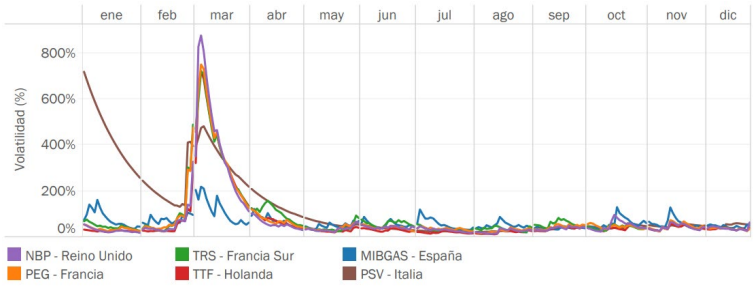
Recently the Spanish wholesale electricity market has achieved a stability that was not recorded in the past years. 2018 has been a year with relatively stable and non-volatile hourly spot prices. The following graphs shows the comparison of the OMIE average daily prices in December of years 2018, 2013 and 2010 and the average household price from 2010 to 2018. Nonetheless, after the foreseeable closure of a significant volume of thermal generation capacity in the future and the penetration from RES, volatility may thrive significantly.

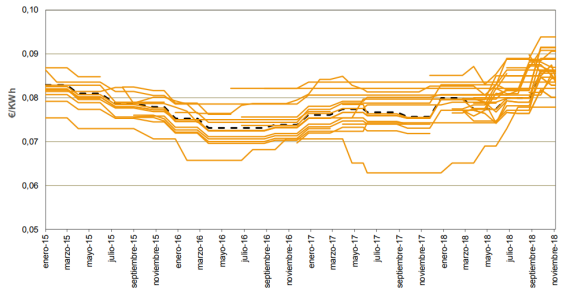




On the other hand, 2018 has been a year in which European natural gas markets registered annualized average volatility values between 63% and 112% for their daily products (D+1), highlighting MIBGAS as the least volatile market in 2018, with 63% annualized.

Regarding the retail natural gas market, in 2018, the variable term of the last resort tariff was revised four times, accumulating an increase of more than 17% in 2018, mainly influenced by the rise in Brent. In general terms, in the domestic market, gas supply offers are mostly linked to the evolution of the regulated last resort tariff (TUR); In line with the evolution of the TUR, in the free market there is a small drop in prices in the second quarter of 2018 and an upward trend in prices in the rest of the year.





Retail market and customer value

The CNMC identifies the household consumers category as the one with the highest gross margin but also with the highest costs to serve. Besides, the latest CNMC report on retail market monitoring indicates that suppliers operating in the free market and belonging to the ex-incumbent operators are those with biggest gross margins, but also those with highest cost to serve.

For new entrants in the Spanish retail market, the strategy has been to opt for a volume strategy versus a price strategy. Most new entrants prefer to focus on large consumers even having less margin due to the volume of the transactions. Balancing costs are lower together with less administrative burden. It is just an explanation of why some new entrants do not target domestic segment.

The CNMC methodology to compute the gross supplier margin is based on comparing the invoiced price (excluding regulated components) with the electricity procurement prices in the spot and forward market. This are purely indicative numbers and may suffer variations depending on procurement strategy and costs of the companies.

Suppliers gross margins as defined by CNMC in 2016 and 2017.

Year	2017		2016	
Procurement platform	Spot market	Forward market	Spot market	Forward market
Household	15 €/MWh	24 €/MWh	25 €/MWh	30 €/MWh
SMEs	2 €/MWh	10 €/MWh	13 €/MWh	18 €/MWh
Industrial	0.1 €/MWh	2 €/MWh	0.1 €/MWh	4 €/MWh

However, there is still a discussion about the new value of the regulated commercial margin, set in 3,113 €/kW/year (together with a variable margin of 0,000557 €/kWh, which, in average terms, represents an annual income of 20 €/year/customer), which is seen by suppliers as too low to recover their costs. As of today, only the incumbent suppliers (8 companies) offer the PVPC. As reported by the CNMC, other suppliers are also entitled to become reference suppliers but, so far, no independent supplier has requested to become a reference supplier. Although the PVPC methodology considers the update of this regulated income every three years, based on the accounting data of the suppliers, the regulated commercial margin has not been updated and transient prices have been applied since January 2019. Provided further competition is pursued, the methodology to set this margin shall be reviewed to allow competition from new entrants.

Context for aggregation/demand response

Spain has completed the installation of smart meters to roughly all electricity customers (99%), allowing the deployment of real time tariffs. According to the CNMC, more than 50% of Spanish customers have real time tariffs, which could facilitate demand response and aggregations services for customers.

Demand aggregation has recently been partially regulated in Spain. On December the 23rd, of 2019, the Spanish Official Gazette published the CNMC resolution establishing the conditions for the balancing and settlement of

electricity balancing services providers[6]. This regulation transposes the guidelines set out by Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing[7].

Under this new regulatory framework, demand and storage units, either single or aggregated, can operate as balancing services providers (BSPs) under the same conditions as generation units. However, some additional regulations must be approved before this starts to happen. Additionally, the introduction of independent aggregators will require further legal and regulatory developments. Starting from choosing the role of aggregators in the market among the several possible models. The most known are the integrated model, the broker model, the contractual model, the uncorrected model, the corrected model and the central settlement model, as recognized model by the USEF foundation in EU[8]. The viability of certain models in the EU countries, will be dependent on the flexibility product, asset type, customer segment and/or member state.

Current balancing services (in brackets the Spanish terminology) includes imbalance management (RR), primary regulation (FCR), secondary regulation (aFRR) and tertiary regulation (mFRR). Storage and demand units may offer all these balancing services through bids with a minimum capacity of 1 MW. For the participation on secondary regulation, only balancing zones with more than 200 MW are allowed.

Capacity thresholds may be reached through the aggregation of different facilities in one balancing unit. Each balancing unit shall correspond to one type of activity: generation, demand and storage. Balancing units shall be qualified and enabled by the TSO according to its technical and operational capacities. The TSO shall verify that each unit complies with the response and ramp profiles required for each balancing product. New regulation envisages an update of the TSO enabling test to accommodate new storage and demand units but, as an interim measure, methodology in use still apply.

As before, all balancing units shall offer its services under a balancing responsible party. By default, suppliers will be the responsible party of its supply points and direct wholesale customers shall be its own BRP.

This legislative update is an important milestone for the Spanish market since demand side response participation on the market is enlarged considerably.

The first flexibility and aggregation association in the Spanish power market has emerged as the sum of eleven different companies (Estabanell Energia, Bassols Energia, Factorenergía, olivoEnergy, Cuerva, Siemens, Endesa, Peusa, Agrienergía, Eleia and Ibil). The association is currently seeking further partners and has invited market participants on both sides to join the platform.

[6] https://www.boe.es/boe/dias/2019/12/23/pdfs/BOE-A-2019-18423.pdf
[7] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017R2195
[8] https://www.usef.energy/app/uploads/2016/12/Recommended-practices-for-DR-market-design.pdf

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

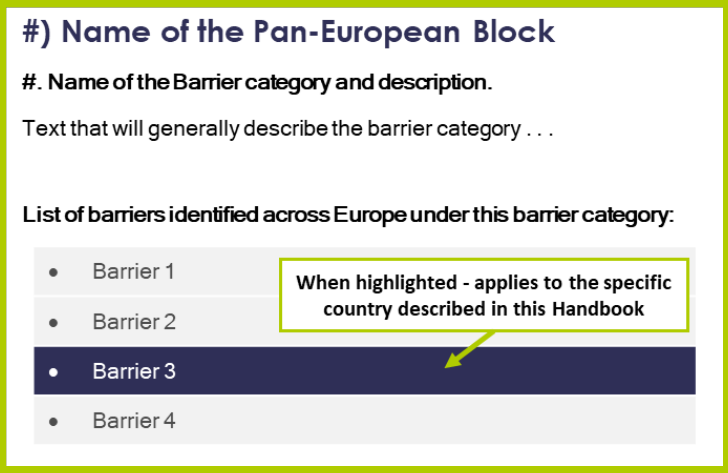
Description of the four-over-arching pan-European barrier blocks:

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

HOW TO READ AND INTERPRET THE FOLLOWING SECTIONS

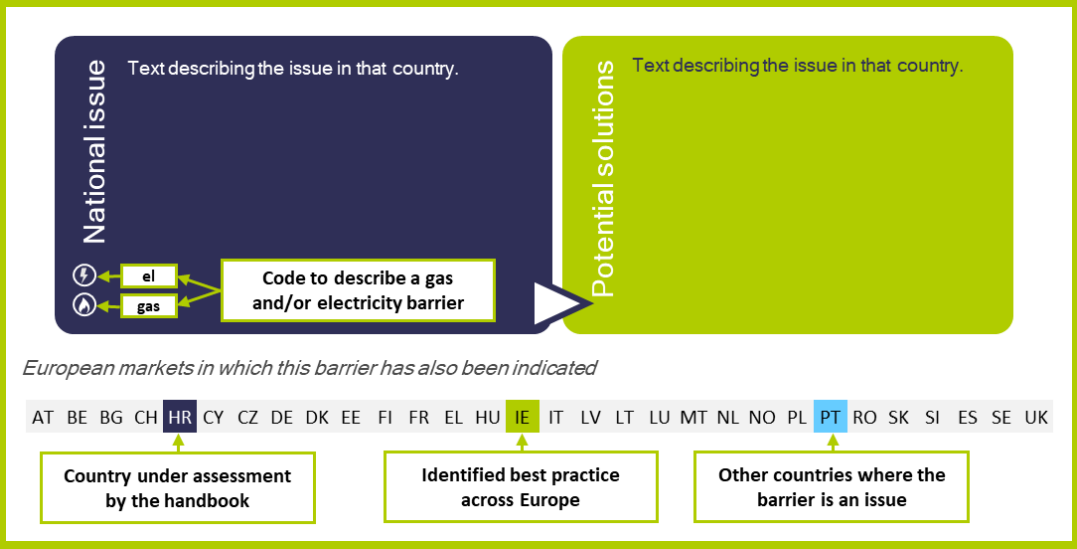
Each of the following four chapters explores one of the four pan-European blocks of barriers and report how each sub-category barrier apply to Spain. When a barrier applies to Spain, it will be highlighted in the table following a general description of the barrier itself, as shown in the example below:



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 Spain**.

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, Spanish'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[9], 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 Spain:

• 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 as those of the metering system. These requirements can pose a barrier for suppliers' operation on the retail market by raising their costs and distracting focus from their core business and might deter entry into the retail market by newcomers. Across Europe, the following specific barriers related to "burden(-sharing)" were detected by this study. Those highlighted in blue have been raised, indicated or identified as barriers in Spain:

• 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 market regulation evolve rapidly. Transposition of regulation into the national regulatory frameworks is not

[9] Monitoring Report on the Performance of European Retail Markets in 2018. CEER Report 4 November 2019.

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 Spain:

- 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 Spain:

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

1.1 Description of regulatory disincentivisation barriers in Spain: Price regulation

Price regulation discriminates against certain suppliers. In the research this barrier is perceived as an issue in Spain, although after reviewing the country regulation on this topic, we believe the reason behind this perception seems to be the structure of the regulated prices which is addressed later.

In general, the level of price regulation discrimination depends on the specific design of the country regulation. For instance, setting rigorous requirements to enable suppliers to offer regulated price to a specific customer segment, may per se exclude suppliers of a certain size or characteristic.

The Spanish regulatory framework does not directly discriminate against suppliers who want to become reference suppliers to supply customers under the PVPC price regulation regime. Therefore, every supplier that meets the requirements set out in the Royal Decree 216/2014, may apply to the Ministry to be designated as electricity reference supplier and be enabled to supply customers under the PVPC price regulation regime. In the gas sector, no requirement exists, neither new entrant suppliers have requested to become reference supplier. In the electricity sector there is a minimum requirement of 25,000 customers (during the last year of activity) and a minimum capital share of 500,000 euros. This might be seen as a barrier. However, as per the Regulator experience, no suppliers have asked to become electricity reference suppliers. Presumably because the commercial margin included in the tariff is insufficient to cover the costs of this activity.

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

National issue

In Spain, the competent ministry (MITECO) set specific rules to identify the so called “reference supplier” for the electricity sector. Despite some suppliers may find burdensome the requirements to become a reference supplier, currently there is no incentive as of today to supply in this segment.

Besides, as per the Regulator experience, no suppliers have asked to become electricity reference suppliers.

Potential solutions

Removing the customer number (25,000) required to become a "reference supplier" may allow more companies to enter the regulated segment of the market.

