



**RELEVANT ASPECTS FROM  
THE PERSPECTIVE OF  
COMPETITION IN RELATION  
TO  
'SMART-METER  
ELECTRICITY  
CONSUMPTION DATA  
ACCESS  
AND USAGE'**

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## 1. BACKGROUND

The main objective of the **Catalan Competition Authority (ACCO)** is to **guarantee and improve the well-being of consumers and users by ensuring the existence of competition** in Catalan markets. For this reason **the ACCO places special emphasis on the ability of the various operators to access elements they consider essential** to be able to offer their goods and services in the market. This circumstance results in a larger number of competing operators and therefore in benefits for consumers, mainly in terms of lower prices, better quality and more innovation.

One element that is becoming more and more necessary to be able to offer goods and services (particularly innovative services) is information (data). With this in mind, **the ACCO conducted a study entitled 'THE DATA ECONOMY. CHALLENGES FOR COMPETITION'** in November 2016, to thoroughly analyse the transformation that the growing value of information is engendering on the general economic level (even characterising the economy itself – the data economy), in addition to the main challenges that these changes pose for competition.

One of the most significant aspects of this study was its clarification that *'the non-rivalry of data does not mean that whoever obtained the data will not exclude or try to exclude competitors from their data warehouse'*. Accordingly, **data** (i) have a **growing economic value** (associated with the increasing ability to use them thanks to enhanced processing capacities), (ii) **may be essential** to be able to offer goods and services, and (iii) **could be subject to exclusive access** (they are not a public good like street lights to which access cannot be limited).

It is in relation to this last point that the ACCO decided to **commission a study on access to electricity consumption data collected by smart meters**<sup>1</sup>.

This study makes reference to **various behaviours that have had and continue to have significant effects on competition**. It specifically refers to **behaviours that limit access to smart-meter information in a context in which the electricity market is shifting from the simple supply of energy to other energy services that require the management of consumption data**.

## 2. ACCESS NEUTRALITY

**Electricity distribution is a natural monopoly** insofar as it is based on a single network whose duplication would not make any economic sense.

It is this physical circumstance that has been used to justify the assignment of the management of each section of the network to a specific operator.

However, **this argument can in no way justify the extension of this exclusive assignment to other areas arising from this physical distribution (such as digital or virtual)** with the consequent serious impact it would have on competition.

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<sup>1</sup> Pep Salas (2017), 'Smart-Meter Data Access and Usage'.



The framework of the study on 'Smart-Meter Data Access and Usage' indicates the **risk that preponderance in a regulated area (electricity distribution) would entail for the management of the information gathered by these meters.**

This circumstance not only conditions this area, but, as **smart meters are a strategic element considered to be essential to the development of markets that require electricity consumption data** (from electricity retailing to smart homes and energy efficiency), it could also have major effects beyond the meters themselves.

With regard to this area of analysis the study highlights that **in Spain it is quite difficult for both users and third parties to access data** gathered by an electricity distributor, which could lead one to the conclusion that the **retailing company from the distributor's corporate group is probably given priority access** to this information, (**breaching the principle of access neutrality**).

Consequently, there is the **risk of transferring the preponderance in the area of distribution to other areas such as retailing, meters and, by extension, any new areas that may be based on the information initially collected by the distributors.**

Various actions that could have directly or indirectly affected access to electricity consumption data (and possibly access neutrality) have been identified in this area. They are briefly presented below.

### **3. ACTIONS**

#### **3.1 Premature Installation of Smart Meters**

Spain opted to establish a plan to foster the change from analogue meters to digital (smart) meters (in relation to 15 kW or 'V' type meters) in 2007 with a view to achieving full conversion by 2018.

With this decision, Spain anticipated the European Union which, two years later, published Directive 2009/72/EC concerning common rules for the internal market in electricity, according to which **the Member States must ensure the implementation of smart systems**. However, this European **obligation was subject to a positive Cost-Benefit Analysis (CBA) result in terms of economic viability**, which was to be undertaken prior to 3 September 2012.

Contrary to appearances, implementing an infrastructure modernisation process is not necessarily positive for competition if the decision taken at a given time is not suitable to meet future needs.

- **The installed infrastructure did not correspond to the best technology available**

Specifically, **this circumstance occurs when new infrastructure is not ready to offer the options required for the development of new markets and new business models based on it.**

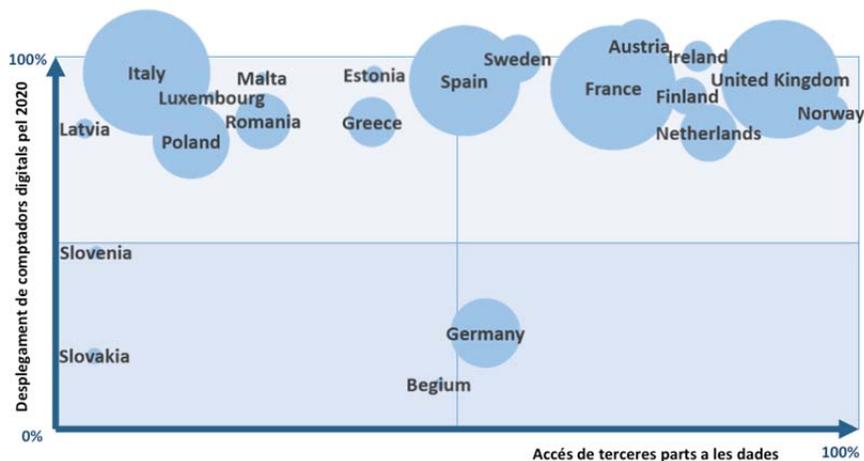
- **The cost-benefit associated with the decision was not assessed**

Surprisingly, in Spain **this Cost-Benefit Analysis was not undertaken** (at least not in accordance with the procedure established by the European Commission), **which means that an enormous** (approximately €5,000,000,000) **and far-reaching decision was taken without quantifying the actual benefit that it would produce.**

The undertaking of this analysis is essential, as it makes no sense to make an investment with a return not expected to exceed its cost. In fact, in Germany the result of this assessment was negative, so only the meters of consumer groups for which the associated benefits were considered sufficient to compensate the investment were replaced. Accordingly, in total, in Germany ‘the meters of some 11 million consumers are being replaced, accounting for 23% of the 48 million meters currently installed’.

The image below shows that Germany based its strategic decision on judicious principles (fewer meters installed than other countries, which is why it is at the bottom of the chart). The top of the chart shows the countries that have undertaken a much more widespread implementation. The ones on the left are those that place more restrictions on third-party access to data (when the customer wants a third party to manage this information), while those on the right offer more open access. In short, the worst combination lies in the top-left corner (major investment in replacing meters with little return, given the limits on third-party access) and, in contrast, the best scenario is in the top-right corner (high rates of implementation and data openness that enable the appearance of new markets that provide society with significant benefits).

Figure 1. Differences in the roll-out of smart meters and third-party access to their data by Member State<sup>2</sup>



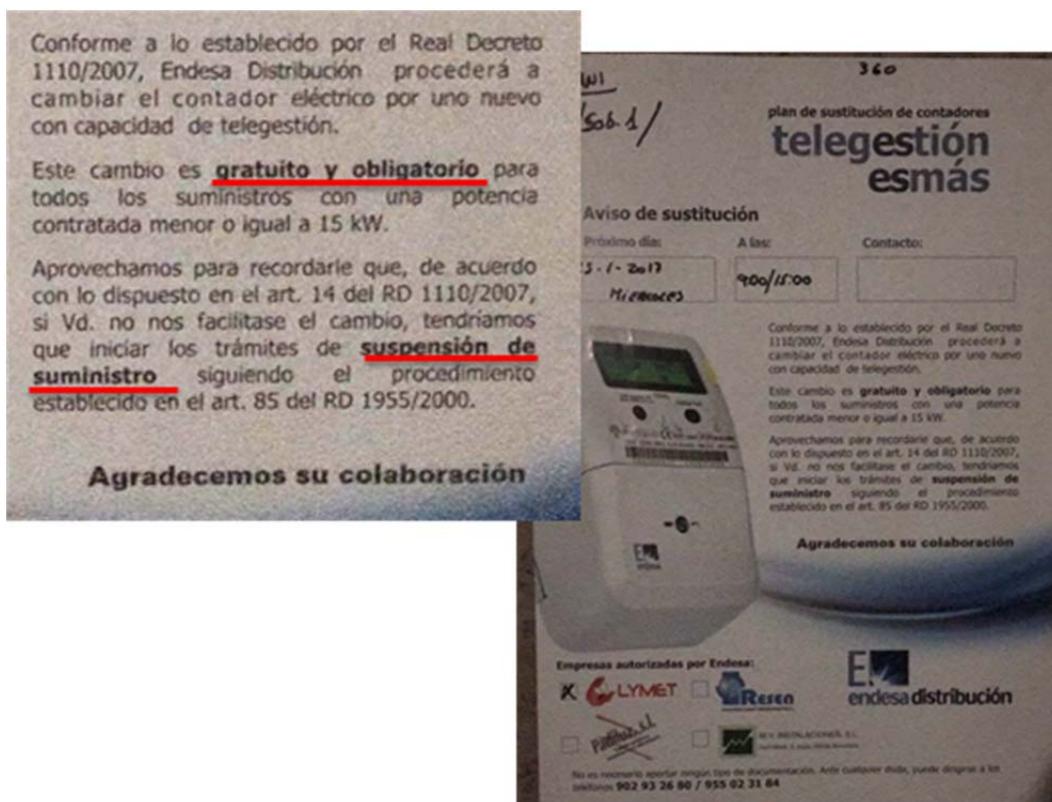
In some cases, like Italy, the replacement of the meters took place in the early 2000s, but it was done in response to a number of objectives, including combating fraud. However, as stated, if infrastructure is installed prior to its ability to enable future usage, it will probably have to be installed again shortly after. Italy is already having to replace the meters it installed with new ones that offer interoperability and facilitate access to their information.