In any case, no strong argument on the real barrier out of these requirements can be supported, rather more important is to address the following issues under price regulation reported in the following paragraphs.

European markets in which this barrier has also been indicated.

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

High penetration of price regulation. In the research this barrier was identified as an issue in Spain.

In general, the part of the market eligible for regulated prices is not (or only partly) contestable for a new entrant. Consumers that have access to regulated services are extremely difficult to reach with competitive offers. If this market segment is big, i.e., price regulation has high penetration, only a small part of the market (generally non-household customers) might have the incentive to go for alternative supply options.

This issue has been identified in Spain, where the 95% of the customers is eligible to be supplied under PVPC price regulation. Regulated prices have a penetration of 21% regarding gas consumers, and 39,4% of electricity consumers . Although the access tariffs are equal for all customers (under either regulated or liberalized market) and the energy price implicit in the PVPC is a pass-through of the wholesale price, the commercial margin included in the PVPC is still too low to cover the full costs of this activity (see next item of this block). The CNMC has concerns towards further openness of the electricity tariffs and eventually the removal of the price regulation regime. According to the CNMC, actions towards this direction may endanger customer welfare. However, the current solution does not seem to enable a level playing field for new entrants (given the insufficient commercial margin included in the regulated tariff). Identified national issue and related potential solutions regarding the Spanish case are reported in the graphic below.

National issue

Whoever consumer with a contracted capacity up to 10kW is eligible to be supplied under PVPC regulated prices in Spain. Often including SMEs summing up to the 95% of the total market. This threshold is thus not selecting a customer category that is vulnerable and need protection. Holding back the market to an immature phase, where very few customers do care about comparing offers and choosing a supplier.

Moreover, the low margins of this tariff favor the high penetration of regulated offers.

Potential solutions

Gradually decrease the PVPC contracted capacity eligibility threshold and gradually restrict it to real vulnerable customers.

In the gas sector, the TUR eligibility threshold should also be gradually decreased and indexed to a reference gas hub.

When solved, to ensure that customers are able to compare offers in an easier way, there is the possibility to limit the structure of allowed offers. However, this might be against the drivers that lead suppliers to innovate.

European markets in which this barrier has also been indicated

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

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

Portugal removed end-user price regulation for non-household customers and the transitional period ended in 2016. As part of the phase-out process, which started in 2010 for gas non-household customers and in 2011 for electricity non-household customers, a transitional period was defined by the government in Portugal in order to enable customers supplied under regulated end-user prices to choose a new market supplier and move to the liberalised market. During this period, the NRA (ERSE), sets a tariff (called the 'transitional tariff'), which may include an additional value, whose objective is to promote customers to switch to a market tariff.

Lastly, under the terms of Government Ordinance N. 39/2017 of 26 January 2017, consumers who still have regulated tariffs have a transitional period until 31 December 2020 to choose an electricity market supplier. While, under the terms of Government Ordinance N. 144/2017 of 24 April 2017, consumers who still have regulated tariffs have a transitional period until 2023 to choose a natural gas market supplier.

Low margin of regulated offer (margin squeeze). In the research this barrier was raised as being still an issue in Spain.

It is common across Europe that price regulation sets the regulated price to a defined level and allows all market participants to serve customers within this regulated segment. Generally, this can create a barrier in the market if the regulated price is set to such a low level that only companies with economies of scale are able to generate a sustainable margin. This issue might generate margin squeeze, making it very difficult for suppliers to compete.

The problem in Spain is twofold. The first relates to the regulated commercial margins. Despite recent regulatory developments aimed at removing this concern, it still seems that the current regulated margins remain below actual costs, hindering the ability of new suppliers to win customers. Suppliers concerns relate firstly to the cost structure recognized to compute the margin of regulated offers, established to reflect the cost structure of an efficient and well-managed company. Also, as of today, regulated tariffs do not include one cost that suppliers are obliged to bear: the financing of the social tariff (which offers discounts of 25%, 40% or 100% to vulnerable consumers, according to their income and other criteria). Likewise, regarding the last resort tariff in the gas market, which do not reflect the contribution by supply companies to the energy efficiency national fund (FNEE), the costs associated to the guarantees to operate in the Spanish gas market (cost of the guaranties for the payment of access tariffs and cost of the guaranties to cover potential imbalances) and the cost for the application of the Winter Plan, are not included in the calculation of the gas last resort tariffs. Both cases together with the regulated margin, lead to below costs tariffs diminish the possibility of new entrants willing to make offer on the free market to gain customers.

Secondly, there is limited room to improve offers in the free market due to the high share of regulated tariff components. Also, the current regulated tariffs reduce the appetite of suppliers to develop new generation, enhancing further competition.

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

National issue

Regulated tariffs based on PVPC seem to be below costs, hindering competition on the regulated segment (as of today accounting for 95% of the consumers). Similar situation appeared in the gas market. The share of access tariffs in the electricity household tariff, on average, was as high as the ~60% of the tariff, with the energy cost representing on average up to the ~37% of the tariff, leaving very little room for suppliers' margin. An offer made by a supplier with high economies of scale could lower these already limited margins, possibly still at levels below net costs, squeezing suppliers' margins.

Potential solutions

Important solutions have been deployed. Since 2014 the energy cost is calculated ex-post, as a pass though of the average price resulting in the spot electricity market during the period covered by the bill. This prevents the energy component of the regulated tariff to be set below cost (although suppliers still rise this issue). In the case of consumers with an operative smart meter installed (more than 98% of customers), since 1 October 2015, a real time energy tariff, following the spot price, is applied.

Additionally, after the regulatory and tax reforms introduced in 2013-2015, the access tariffs have been stable, and should start decreasing thanks to the recovery of the accumulated tariff deficit.

However, there is still the need to review the commercial margin, to ensure that it covers all the costs of an efficient supplier. Resulting in a margin that could encourage the access of other suppliers.

Provided there is no will to reduce the threshold, increase the mark up of these tariffs even to use these additional funds for system funding to incentivise consumers to leave the regulated market due to its higher costs. Moreover, this would prevent windfall profits from regulated segment.

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

Best practice example:

Before 2014, the price regulation regime (PVPC) raised many complaints from electricity companies, claiming that the price was set below cost or may have too limited margin to cover the risk of activity.

Hence, a new Royal Decree was issued (RD 216/2014), establishing a new methodology for calculating the PVPC, including the energy cost, the applicable access tariffs and a commercial margin.

The main difference is that the energy cost is now calculated on an ex-post basis, using the average price resulting in the spot electricity market during the period covered by the bill. In the case of consumers with an operative smart meter installed (as of now, more than 98%), since 1 October 2015, a real consumption tariff following the spot price, is applied. The real time price is published by the electricity TSO through ESIOS platform.

Having a pass-through of the energy cost from the electricity spot market is considered as a best practice within the price regulation category. This prevents the energy component of the regulated tariff to be set below cost. However, the customers exposure to the volatility of the spot market may trigger further Government interventions.

Discussions still exist about the value of the commercial margin, which still is seen as too low by reference suppliers and limits the ability to compete of new and small companies. Also, having a price regulation in place that applies to the 95% of the retail market is perceived as hindering competition among suppliers. Suppliers wish a phase-out of price regulation regime, with a clear plan defined by the relevant institutions.

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

Obligation to collect tariffs unrelated to energy on behalf of others. In the research this barrier was indicated as an issue in Spain. 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 licence fees, or providing other services, e.g. energy efficiency measures.

In Spain, this issue is twofold. On the one hand, the inherent burden on suppliers whose collection periods mismatch on many occasions their financial obligations, together with the liability of collecting not only energy related costs but also tolls and levies independent from power supply. In fact, the access tariffs in Spain include a large proportion of charges, which mostly recover the costs of RES and cogeneration subsidies, the accumulated tariff deficit and the cost of compensating the extra-costs of supplying electricity in the non-mainland territories.

On the other hand, suppliers have to finance the energy efficiency fund (at European level, energy efficiency obligations may require suppliers to invest on energy efficiency measures, while in Spain they only face the obligation to contribute to the energy efficiency fund according to their sales).

It shall be also noted that the EE fund contribution is based on Y-2 volumes and thus during the first two years of operation suppliers are “exempted” from this charge. Therefore, this somehow benefits new entrants in its first years of operation.
Identified national issue and related potential solutions regarding the Spanish case are reported in the graphic below.

National issue

The financial burden on suppliers is sometimes perceived as a barrier.
On the one hand, the access tariffs that suppliers have to collect from end customers (guaranteed payment for regulated DSO and TSO activities) include a large share of charges that cover the RES and cogeneration support costs, the recovery of accumulated tariff deficit and the compensation for the extra costs of supplying electricity to the islands.
On the other hand, suppliers are financing the following costs:

- contribution to the Energy Effiency National Fund (both gas and electricity suppliers);
- financing the social tariff, applicabl to vulnerable customers (so far only applies to electricity suppliers).

Potential solutions

Main alternative would be:

- In the last years the government has implemented contributions to the State budget to cover part of the cost of supporting renewables and cogeneration and the extra-cost of the non-mainland territories. This has stabilized the volume of charges included in the access tariff.
- The transposition of the energy efficiency directive should be improved, so that suppliers have the alternative of investing in energy efficiency measures, besides the contribution to the national fund.
- As recommended by the EU, the social tariff should be financed by the State budget.

Alternatively, even though has been proven the least preferred options by some consumers, the possibility of implementing separate billings where DSO are invoicing for the network charges and the supplier is invoicing the rest of the components, could relief partly this burden.

European markets in which this barrier has also been indicated

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

1.3. Description of regulatory disincentivisation barriers in Spain: 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 Spain.

In general, suppliers may experience uncertainty because of unpredictability around what the future regulatory framework will look like and hence what business opportunities will be possible.

In the case of Spain, we consider the regulatory uncertainty to come from unnecessary delays issuing recent regulation. The regulatory framework governing regulated tariffs which are identified as the main barrier in the Spanish market is very unlikely to change in the foreseeable future. Besides, suppliers report that some retail market regulation is nowadays considered outdated and obsolete (RD 1955/2000; 1434/2002; 1435/2002; 1164/201; RD 949/2001), generating controversies and confusion over important issues as DSO/suppliers liabilities and quality of service.

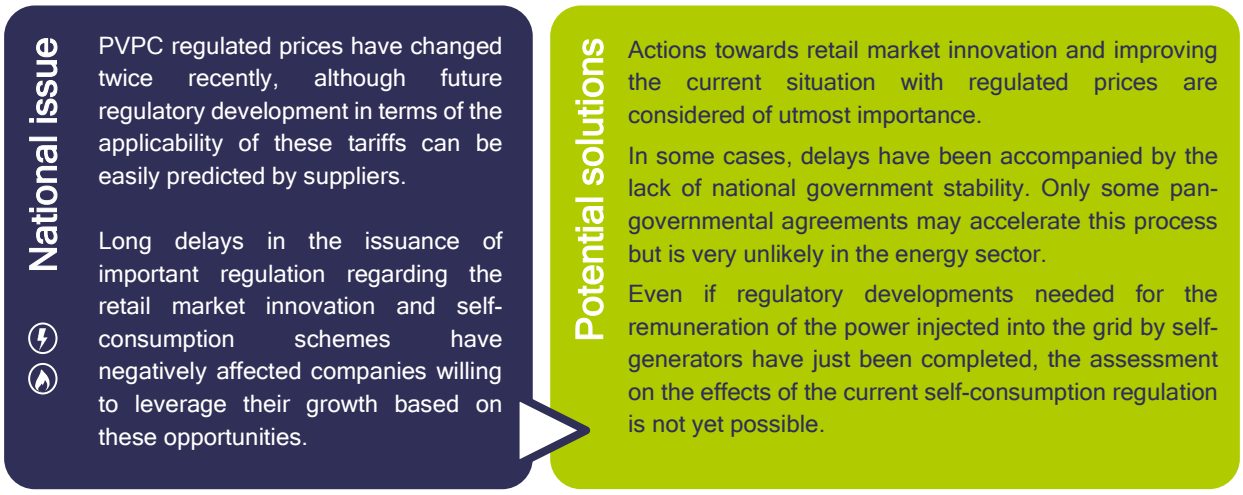
The most relevant issues mentioned by respondents dealt with self-generation regulation, which has been held for four years and has been issued just recently, and the solution for demand aggregation and participation in the market (described in following sections). Royal Decree 244/2019, of 5 April, regulates administrative, technical

and economic types of electricity supply and generation with self-consumption. Several companies are actively pursuing this segment. The background of such regulation lies on the previous Spanish self-consumption regulation which was one of the most discouraging with new installations among European countries. The new scheme recognises three different modalities: without surplus, surplus with net-billing and surplus with no net-billing. As of March 2020, net billing will be fully enforced.

On December 20th, Spanish Official Gazette published the updated operational procedures to accommodate to new self-generation rules via a ministerial resolution[10].

Also, even though is a tax issue, the IAE has been under discussion for several years and has been an important claim across suppliers, because each local administration is responsible for collecting this tax. It seems the new government will actually revise this tax in the coming months once the national budget is passed.

National issue raised by suppliers and related potential solutions regarding the Spanish 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

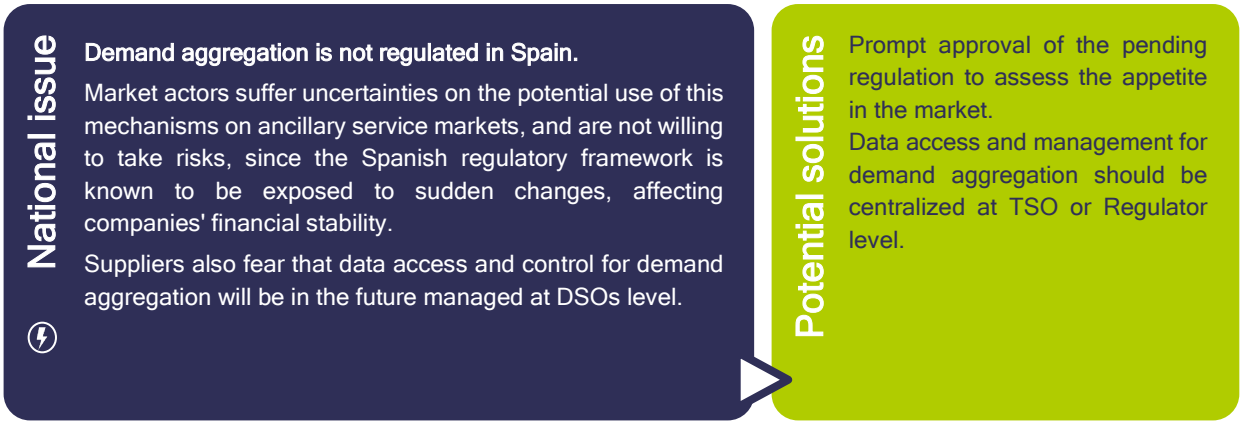
Uncertainty regarding future regulatory developments, especially in the field of digitalization and new technology. In the research this barrier was identified as an issue in Spain. More than being an issue related to uncertainty in the regulation, is a matter of lacking all secondary legislation to evaluate these business opportunities.

Generally, new technological advances require regulatory frameworks in order to be fully rolled out without excessive business risk for suppliers. Smart meter rollout targets have been achieved in Spain with a deployment rate of over 98%, allowing real-time tariffs introduction. In this sense, it seems the future regulation on access tariffs will not fully benefit from this technology, although is still soon to assess it. Moreover, demand aggregation regulation has not yet been fully introduced (this issue will be explained in the following section). In some cases,

[10] https://www.boe.es/eli/es/res/2019/12/11/(3)/dof/spa/pdf

it is mentioned that could be achieved without the need for mandatory regulatory interventions. In this regards, regulatory interventions should be carefully justified and be aimed at correcting identified market distortions. However, further participation of demand flexibility in the market require specific regulatory developments.

National issue raised by suppliers and related potential solutions regarding the Spanish 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 Spain: Access to innovation

No fit between new business models and existing regulation/obligations. In our research this barrier was raised as an issue in Spain.

In general, regulatory requirements/obligations designed for traditional suppliers may not make sense for innovative players who are nonetheless bound by them.

In Spain, the early implementation of smart meters is helping the innovation around new products and services. On December 23rd, the Spanish Official Gazette published the CNMC resolution establishing the conditions for the balancing and settlement of electricity balancing services providers11. This regulation transposes the guidelines set out by Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing[12].

Under this new regulatory framework, demand and storage units, either single or aggregated, are allowed to operate as balancing services providers under the same conditions as generation units.

[11] https://www.boe.es/boe/dias/2019/12/23/pdfs/BOE-A-2019-18423.pdf
[12] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017R2195

However, there are some aspects in the current regulation that are perceived as possible barriers by suppliers on the possibilities offered by innovative products. There is the need to have the full comprehensive regulation to evaluate this issue. The threshold for these units to participate in these balancing services has been lowered to 1MW which is an important development, although some units specially in the domestic segment are bounded by this limit. There are some aspects about missing market value with current provisions, which will be treated in next headings. National issue raised by suppliers and related potential solutions regarding the Spanish case are reported in the graphic below.

National issue

Responding suppliers in Spain point out that still there is no demand aggregation regulation at the moment, and it is perceived that there is no regulatory activity and no regulation is expected in the short or midterm. In December 2019, with the approval of the terms and conditions for the balancing market, the first step of the regulatory development for demand-side participation in the wholesale markets was given. However, further regulatory development is needed before this activity can start.

Suppliers report that the current design of the balancing market is considered adequate for generators but not for consumers. Technical constraints are experienced, and DSOs obstructing behaviours are also reported.

Potential solutions

Measures that would improve the environment around innovative products:

- Pilot projects on demand aggregation
- Gradual reduction of threshold for demand to participate in the market
- Complete the regulatory developmt for the participation of demand and agregation in the market, abating the impact of DSO activities.
- Improving of the balancing market design to allow full participation of demand aggegators in the same way that RES generators can already paricipate.

European markets in which this barrier has also been indicated

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

Missing flexibility in tariff structures. In our research this barrier was raised as an issue in Spain.

In general tariff structures' potential to be flexible is a main driver of demand flexibility as it allows the design of incentive-based tariffs with several Time-Of-Use tariff zones, encouraging customers to consume when it is cheaper. In Spain the regulation is evolving in the right direction. The new methodology for access tariffs is expected to be completed by the end of 2020, further fostering the development of time-of-use tariffs for end-users. However, given the provisions already released, not full benefits of the infrastructure are expected. On top of this, alternative cost allocation mechanisms may favor consumption driven behaviors.

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

National issue

The current tariff/billing system has a high fixed cost compared to consumption-driven bills, lowering the interest of end-consumers to change supplier or save energy. It also provides inefficient economic signals to electric vehicle charging, storage, citizens' energy communities, etc. Also, suppliers point out that smart meters' potential is not fully deployed enclosing the provision of dynamic or critical peak pricing.

Potential solutions

With a higher variable part of the tariff, consumers would have strong incentives to

- reduce their consumption
- search for the best price in the market
- New rules recently issued and new tariffs to be approved aimed at enhancing flexibility. Final effectiveness to these tariffs to be confirmed.

Tariff designs using features such as critical peak pricing or dynamic pricing may enhance rational use of electricity.

European markets in which this barrier has also been indicated

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

LATVIAN BEST PRACTICE CASE: Grid tariff flexibility

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

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

As mentioned, Spain has introduced some measures towards creating a new market, but it is too early to assess their effects.

Regarding the new regulation on participation of demand and storage on the balancing services is seen as not fully comprehensive to allow exploiting the whole market value suppliers may reach through their portfolio of services. The Capacity thresholds may be reached through the aggregation of different facilities in one balancing unit. Each balancing unit shall correspond to one type of activity: generation, demand and storage, which prevent combination of sources.

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

National issue

The spirit of the current regulation seems to avoid bunding generation, demand and storage when participating in the balancing services.

Potential solutions

Improving of the balancing market design to allow for full participation of demand aggregators in the same way that RES generators can already participate, and also allow combination of these units.

European markets in which this barrier has also been indicated

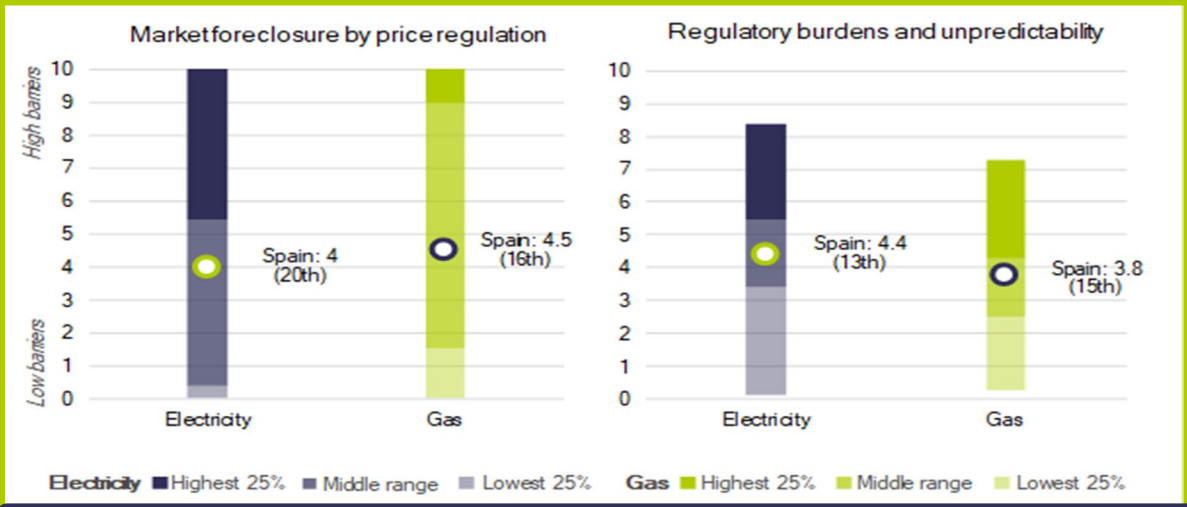
AT BE BG HR CY CZ DE DK EE FI FR EL HU IE IT LV LT LU NL NO PL PT RO SK SI ES SE UK

1.5. Spain'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 Spain 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



Spain was ranked in the middle range in both market foreclosure and regulatory burdens and unpredictability indexes.

2) Market inequality

Within market inequality, barriers across Europe have been sub-categorised into two areas encompassing 8 specific barriers[13]:

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

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

capacities can also be limited for small suppliers if market players with a large generation portfolio can withdraw production capacity from the accessible markets. Balancing and ancillary services markets can also be distorted as they are often still designed to mainly benefit large-scale generation, discriminating against smaller market participants. Below, we describe these barriers related to market power in more detail.

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

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

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

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

- 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 Spain: Unbundling & market power

Best practice example:

Brand unbundling

In general terms, similarities in the name and logo of the incumbent supplier and the DSO may negatively impact the retail market in terms of competition, as customers are unaware that they are two separate entities and hence of their opportunity to choose supplier.

Inefficient brand unbundling between distribution and supply companies, such as similarities in the name and logo of the incumbent supplier and the DSO had a negative impact in terms of competition on the Spanish retail market, until 2018. In 2018, the CNMC approved a legally binding decision obliging several companies of the main integrated energy groups to change their DSOs corporate name, to change their brand image and to identify unequivocally the company when informing customers so that consumers can clearly identify the company. This measure has already been implemented by all Spanish DSOs, vertically integrated with supplying activity. However, the level of customer awareness regarding this point remains low due to either the recent application of this legal binding decision by the regulator or due to the scarce level of information and of knowledges among customers. As in other industries, companies operating in the sector for long time, always keep a competitive advantage over the others.

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

In general, the incumbent/existing suppliers across Europe are able to use tactics in pricing, customer access, combined billing etc. not available to new entrants, negatively affecting small suppliers with only a limited customer base. However, aggressive offers happen as in any other segment of the economy and not solely by ex-incumbents, ultimately this price war affects more the smaller companies.

The European legislation provides very clear provisions on DSO supply unbundling. However, the differentiation between supplier of regulated tariffs and free market tariffs is not as developed. The CNMC set requirement for clear separation of brands and processes among these activities. In the case of Spain, this process has been carefully monitored by the CNMC, although in some cases suppliers are concerned about visuals and branding displayed when accessing the supplier's website.

Incumbent suppliers in Spain have been known to have advantages in shifting customers from the regulated to the non-regulated segments of the market, by means of inducing confusion to end users. CNMC already took actions to prevent strategic behaviour favouring incumbents (there has been one complaint against Naturgy and Endesa because of introducing publicity in the bills of regulated tariff customers). This ended with commitment on the side of Naturgy, to stop this behaviour, and a penalty imposed on Endesa due to their legacy of vertically integrated structures and thus communication channels between business.

Despite the CNMC has been actively tackling this behaviour with penalties, during the survey and consultations with suppliers, we have been informed about claims sent to the CNMC about possible exchange of information

between DSO and suppliers. As mentioned, CNMC confirmed they remain extremely vigilant towards such behaviours and open cases when applicable. As of today, CNMC mentioned they have not detected and identified specific cases of improper unbundling between the reference and the liberalized suppliers.