- **The freedom of choice of consumers and users was inhibited**

<sup>2</sup> Figure 4.12 (page 50) of the study prepared by Dr Pep Salas ‘Smart-Meter Data Access and Usage’.

The decision made by state authorities meant that **users could choose neither the investment (device) nor the time at which it was to be made** (the figure below shows a service suspension notice). It should also be stated that suitable information was not issued to consumers with respect to the options available to them at that time (rental or purchase) and the price that would be applied to them could be greater than the actual cost of these meters. In short, **economic dependence on the distribution company was imposed on the user/consumer without the ability to choose.**

Figure 2. Examples of notices posted by Endesa Distribución in residents' buildings, stating the requirement to facilitate the replacement of their meters or suffer temporary suspension<sup>3</sup>



Additionally, Endesa Distribución's customers (94% of users in Catalonia) were not able to choose the new device to be installed. Endesa applied its own Meters&More protocol, which was only opened once the process for the implementation of the new meters had advanced, meaning that initially only its own meters (ENDESA-ENEL) were compatible with this protocol.

In summary, **the described action limited the ability of users to choose (i) when to change their meters, and (ii) the specific model to be installed with the associated technical limitations** (Catalonia was especially affected).

Accordingly, **competition was limited in the area of smart meters**, given that the monopoly that owns the network decided the protocol and the specific model of device to be installed. This situation, which took place in 2012, contrasts with that which took place in other

<sup>3</sup> Figure 4.4 (page 39) of the study prepared by Dr Pep Salas 'Smart-Meter Data Access and Usage'.



regulated sectors, such as telecommunications, in which, some years ago, the regulator imposed upon the telephony company that owned the network the obligation to use a universal communications standard that would enable compatibility with domestic telephone equipment from different suppliers, while the user could freely decide to install or rent this equipment.

However, at the same time, **smart meters are a key element of the development of new data processing markets** and, *insofar as the installed meters do not meet the technical characteristics required* for this new potential use, competition is also limited in these new markets. To a certain extent, **the birth of new markets is hindered**.

**Users** are essentially **captives** who are forced to pay for meters – even though it was not their decision to replace them, their electricity bills showed a corresponding increase (the change was not free of charge) – that, far from offering them new, modern options, retained technology that did not allow them to benefit from new business models that would be based on these data. **For example: (i) the meters are not equipped to intercommunicate with household appliances**, which would enable the washing machine to be switched on when energy is at its cheapest or identify the need to replace an appliance in accordance with its consumption curve, and **(ii) social welfare applications cannot be developed** to monitor the activity of a specific home in real time.

It is an **apparently modernising change that has become an entry barrier to new business models and**, therefore, to **new competitors**; allowing companies in the sector to maintain their pre-eminent position.

### 3.2 Limits on Information Access and Quality

As the Catalan Competition Authority has already indicated (in the study 'The Data Economy. Challenges for Competition'), data may be a basic or essential element for certain business models.