It shall be note that, despite the no complete information which can be gathered from central platforms provided by the CNMC (due to EU rules on data protection, see following sections), it was not long ago when a complete database of consumers was available and is likely that many suppliers active in the market at that time kept this information and use it.

Even though the perception of inadequate behaviour has been reported to the CNMC, no real evidence of fraud can be concluded since this practice was acknowledged and penalized a few years back, and this may come from legacy information available prior to the Data protection communitarian law.

Dual or multi offers are also mentioned as barriers for new entrants. It shall be noted that it is a usual practice for small and large suppliers alike. Discounts on other products not related to electricity are also used by newcomers, such as oil companies, which have aggressively entered the electricity market. They are not an advantage of incumbents, although penalize smaller players alike in any other business.

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

National issue

In the past, incumbent /existing suppliers had customer care offices for both the regulated and non-regulated business segments located in the same physical location, sometimes sharing the same telephone number. This helped them to shift customers from the regulated to the non-regulated business segment of the retail market. These commercial practices were abandoned after CNMC penalties issuance.

In parallel, big suppliers are able to use tactics in pricing that disadvantage small suppliers. Dual offers, as the ability to provide discounts non-related to power or gas sector (such as discounts in main shopping malls or massive marketing campaigns) might exclude other suppliers from the competition. In any case this is related with the nature of any economic activity.

Potential solutions

Competition authority actions help to reduce illegal policies of progressively moving customers already supplied under the regulated price regime to the free market within the same supplier.

Notifications regarding abuses should be quickly processed by the competition authority.

We may suggest standard offers to be the only ones allowed but of course would be an uncoherent step back on innovation and marketing activities on the benefit of customers.

European markets in which this barrier has also been indicated

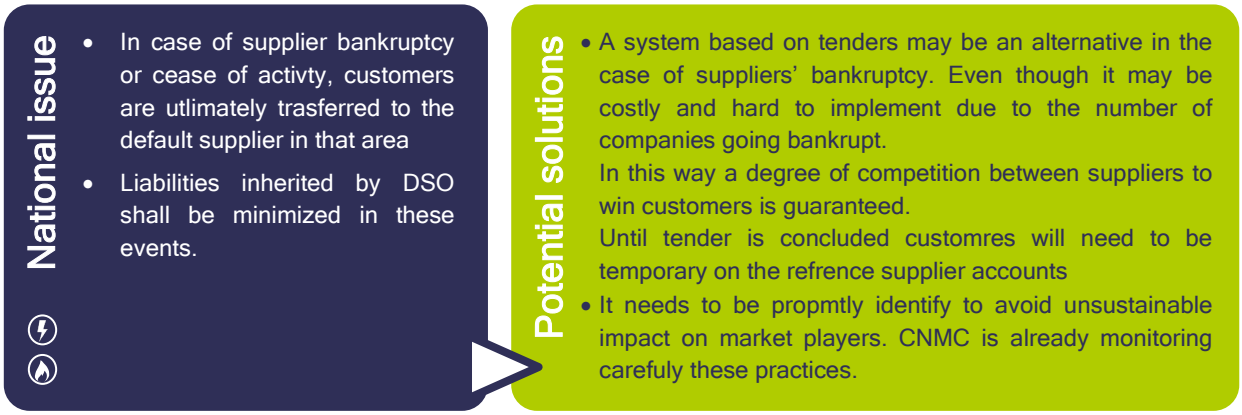
AT	BE	BG	HR	CY	CZ	DE	DK	EE	FI	FR	EL	HU	IE	IT	LV	LT	LU	NL	NO	PL	PT	RO	SK	SI	ES	SE	UK
■		■	■	■		■	■	■	■	■	■	■	■	■	■	■	■		■	■		■		■	■	■	

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

It has been found that in Europe, vertically integrated companies still have 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.

In the case of Spain, as mentioned above, there is the perception of incumbents' competitive advantage over new entrants regarding data and information access. As described above, these cases have been fined and it is possible that incumbents, as any other supplier, are using the consumers information previously available to persuade them with more advantageous offers. The other aspects framed within the lack of transparency and advantage of integrated players was about the mechanism to allocate customers from an insolvent supplier. It is worth mentioning that this has an impact on the liabilities acquired (mainly access tariffs and wholesale market). When a company cease operations, the former is absorbed by the DSO while the latter is socialized. Thus, has a quite relevant impact. Secondly, once this event happens. First, DSO informs the consumer to look for an alternative supplier within a period of one month and is only after this period when the reference supplier is allocated this customer. In most cases customers are spread across different regions. This process rises some mistrust between new entrants.

Spanish national issue identified by suppliers and related potential solutions regarding the Spanish 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

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

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

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

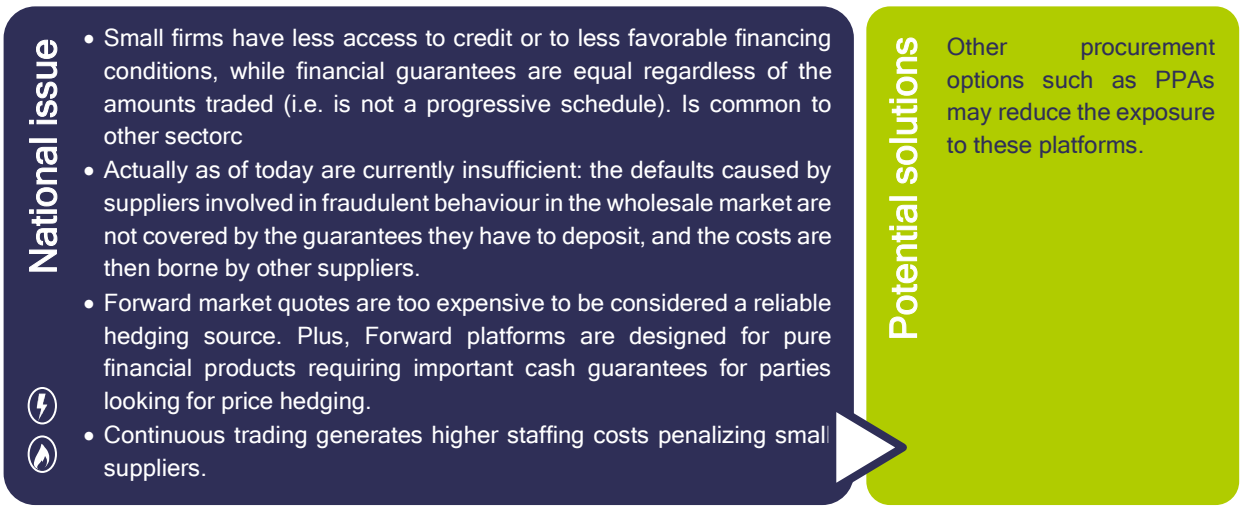
Discriminatory market platform access (standards, guarantees, etc.). In our research this barrier was identified as an issue in Spain.

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.

The requirements and administrative burden to become a member in Spain are minimal, and this had led to hundreds of generators, suppliers and traders becoming members in one of the most liquid power exchanges in Europe. However, more onerous requirements when entering a market is embedded in the current market environment and mostly driven by financial institutions' requirement. In this case, will keep comments from market players, although will make clear statement on the common nature of these problems with other sectors.

Other important aspect is the trend towards continuous trading which generates higher staffing costs penalizing small suppliers. In any case, Spain will have 6 intra-day bidding sessions plus a continuous cross-border European market and there is no intention to eliminate any of them for the time being despite the requirement from EU legislation on continuous trading.

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



European markets in which this barrier has also been indicated

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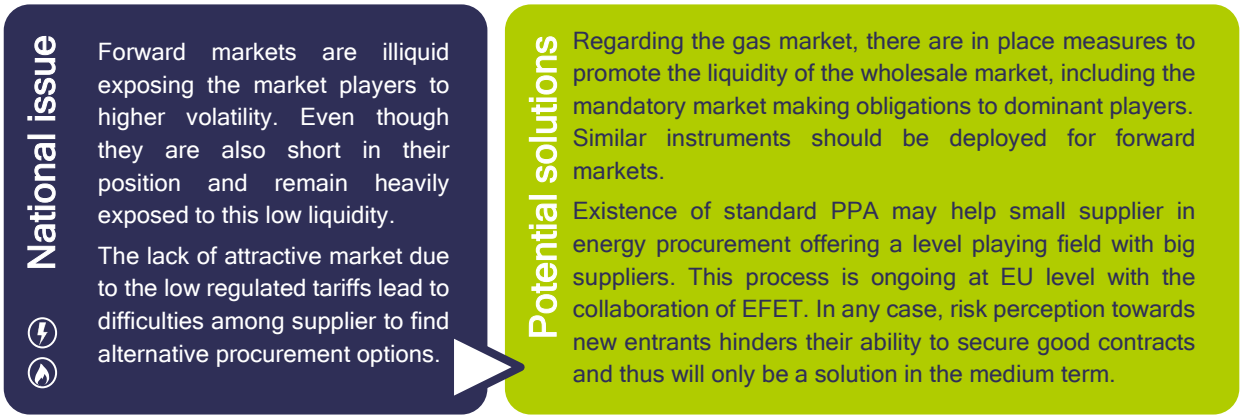
Low liquidity in the wholesale market. In our research this barrier was raised as an issue in Spain.

In general terms, a lack of liquidity in the wholesale market is a barrier to operation as it leads to higher prices and risks, and therefore increases sourcing costs.
The Spanish electricity spot market is one of the most liquid in Europe. However, the forward market platforms are still at incipient level not having the same level of liquidity of the spot market platform. It is worth mentioning the notable increase on forward market liquidity outside OMIP. In the last years, other platforms operating at EU level have reached a surprisingly high liquidity. Also, is worth mentioning that the lack of liquidity impacts suppliers that due to the size of their customer base have significant open positions on its procurement.

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



European markets in which this barrier has also been indicated

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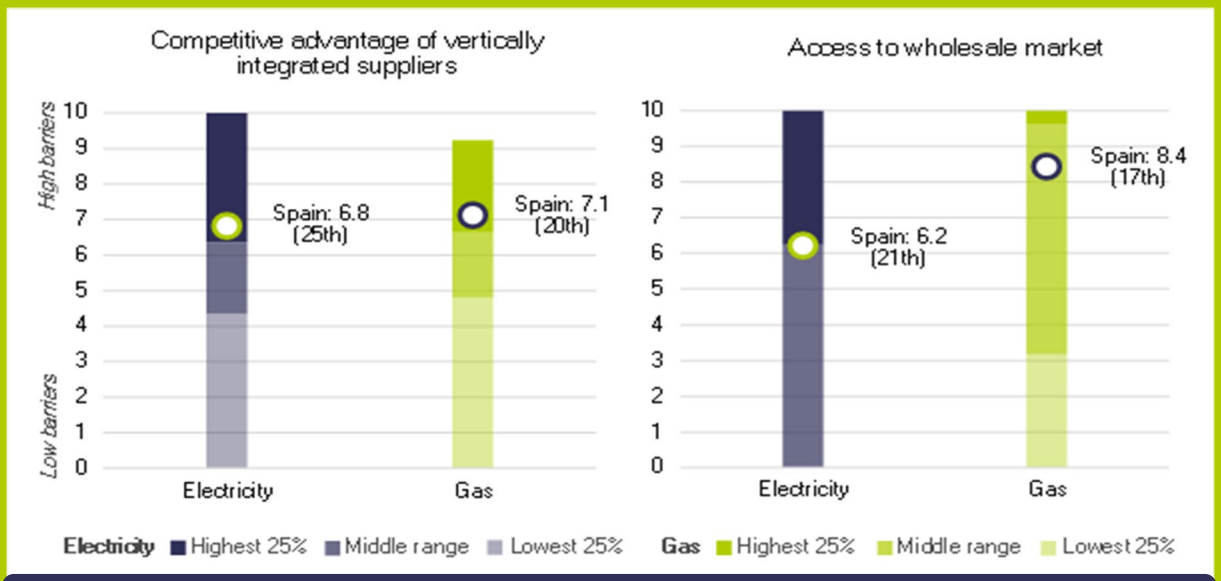
2.3. Spain's performance in this barrier category

The following figure shows quantitative indicators of how far market inequality acts as a barrier in this market. The values for Spain 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



Spain was ranked in the upper bound of the middle range for both indexes, showing the effect of barriers still perceived by suppliers that are not vertically integrated and in accessing the wholesale market.

3) Operational and procedural hindrances

Within operational and procedural hindrances, barriers across Europe have been sub-categorised into two areas encompassing 13 specific barriers[14]:

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,

[14] Please note: these definitions are Europe focused, not Spanish 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 Spain.

- 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 Spain.

- **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 Spain: Sign-up & operations compliance

High financial requirements (incl. long working capital cycles) and forced risk during operations. In this research this barrier was raised as an issue in Spain.

Generally, high financial requirements such as securities and minimum account balances for balancing services and procurement, as well as long working capital cycles, e.g. due to mismatches between invoicing and collection, can present a barrier due to the amount of capital that must be set aside.

In the past, there have been some cases of delays in the billing information provided by DSOs. e-distribucion introduced delays in the billing information in some of the regions in the second half of 2017, due to a change in IT systems. However, the situation was normalized in the first months of 2018.

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

European markets in which this barrier has also been indicated

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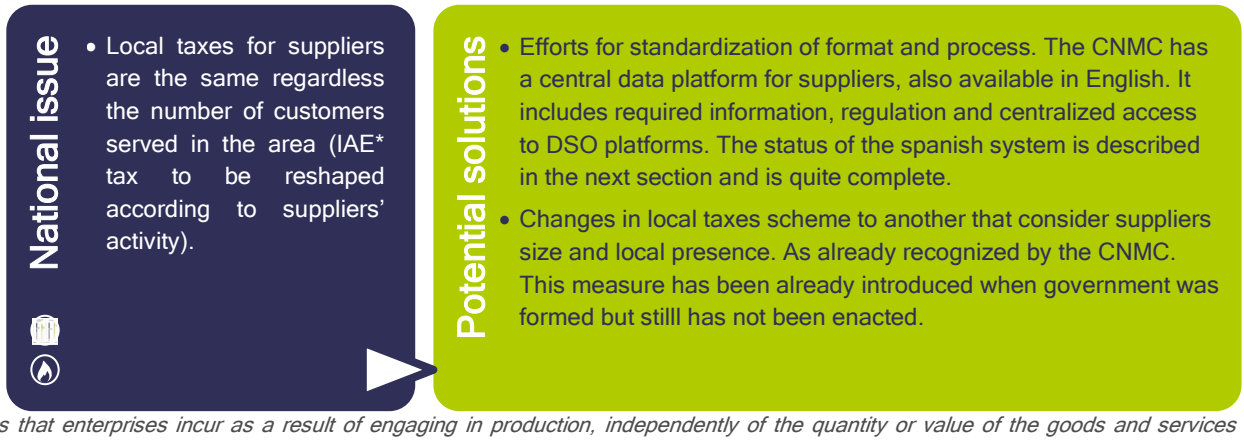
Regional differences or differences between DSOs within a country. In this research this barrier was identified as an issue in Spain.

As a general concept, different regions within the country or different DSOs' grid areas have different processes, data formats, local taxes etc. This requires more effort from the supplier to be active across many regions, compared to if there were national standardisation and regardless the number of served customers in the area. Regarding local taxes, in Spain, suppliers face inequality of which the CNMC has recognized the importance but has not yet implemented any actions about IAE[15] but is expected soon.

[15] The CNMC in a recent published report on IAE tax inequality: "in the acts that the Regulator may issue, should weigh an interpretation that allows more favourable conditions for access to the supply activity in any part of the national territory, including small population centres. … In this way, all suppliers could access any population centre without limitation, thereby

Also, some regional governments can indeed require suppliers or DSOs operating in their areas to deliver specific information.

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



**taxes that enterprises incur as a result of engaging in production, independently of the quantity or value of the goods and services produced and sold, and therefore unrelated to the company's profit.*

European markets in which this barrier has also been indicated

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

Lack of data hub. In this research this barrier was raised as an issue in Spain.

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.

As of today, there have been a lot of progress in centralize data and process for switching between suppliers in Spain. In a nutshell current tools and protocols include: i) the SIPS platform managed by the CNMC and ii) "ficheros de intercambio" exchanged between the Cx and Dx, using standardized formats approved by CNMC. A working group led by the CNMC takes care of updating these formats as regulation evolves (for instance, after the approval of the self- consumption regulation).

CNMC organises several working sessions on a monthly basis with distributors and suppliers, consumers associations, and large consumers. The protocol includes, among others, switching procedures in access,

improving competitive pressure, ultimately benefiting consumers." - *Informe 7/2/2018 sobre el amparo del art. 28 Ley 20/2013 (UM/006/18)* - https://www.cnmc.es/sites/default/files/1927072_9.pdf

modification of access data, contract cancellation, recruitment of contract, claims, invoicing protocols and notification of changes.

This continuous work on enhancing protocols, allows improvement in switching procedures reducing, among others, the average time for switching and the number of rejected switching requests.
Access to real time data is possible through the DSOs platforms only for the customer, its supplier and any other supplier authorized by the customer himself. This may be an additional hurdle since new suppliers may need to be familiar with different platforms to get information for preparing offers to customers.

In some cases, the concern is more related with the lack of complete information which we have to say is due to the data protection regulation and thus cannot be changed and affect equally all suppliers.

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

National issue

Spain has a relatively high switching rate which make us think the process is somehow streamlined with the above-mentioned measures

There exist in Spain a central data platform, organized by the CNMC and gives fair access to all suppliers. Real time metered information and maximum consumption per period are not included due to data protection legislation restrictions.

Lack of homogenization on access to real time data from different DSOs.

Potential solutions

The CNMC has a central data platform for suppliers, also available in English. It includes required information, regulation and centralized access to DSO platforms.

Despite being potentially more expensive, external metering company handling all this process and information might be perceived as more transparent. There is not proof of such benefits and likely will imply additional costs to the system.

Currently the DSOs are developing a central platform to facilitate access to these data through one single interface. But this will only give access to the data to the customer that owns them and the suppliers that are authorized by the same. This should be operational by mid-2020. Suppliers believe such a system should be managed by TSO or CNMC guaranteeing the level playing field.

European markets in which this barrier has also been indicated

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DENMARK BEST PRACTICE CASE: Denmark's DataHub

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

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

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

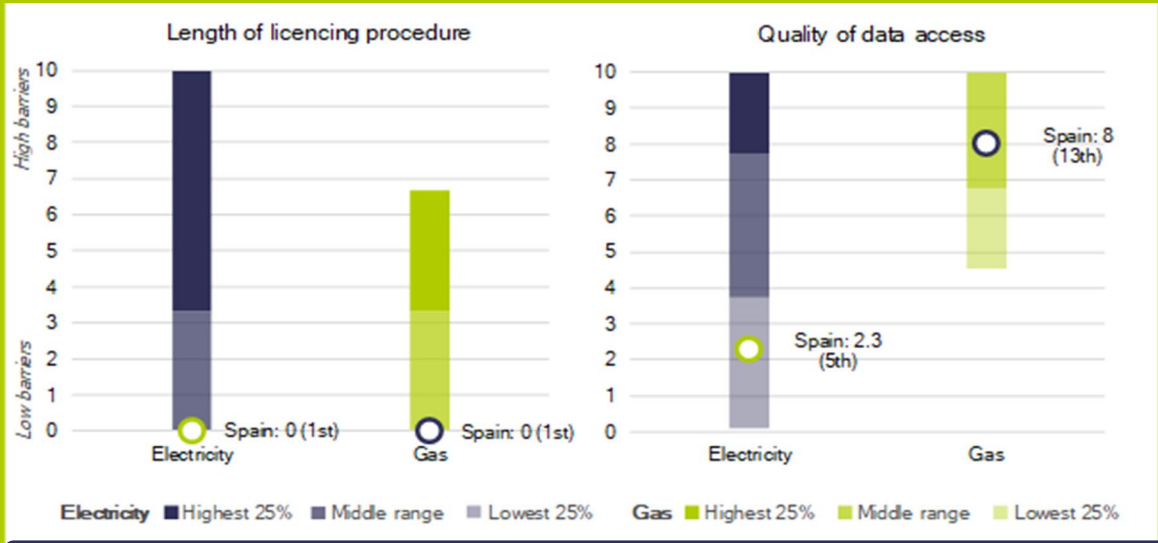
This favourable situation results from the existence since 2019 of a centralized data platform, Elhub, that is functioning near-perfectly according to suppliers to even out the playing field around data access (see section 3.2). Previously, independent suppliers faced delays and obstruction in obtaining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

3.3. Spain'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 Spain 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



Spain was ranked 1st regarding the length of licensing procedure index. For both electricity and gas sectors there is no express procedures for issuing a license, rather processes of registration and notification by the competent authorities. Regarding the data access there seem to be heavier barriers regarding the gas sector.

4) Customer inertia

Within operational and procedural hindrances, barriers across Europe have been sub-categorised into one area encompassing 6 specific barriers[16]:

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 Spain.

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

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

4.1. Description of customer inertia barriers in Spain: Customer orientation

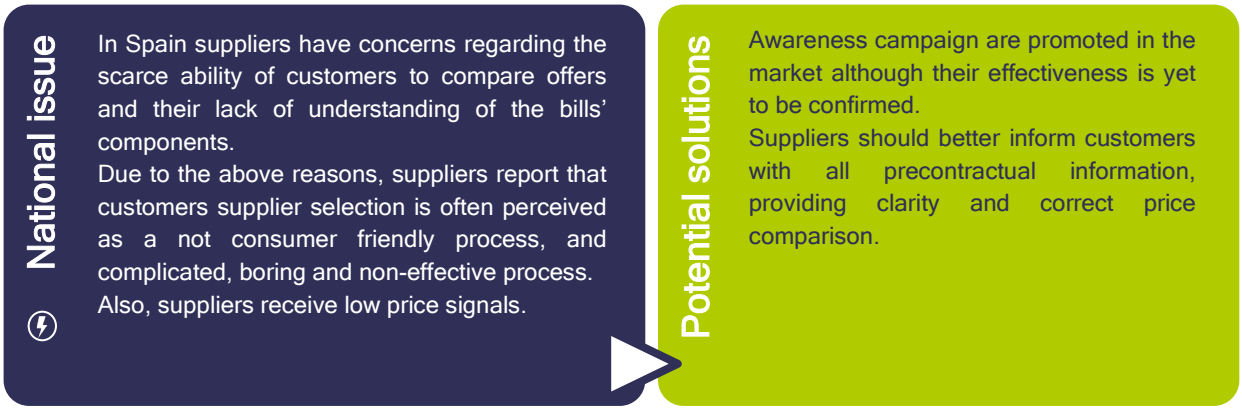
Low customer awareness or interest makes it difficult to attract customers. In this research this barrier was raised as an issue in Spain.

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

In Spain, 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 a 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 Spain have been among the highest in EU.

Even though there is a comparison tool developed and maintained by the CNMC. 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.

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



European markets in which this barrier has also been indicated

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Consumers prefer status quo. In this research this barrier was identified as an issue in Spain.

Generally, customers can experience strong incentives to stay on a regulated price (e.g. because it is cheaper, and they mistrust new suppliers).

This is the case in Spain, where suppliers understand that customers prefer to stay under the regulated price regime. The Spanish national issue raised by suppliers and related potential solutions regarding the Spanish case are reported in the graphic below.

European markets in which this barrier has also been indicated

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Lack of trust in new or foreign suppliers and in new technology. In this research this barrier was indicated as an issue in Spain.

Generally, the lack of trust towards 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. Also, customers do not trust new suppliers because of untruthful commercial practices, wrong price information and price discounts. This builds a barrier for new suppliers that are trying to attract customers, as they have to invest heavily in building a new relationship. The national issue identified by suppliers and related potential solutions regarding the Spanish case are reported in the graphic below.

National issue

Suppliers report that customers don't trust energy companies. Bad commercial practices, lack of correct price information before contract, unfair contractual practices (penalties to cancel contract), false information about price discounts, are common practices and creates a negative opinion of customers about energy suppliers.

Potential solutions

- Customers associations to better monitor suppliers' behavior, and act against unfair contractual clauses.
- CNMC has published a list of recommendations to suppliers and customers on how to select and make a new supplying contract. To the benefit of competition, regulators should raise supplier company reliability and support their entrance.