- **Limits on information access**

As the first figure shows, **in Spain it is not easy for third parties to access data about users' consumption, even with their explicit permission**. As the image depicts, there is no technical justification to not facilitate third-party access, given that many other countries have allowed it (Denmark, Norway, the United Kingdom, the Netherlands, Finland, etc.). Moreover, economically, simpler third-party access would make it easier for the cost-benefit analysis of the meter change to have a positive result.

In the state electricity market users rarely change company. This can easily be borne out by looking at one's own environment. One of the reasons is that, in an area where the product is homogeneous (electricity), price is configured as an especially relevant element.

However, it is not easy for users to receive cheaper offers from rival suppliers if these competitors cannot access the users' information to formulate proposals that better suit their needs. This much was stated by the head of the United Kingdom's competition body at a recent conference (<https://www.gov.uk/government/speeches/david-currie-on-the-role-of-competition-in-stimulating-innovation>).

- **Limits on access to quality information**

It would also not be sufficient to enable third-party access if the information to be obtained is of low quality (for example, if these third parties cannot determine the power peaks of a given user).

Similarly, not having quality information also limits the possibility of offering different services to users (for example, if third parties that provide solutions for smart homes only receive information grouped by hourly consumption and with a week's delay, this information's usefulness with respect to when the washing machine would automatically have been switched on to consume less electricity is diminished).

It should be taken into account that in Spain the regulations only allow access to consumption data after a period of one week. This represents a great difference with respect to the one- or two-day delay implemented in other European countries.

Figure 3. Data reading frequencies and days of access delay <sup>4</sup>

Estat membre	Responsable de la mesura	Freqüència de la mesura del valor de consum	Màxim retard en l'accés de les dades
Àustria	DSOs	15 minuts	1 dia
Dinamarca	TSO	15 minuts	1-2 dies
Finlàndia	TSOs	Horàriament	1 dia
França	DSOs	10min / 30min / 60min	1 dia
Irlanda	DSOs	30 min	1 dia
Països Baixos	DSOs	10 seg. temps real / 15 min. remot	1 dia
Noruega	TSO	Horàriament	1 dia
Estat Espanyol	DSOs	Horàriament	7 dies
Suècia	DSOs	Horàriament	1 dia
Regne Unit	Licitació	10 seg. temps real / 30 min. remot	1 dia

Consequently and also to a certain extent because **the meters that were installed were not technologically advanced enough and there were no precise regulations applicable to third-party access to meter information or to the quality of this information, it is difficult to create new markets that satisfy users.**

### 3.3 Unclear Structural Separation in Data Management

The fact that electricity distributors were assigned the task of replacing electricity meters is also significant.

The assignment of this task to the distributor may generate a certain amount of confusion for users, who are required to access their data through a distributor that has practically the same trading name as the retailing company and often the same appearance (logo, image, corporate colours, etc.).

<sup>4</sup> Table 4.2 (page 55) of the study prepared by Dr Pep Salas 'Smart-Meter Data Access and Usage'.



Figure 4. Image of web access to Endesa's distribution and retailing companies <sup>5</sup>



This possible confusion is relevant in the area of data because users are required to gain access through the distributor's portal, which as can be seen, is very similar to that of the retailing company.

It should be highlighted that the assignment to the distributor of data management cannot be justified either and that in other countries it is the transmission company, as the operator of the system, or an agent independent of the electricity market – which does not have these associations – that is responsible for replacing meters and, above all, for information management.

Consequently, **the assignment of this task to the distributor may cause competition problems in the area of electricity retailing due both to the risk of the distributor seeking to benefit its retailing branch and the confusion generated** among users. Moreover, there is the risk of transferring a preponderant market position in the area of electricity distribution to sectors (or new business models) based on the use of the data obtained from meters. The most direct example of this is the electricity retailing market.

<sup>5</sup> Endesa distribution access <http://www.endesadistribucion.es/es/Paginas/Home.html>; Endesa retailing access <https://www.endesacientes.com>.

## 4. PROPOSALS

The study also contains a series of **proposals** to increase the well-being of consumers and users by improving the operation of the current markets and contributing to the development of new ones.

### 4.1 Clarify and Assure Structural Separation between Distribution and Retailing Companies

One of the main problems revealed by this study consists of the assignment of the management of the information captured by the devices to the distributors in a Spanish market that is clearly concentrated in and made up of business groups that combine regulated and deregulated activities; that is, it is the distributors that initially have the information and subsequently have to make it accessible.