European markets in which this barrier has also been indicated

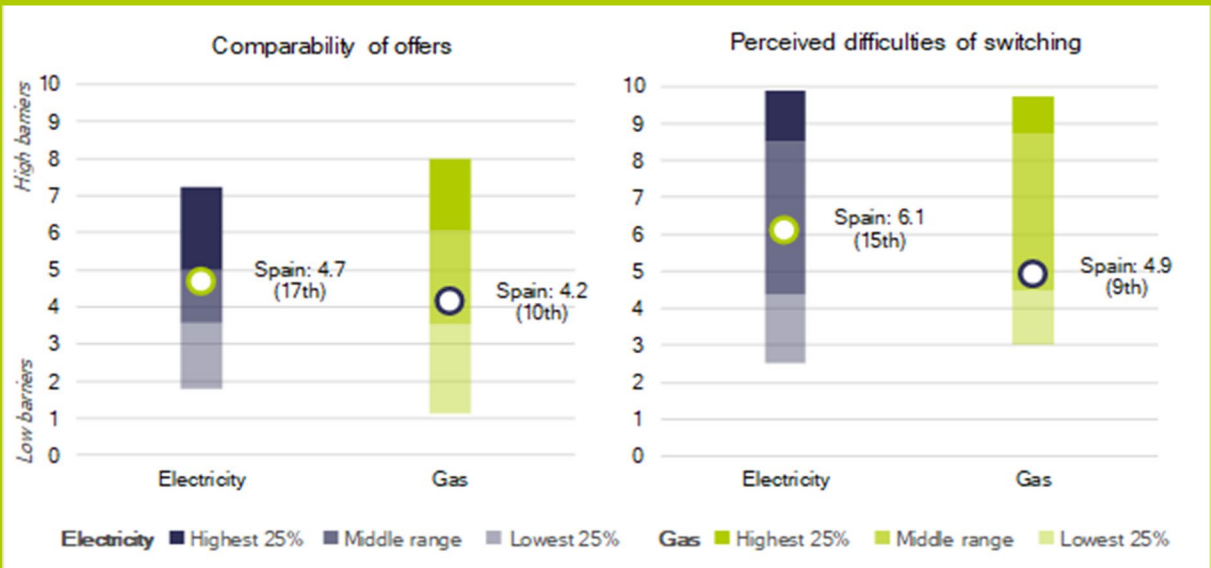
AT BE BG HR CY CZ DE DK EE FI FR EL HU IE IT LV LT LU NL NO PL PT RO SK SI ES SE UK

4.2. Spain'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 Spain 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



Spain was ranked in the middle range for both indexes showing a good performance regarding the activities of offers comparison and the difficulties regarding switching activities.

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.

Description of other barriers in Spain: Energy Efficiency Fund

National issue

Suppliers are forced to pay a fee every year (Fondo Nacional de Eficiencia Energetica, FNEE) based on Y-2 sales that is not supportive for direct efficiency improvements.
Furthermore, due to the lag in the calculation, the FNEE introduces additional business risks in case of a reduction in the number of customers. business.

Potential solutions

Suppliers suggest that a market for "white" certificates (efficiency certificates) is missing in Spain and could be a valuable solution.
A White Certificate system would be preferable and would open new opportunities for new entrants in the retail market.

European markets in which this barrier has also been indicated

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

FINDINGS & RECOMMENDATIONS

This handbook provides a high-level framework of relevant barriers to entry and operate for energy suppliers into the Spanish 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**, and despite the ongoing efforts in Spain to promote streamlined access and a level playing field for new entrants in the electricity and gas retail business there are significant hurdles which prevent further retail competition. In the case of Spain, as in many other countries, there is a widespread agreement of pointing out regulated prices for household customers as the major entry barrier. As a general principle, regulated prices may distort competition in the market and inhibit a level playing field between competing suppliers. Moreover, when regulated prices are set with commercial margins below what are considered fair levels, as in the case of Spain, this does not only discourage new entrants in the market, but also remove supplier's profits in this segment and thus cannot be sustained over time. Lack of smooth competition in the market is detrimental to the functioning of retail markets. Despite of that, consumers are progressively leaving the regulated tariff in Spain (only 21% of gas and 39,4% of electricity consumers are under regulated prices).
Based on the findings from this study, gradually decrease the contracted capacity eligibility threshold and gradually restrict regulated prices to vulnerable customers will thrive competition in the domestic segment. In any case, if there is no will to reduce the threshold, a solution can be to increase the mark up of regulated tariffs and use these proceeded funds for system funding and incentivize consumers to leave the regulated market due to its higher costs. Providing in this way the purpose of protecting customers and ensuring that reference suppliers are not making unfair profits from regulated tariffs. Due to the political uncertainty in the country over past few years, the issuance of relevant regulatory developments has been significantly delayed and has impacted the business plans of many companies willing to enter the retail market.

Regarding **market inequality**, companies whose added value, in some cases, was tied to the opportunity to offer additional services rather than the traditional power supply were able to gain from this position of competitive advantage. In Spain, functional unbundling has been implemented, with DSOs consequential re-branding. Yet, suppliers still report that the effects of such an action have not been perceived in the market. Close monitoring by the Regulator with accessory actions aimed at studying the effectiveness of unbundling are recommended.

Regarding the **operational and procedural hindrance**, in the case of Spain, there have been significant improvements on data access. Despite some suppliers still perceive room for improvement, current EU regulation's on data protection and privacy integrity prevent further openness on the data availability. It is well known from experience that suppliers having to enter into many interactions with many DSOs in order to sell electricity or gas in a country, can also be a barrier to entry. In the case of Spain, DSO are working on a common platform which should aim at facilitating this process and is expected to be operational by mid-2020.

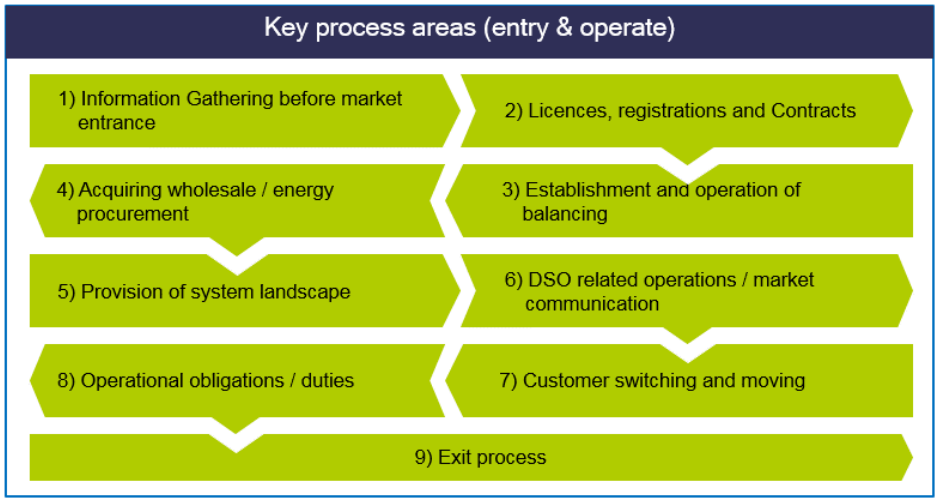
Finally, it is worth mentioning that a well-functioning energy market should be one where there is a good environment for innovation of energy services and products, with high benefits for the final customers. The availability of smart metering equipment and systems which allow time-of-use is well developed in the case of Spain, but as of today it is not used at its maximum potential. On top of this, the ability of demand and storage to opt into balancing services is emerging in the market. Due to the incipient status of the forthcoming regulation governing these services, we cannot conclude the effectiveness of the scheme, but this development has been deeply awaited by new entrants. The aim of this project is to make sure all visions of the actors populating the retail markets are reflected, we would like to mention that, in the case of Spain, financial burden from accessing wholesale markets, working capital requirements due to the nature of operations are still heavy burdens for supplier to carry.

Regarding **customer inertia,** the lack of trust on new companies willing to offer electricity and gas services, hinders further competition. Together with the fact that it is widespread low awareness in bill understanding and there exist perceptions of switching process as complex, boring and non-effective. With high incentive on stay in the regulated segment of the market. Awareness campaign are promoted in the market although their effectiveness is yet to be confirmed. Also, the CNMC has published a list of recommendations to suppliers and customers on how to select and make a new supplying contract. With the end of stimulating competition, regulators should raise supplier company reliability and support their entrance. Recommended measures that would increase customer awareness are the enhancing monitoring activity on suppliers precontractual and information provision activity, customers associations to better monitor suppliers' behaviour, and act against unfair contractual clauses, enhance recommendations to suppliers and customers on how to select and make a new contract, strengthening all the activities aimed at enhancing customer awareness in the domestic sector.

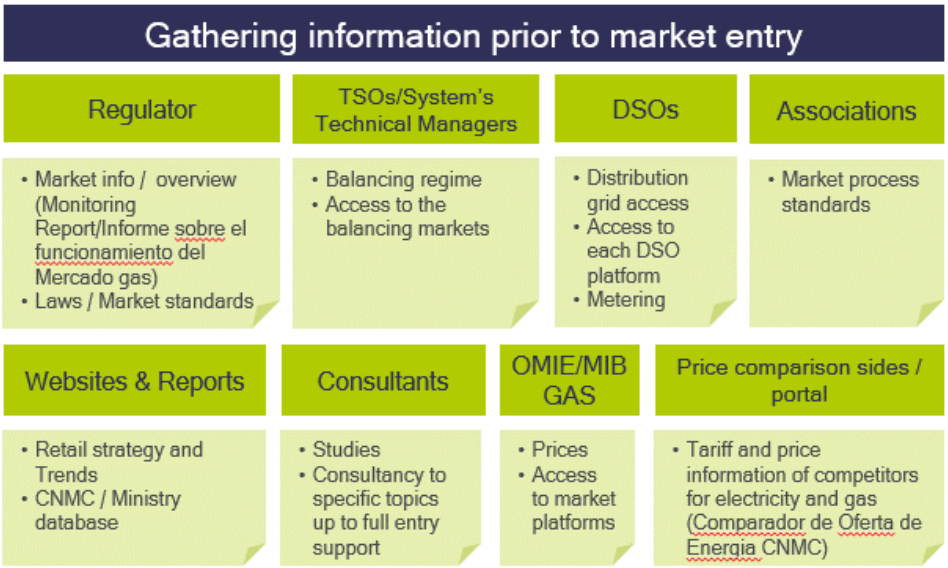
We acknowledge the relevance of these aspects for new entrants; however, it is worth highlighting that some of these issues are common to most economic activities and it is a matter of time to overcome these hurdles. In this aspect, a good example is the telecom sector where new operators have been able to penetrate a market which at the begging competitors were struggling to enter.

APPENDIX 1: PROCESSES

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

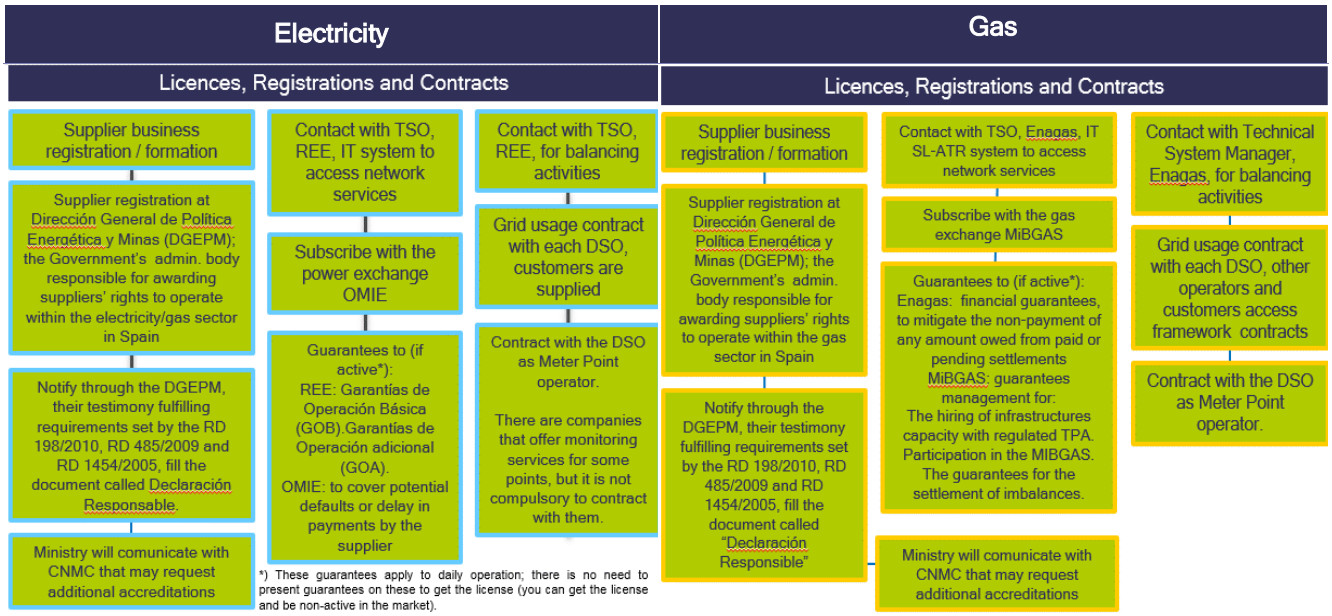
1. Main route to information:

- to become a market agent the OMIE/MIBGAS platform, guide and market rules.
- to register as a supplier the DGPEM /CNMC.
- DSOs keep database with technical information on each distribution supply point and data on gas and electricity consumption (the same data are also sent to the CNMC every month) on this point it is under consultation the possibility to have less aggregated data (called consulta P0).

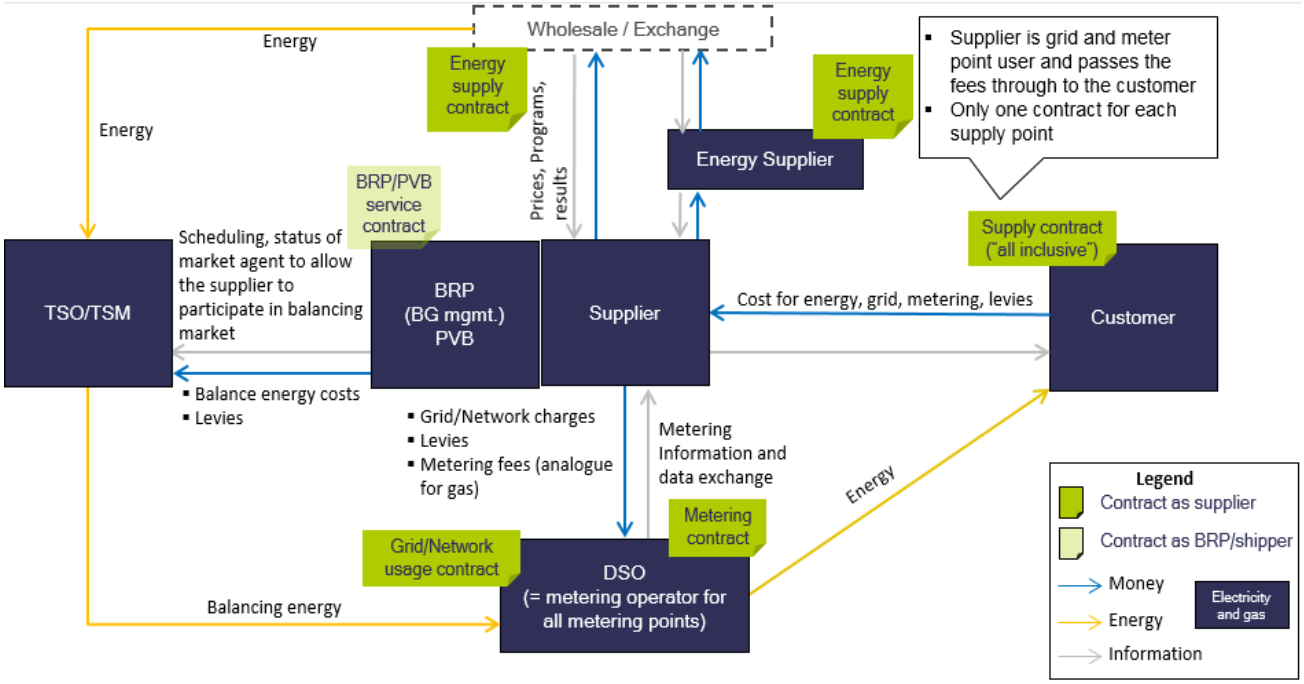
2. List of **key players and institutions** to talk to: CNMC, Ministry of Ecological Transition, Red Eléctrica de España/Enagás (gas and electricity TSO), Dirección General de Política Energética y Minas (DGEPM); DSOs, OMIE and MIBGAS (market operators).
3. **CNMC Monitoring report** (for electricity "supervisión del mercado minorista de electricidad"; for gas "supervisión mercado minorista gas" - "Informe sobre el funcionamiento del Mercado mayorista de gas") of the regulator give a good high-level overview of market structure, and developments (also available in English).
4. A **central platform** for gas suppliers is the Unified Platform for Gas Suppliers available in English. It includes required information, regulation and centralized access to DSO platforms.
5. **Laws and standard contracts** (e.g. with DSO) available in Spanish only (statutory law and regulation might be found in English with non-binding translation). Spanish law recognizes only one official central tariff comparison and neither the Ministry nor the CNMC certifies the tariff comparisons as in other countries.
   The recast Electricity Directive introduces a series of twelve standards on how comparison tools (CTs) should function effectively to the benefit of energy consumers. There should be at least one CT in each MS with the following properties:
   1. independence from market participants.
   2. equal treatment of energy undertakings in search results.
   3. disclosure of ownership.
   4. disclosure of funding sources:
   5. objective comparison criteria and their disclosure.
   6. plain language.
   7. accurate and up to date information.
   8. information on the time of the last update.
   9. accessibility for persons with disabilities.
   10. procedures to report incorrect information.
   11. requirement of as little personal information for comparison as possible and
   12. coverage of the whole market.

   CNMC is one of the seven NRAs that state that its CT fulfill all these criteria.
   Additionally, there are 15 other CTs in Spain.
6. **DSOs costs** are homogeneous and published each year by the Ministry.
7. **Balancing regime** very well described on TSO websites and grid/network code.
8. **Language of information:** mainly in Spanish, although non-binding translations of market rules are available

2) Licenses, registrations and contracts



Dependencies / Contracts for Electricity and Gas

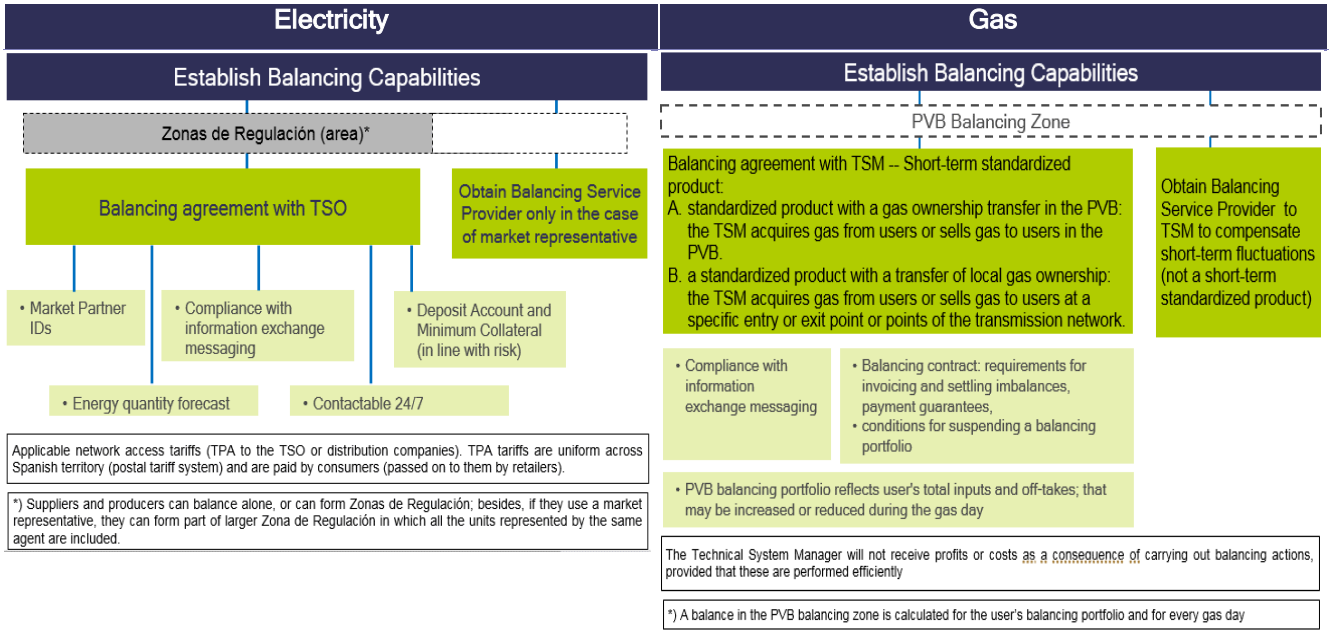


Further comments

- Suppliers must register at Dirección General de Política Energética y Minas (DGEPM), notifying to the Ministry and CNMC.
- Contracts to enter electricity/gas supply contracts with either the market operator or energy supplier; BRP/PVB service contract if any; Grid usage contract; Metering and supply contract

- REE (electricity TSO), Enagas (gas TSO), CNMC and OMIE/MIBGAS ask each candidate to provide several legal/financial documents (accounts, certificates of being up to date with payments to fiscal authorities, etc.) and ask for a minimum technical capacity (IT systems).
- Grid usage contract must be concluded with each DSO and every network user (paper contracts);
- Market access guide (OMIE/MIBGAS) enclose all the details to become a market agent
  - https://www.omie.es/en/how-become-agent
  - http://m.mibgas.es/en/gas-markets/participants/how-become-member/access-guide
- Foreign energy supply companies - regardless of their place of business – must also register if they supply household customers in Spain.
- Any company acting in OMIE/MIBGAS shall be registered.

3) Balancing



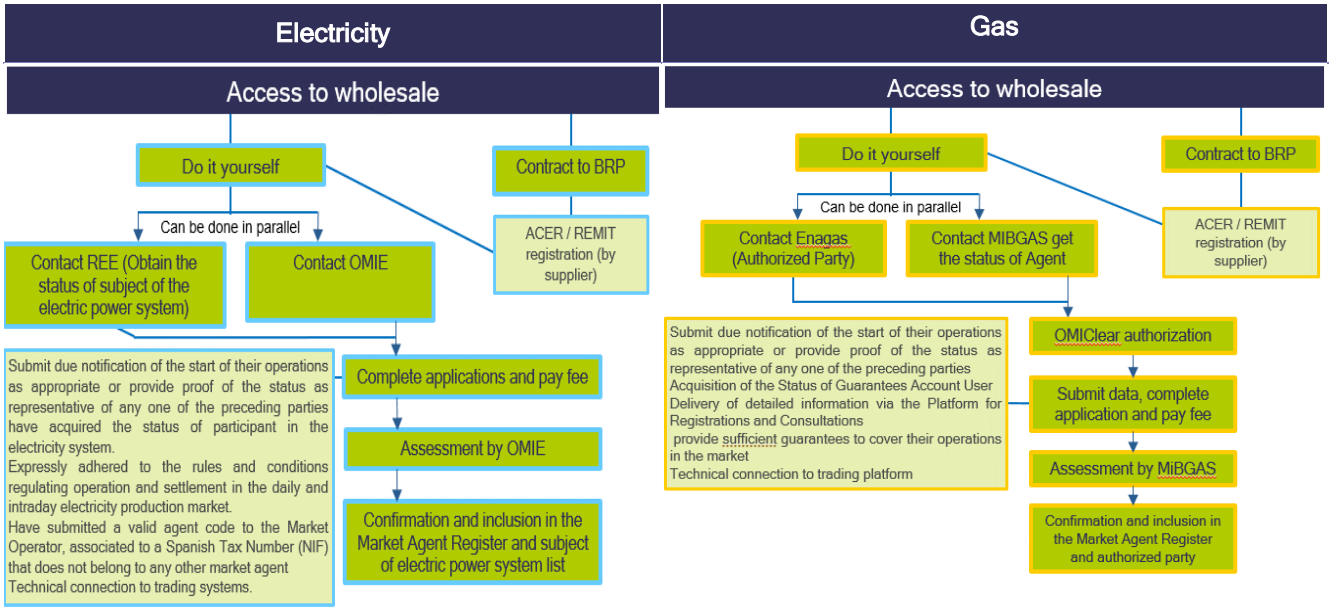
Further comments

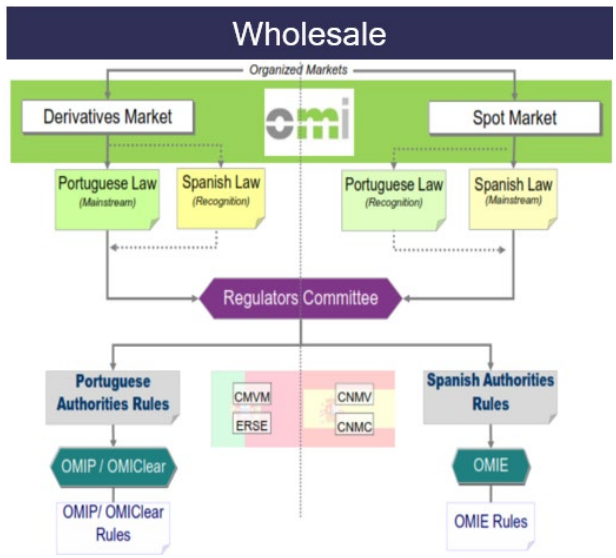
- BRP are responsible for forecasting managed volumes and keeping the represented parties posted on regulatory changes and foreseeable implications. Suppliers usually perform subsequent analysis to improve the quality of their forecasts.
- Hence, a typical risk is related to imbalances and forecast errors of both volumes and prices.
- New regulation for demand aggregators is expected. One of the main measures expected in the sector is the reduction of the minimum capacity required to participate in the balancing market from 10 MW (5 MW for secondary) to 1 MW.