This results, on the one hand, in **user confusion**, and on the other, in the **risk that the distributor may self-servingly favour a retailing company from its own group** to the detriment of other competitors.

- **More clarity in the separation of electricity sector activities**

An initial solution to these problems would consist of **achieving greater differentiation at least in terms of nomenclature and image** (otherwise reputation or brand image, due to having control of the network or of the information captured from the meters, could be transferred to a different segment: retailing).

Additionally, it would be necessary for public authorities to be more proactive (regulatory development of legal provisions and verification of their compliance) to guarantee neutral third-party access to information. That is, retailing companies competing for example with the ENDESA retailing company should be able to access the information held by the ENDESA distribution company at the same time.

- **Guarantee neutral access to data**

There could also be an **obligation for distribution companies to implement APIs** to electronically facilitate easy and instantaneous access to the information they hold.

### 4.2 Creation of a Neutral Data Operator

One of the proposals formulated in the study consists of the possibility of opting for the creation of a Neutral Data Operator that would operate in a manner similar to the data access mechanisms in place in countries like Denmark.

Specifically, this option would consist of a **neutral operator that would centralise the data collected by the various distributors**. This task **would make it easier for third parties to obtain information in equal and neutral conditions** (it would no longer be necessary to seek this information from each individual distributor, rather it would be sufficient to submit a request – always with the user's consent – to this Neutral Data Operator). It could be operated by a current agent, such as REE, as the operator of the system, or created ad hoc.



Additionally, insofar as it would be a 'neutral' operator, that is, without any stake in any market, **no preferential treatment would be given** to any of the various requests submitted to it.

#### 4.3 Incentivise the Appearance of Independent Aggregators

As initially stated, access to data may be a key factor in the introduction of new agents and new business models.

In this sense, data access is essential for the appearance of aggregators. This is why the last proposal formulated in the study consists of ensuring that this is possible.

Specifically, it would be necessary to regulate this figure, whose objective is to achieve **more flexibility in the system using distributed energy resources and assume technical and financial responsibility in this respect**.

Therefore, this figure could, on the one hand, negotiate with the corresponding distributor **the efficient management of the network** (for example, guaranteeing that a group of residents – those served by the same electrical substation – do not demand energy peaks that exceed a certain level through the installation of storage batteries) and, on the other hand, manage the direct sale of energy between residents and also act as their representative before the operator of the system.

It is a **figure that could potentially be a game changer**, given that it would not only improve the management of the traditional electricity sector, but also decentralise the operation of the electricity sector through the promotion of methods to make investments in distributed generation profitable (using solar panels for example), given that the produced energy could be sold through the demand aggregator responsible for supplying residents.

The Catalan Competition Authority (ACCO) has already referred to this alternative, within the framework of the 'Observations on Electricity Self-consumption and Competition' (OB 22/2016).

One of the risks cited by the author of the study on 'Smart-Meter Data Access and Usage' is that it is not being developed in the free market and the distributor is assigned the deregulation tasks that this independent operator (aggregator) could develop.

In other words, **there is no reason to replicate in the digital context the regulations applied to the physical context, given that the conditions are different (there is no natural monopoly)**. More specifically, the study 'Smart-Meter Data Access and Usage' indicates the risk arising from the EC regulatory package '**Clean Energy for All Europeans**' (**Winter Package**), which is still in the approval process, insofar as it provides for the possibility of national regulators eventually undertaking this assignment.

## 5. CONCLUSION

In view of the previous considerations, the **ACCO** will remain **vigilant in order to guarantee that citizens receive the maximum benefits of innovation** directly or indirectly arising from information about electricity consumption, which could consist of: (i) **improved economic savings** (for example, domestic appliances that switch on when energy is cheaper), (ii) **improved system efficiency** (if users themselves can buy and sell energy, distribution losses will be lower), (iii) **improved service variety** (social services can detect anomalous behaviour and quickly react when for example an elderly person who lives alone switches on



the light every morning at 7 am but on a particular morning has not registered any consumption by 9 am).

**And, of course, in this sector users can become producers (generators)** – as the ACCO has already stated in its observations in **'Electricity Self-consumption and Competition'** (OB 22/2016) **and in the studies on the collaborative economy** 'Peer Transactions (P2P) and Competition. A Step Forward' (ES-10/2016) and 'Peer Transactions (P2P) and Competition' (ES-07/2014), in which information is also essential, given that it will enable the management of the sale of produced energy to other residents.