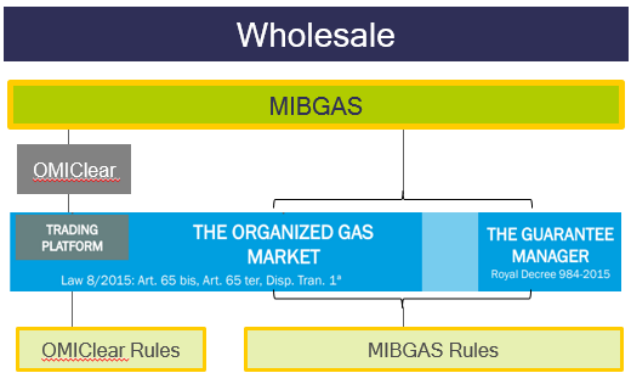
- RES can participate to balancing market since February 2016. Up to early 2019 only hydro, wind and concentrated solar power technologies have been participating.
- There exist several associations promoting ESCOs, consumers and aggregators as ANESE, ASGECO, UNION RENOVABLES, entra.

The energy agency, IDAE, Instituto para la Diversificación y Ahorro de la Energía, webpage publishes the list of the 1.376 officially registered ESCOs in Spain (https://www.idae.es/empresas/servicios-energeticos)

4) Wholesale



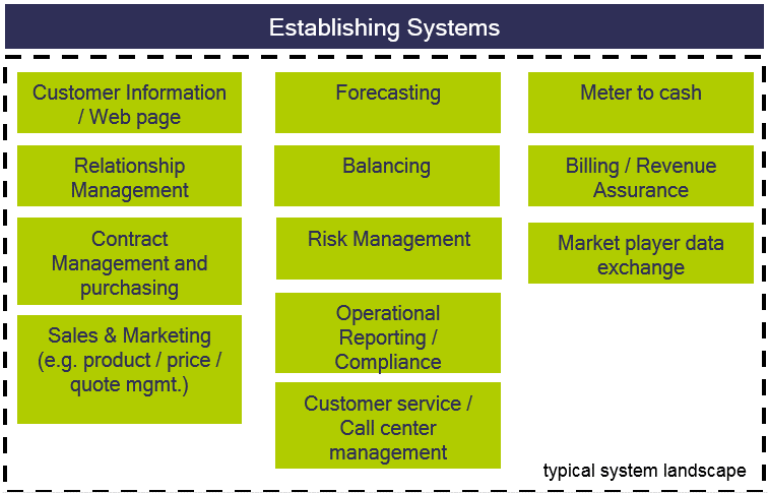




Further comments

- A supplier can have access to wholesale market directly or procure the energy by outsourcing this service. Also, a supplier may own generation power plants.
- Access rules to the wholesale market is in compliance with the EU market rules.

5) System landscape



Further comments

- To make accurate supply forecast, it is necessary for the supplier to know and analyse the historical consumption of its customers. The supply curve is thus based on historical data or profiles published by REE (annually and by customer type).
- Data exchange and management software are available and can be used with a monthly subscription (examples are kommodo, Pylon EasyData).
- Mandatory connections with OMIE, OMIclear and REE.

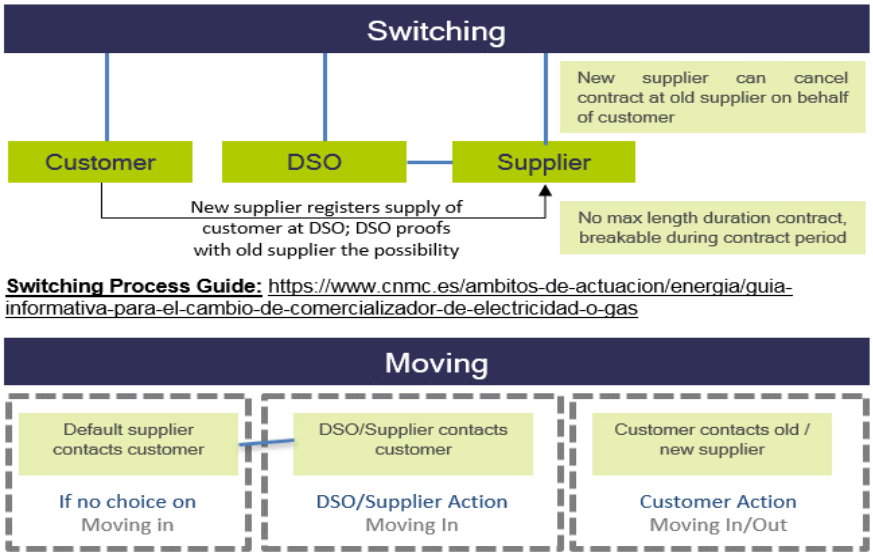
6) DSO-related operations & market communications

Electricity & Gas	Comments
Interaction with DSOs DSO Metering operator Switching and moving Process Supply point data Customer Data Metering Information Other Suppliers	DSOs database on consumers and distribution supply points: 9. Database registration link: https://sede.cnmc.gob.es/tramites/energia/bases-de-datos-de-consumidores-y-puntos-de-suministro-sips-de-gas-y-de 10. Database complete download link: https://api.cnmc.gob.es/cargador/#/cargaExpress 11. Database single download link: https://documentacion.cnmc.es/doc/pages/viewpage.action?pageId=11141123 Big suppliers usually download the complete database, while smaller ones download the single database.

Further comments

- To deliver energy to a customer a contract with the relevant DSO is needed.
- Spain is one of the seven Member State where there is a procedure for contracts between DSO and supplier where a supplier-centric model is applicable
- Information exchange and meter data:
  - Analogue and smart meter data performed by DSO.
  - The information exchange is mainly made through the SIPS database kept by the DSOs and shared with the CNMC. It is a standard process that can be download as a complete set or strictly related to a single supply point.
  - The information is sent to the CNMC in standard formats related to every single consumer load and is verified by the CNMC for consistency. In addition, it is cross-checked when a switch of supplier is performed (RD 1435/2002 y RD 1434/2002).
  - Information exchange software: It can be accessed at CNMC website through https://sede.cnmc.gob.es/tramites/energia/bases-de-datos-de-consumidores-y-puntos-de-suministro-sips-de-gas-y-de
  - Suppliers may initiate conflicts at CNMC against DSOs in case they are prevented from accessing their information or not allowed to switch.
  - Access data is easy, in 24 hours customers data may be available. Once the signup is confirmed, the access is in real time

7) Customer switching & moving



Switching Process Guide: https://www.cnmc.es/ambitos-de-actuacion/energia/guia-informativa-para-el-cambio-de-comercializador-de-electricidad-o-gas

Further comments

Switching process

- Switching is a free process and is standardized:
  - all the consumers have the right to freely choose the supplier with which they want to contract the electricity/gas supply.
  - exchange protocol during switch, billing and complaints are standardized. CNMC supervise and approve the standards. This allows the CNMC to check if barriers are being placed to suppliers in entering the retail market.
- The maximum term to switch supplier is 21 days. During 2018, the average time for switching supplier was 8.5 days. From the DSO perspective, an average time of activation of 3.1 days is observed for the majority of the 2.7 million requests activated during 2018.
- CNMC is obliged to provide training on switching to suppliers. In 2018, 3 courses have been held.
- Special clauses: most suppliers offer discounts on power if the buyer acquires an additional service which does have a minimum length (this way, they force the customer to remain with them despite the power contract has no minimum length clause).
- Using the comparison tool from the NRA (CNMC), customers are able to compare between different suppliers' offers for gas and electricity. They can check if there are additional services included, the annual price for the first and the second year as well as all the information details. For more information: https://comparadorofertasenergia.cnmc.es/comparador/index.cfm?js=1&e=N

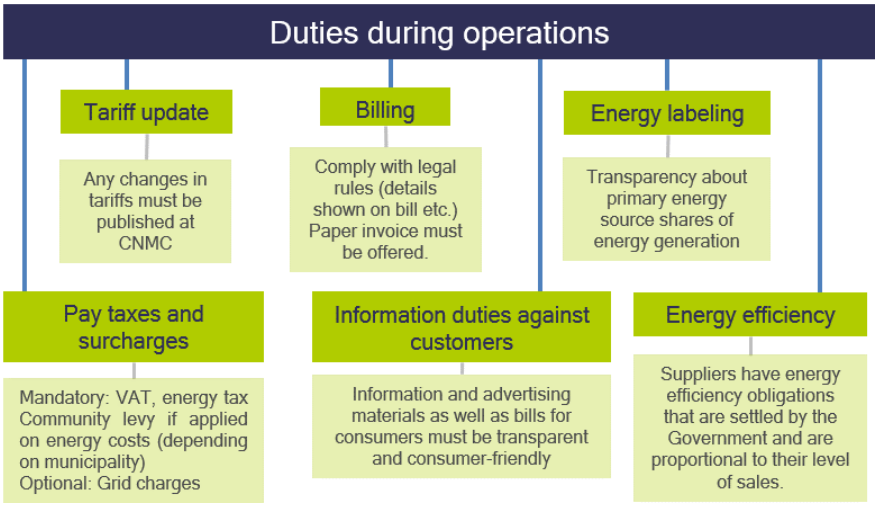
Standardised switching protocols

With the objective to promote agile telematics exchange of information between suppliers and distributors for electricity and gas, Spanish regulator CNMC maintains updated formats of files for the exchange of information between suppliers and distributors and approves them by Resolution. CNMC organises several working sessions on a monthly basis with distributors and suppliers, consumers associations, and large consumers. The protocol includes, among others, switching procedures in access, modification of access data, contract cancellation, recruitment of contract, claims, invoicing protocols and notification of changes.
This continuous work on enhancing protocols, allows improvement in switching procedures reducing, among others, the average time for switching and the number of rejected switching requests.

Moving process

- Moving in / no action: default contract at the local supplier who serves the most customers in the region (incumbent supplier).
- Moving out within valid contract time; no cancellation right per se; old supplier might proceed to move the existing contract to the new address if it is possible (handled differently by each supplier).

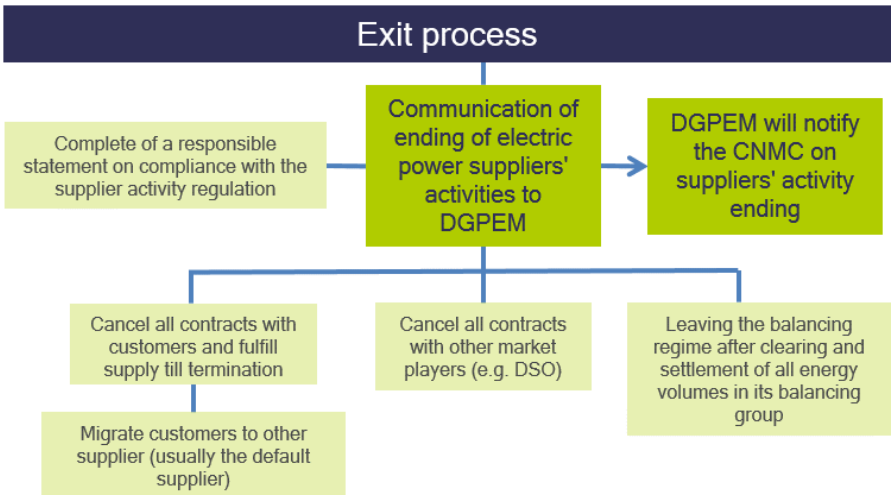
8) Operational obligations / duties



Further comments

1. Tariff information checked by CNMC.
2. The bill has mandatory contents and information to be included, e.g. system charges, taxes and surcharges, and energy costs must be stated separately.
3. CNMC has drawn up a sample bill.
4. Combined billing (energy + grid charges) is optional.
5. Customers have a right to receive a paper invoice.
6. The amount of the community levy and calculation method (applied on energy costs or grid charges) varies amongst municipalities - suppliers need to integrate the different levels into their accounting and billing systems.
7. Suppliers have energy efficiency obligations that are settled by the Government and are proportional to their level of sales. This quota obligation is quantified in euros per ktep saved each year and the contributions are collected in a fund called “Fondo Nacional de Eficiencia Energetica” (see BOE-A-2019-4358)

9) Market exit



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