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The French Electricity Smart Meter Reconfiguring consumers and providers

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Introduction

Electricity meters define and reveal the commercial relationship between customers and energy providers and have a critical role in enabling calculation and payment. To date, there is very little research on the meter's role in this relationship. Studies in the history of technology show that water and electricity meters, developed in the late nineteenth century, were designed to determine the rate of consumption as accurately as possible, and to combat fraudulent practices. This ambition reflected engineers' conception of the user as someone who might tamper with the supply in order to reduce their bill (Chatzis, 2006). When installed directly in a customer's home or business premises, the meter is a tool that helps energy providers and distributors manage the electricity grid,¹ control customers and determine how much each should pay (Coutard, 1999). To date, studies of metering tend to focus on the role of the engineers who designed these tools, on public policies and institutional debates (Klopfert and Wallenborn, 2011), or on public acceptance (Hess, 2014), rather than on what the metering of electricity involves in practice.

The growing social and political significance of the meter and of metering is the focus of this chapter. At different points in history, the standardisation of payment for domestic consumption as recorded by meters and smart meters has triggered social protest and raised questions about the ethics of monitoring homes and individuals. For example, the introduction of collective water meters in co-owned buildings caused tension, because it was associated with an allegedly unfair system of paying for water (Rabeharisoa, 1991). More recently, two European directives (2006 ; 2009) encourage member states to test and implement instruments and systems capable of producing regular bills based on actual consumption and not on six-monthly readings of consumption data. As a result, new technologies have been developed and many countries are now adopting 'smart meters'. In France, these new electric meters represent a significant advance in functionality, enabling automatic transmission of consumption data to computer servers, remote control (on/off, disconnection of service, change of voltage, etc.) and remote monitoring of electricity grids and their dysfunctions.

Up to the late 2000s, electricity meters were relatively straightforward devices that passively recorded consumption. The introduction of ‘new’ smart meters coincided with new ideas about the role of metering related to the ambition of liberalising energy markets and growing interest in the ‘smart grid’. In this context, meters acquired a range of new, more active roles. One of these was to provide information to help domestic and industrial consumers manage and perhaps reduce their electricity or water consumption (Barraqué, 2013). In the electricity sector, additional measures were required to turn the traditional meter into an instrument that consumers could use for this purpose. In practice, this meant adding new digital functions, including a remote display, energy management options, a smart energy box and related digital applications. The design of these digital devices was in part influenced by the goal of providing customers with new possibilities for self-management, and of offering ‘services’ not possible with previous generations of electromechanical (Figures 13.1 and 13.2) or electronic meters (Figure 13.3).

In France, since 2005 and still today, there was significant debate and much negotiation about the precise definition and function of smart meters. These discussions were informed by industrial and commercial experiments leading up to the decision to roll smart meters out across France. Under the current plan, a total of 35 million traditional meters are due to be replaced by ‘smart’ meters over the next ten years (Danieli, 2014 ; 2015). Since 2015, debates about metering have intensified alongside this very significant programme of renewal and investment.

This chapter focuses on how meters are used in practice by professionals who are in direct contact with customers, engineers and consumers.² It is based on empirical data collected through observation and interviews conducted in 2014 and through four years of close interaction and research within the ‘Research and Development Direction’ of the French energy group EDF (Électricité de France). Ongoing experimentation with the smart meter – called Linky (2010–2015) – provided an opportunity to examine the development of the electricity meter in the digital age. As part of this work, I talked with just over 90 individuals, from design engineers to newly equipped customers, with whom I held long (one- to four-hour) semi-structured interviews. The Linky meter (see Figure 13.4) was created in 2008, first tested on a large scale in two regions of France (Rhône-Alpes and Centre-Val de Loire), mainly in 2010 and 2011 and subsequently installed by the national electricity distributor, ENEDIS.

By 2015, the tests had involved 250,000 customers, some of whom were located in secondary experimental smart grid areas (PACA, Ile-de-France, Midi-Pyrénées). In following this large-scale experiment, I spoke with project teams in both the strategic departments of the national energy provider and distributor in Ile-de-France (EDF LAB, legal department, marketing, metering) and in the operational departments (technical and commercial) that were in contact with customers in the areas in which the experiments took place. My research was not limited to an analysis of the internal functioning of the energy providers. I also investigated groups whose role has often been decisive, especially as regards battles over equality of treatment, fuel poverty and access to energy. These include organisations providing information on energy, urban authorities’ energy services, energy syndicates and consumer unions. Other interviews took place in customers’ homes. I observed the service relationship between customers and intermediate agents at call centres (such as tele-advisers) and went with meter readers³ and technicians to customers’ homes. Together, these materials provide valuable information on the actual experience of using a smart meter and on its embeddedness in professional and family environments.



FIGURE 13.1 © AGIP/Bridgeman Images: The French electromechanical meter, introduced into homes in 1963.

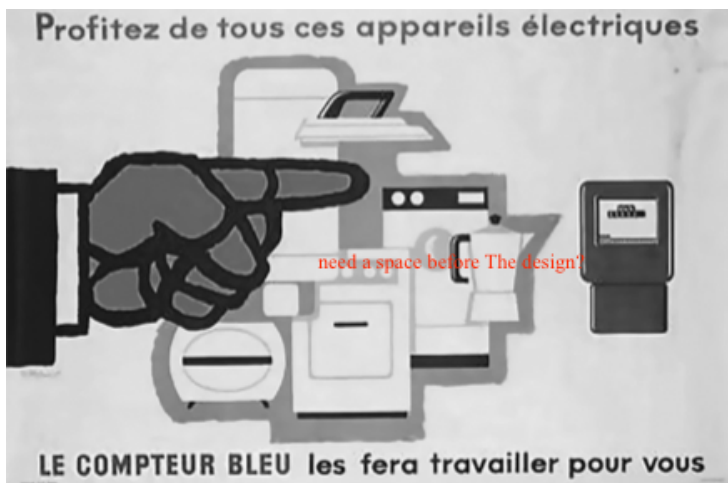


FIGURE 13.2 ‘Enjoy all the electrical appliances. The blue meter will make them work for you’. Commercial advertising from the French energy supplier EDF. Illustration by Bernard Villemot, circa 1964, © Bibliothèque Forney/Roger-Viollet.

Examining the evolution of meters in the digital age depends on paying particular attention to the figure of the customer that professionals in the energy industry construct and mobilise in defining the service relationship. How are the roles of domestic customers and of energy professionals imagined and understood and what features shape innovation processes regarding the smart meter? To what extent did the changing conception of the smart meter and its users correspond with the ‘real’ uses of this technology? The first part of this chapter provides some clues by examining the experiences of those who work in back-office departments, who are not in contact with customers and for whom the smart meter is a an instrument which represents the

results of customers' actions as revealed by the energy they consume. The second part focuses on professionals and experts who are in direct contact with customers. These experts construct and work with a very different figure of the customer: this being one who needs disciplining, who is potentially 'dishonest' or 'not interested' and who has to be made to pay their bill. In bringing these experiences together, I conclude with a discussion of the different routes through which definitions and uses of the smart meter have been stabilised.



FIGURE 13.3 Electronic meters, introduced into homes in 1990 (right, at the top). We can also see one smart meter Linky (left). From 'The saga of the meter', electric meters in the exhibition showroom of the French electric distributor Enedis in Paris. Personal photograph.



FIGURE 13.4 User manual for the new generation of smart meter ‘Linky’ launched in 2010. Personal Photograph.

Creating an informed consumer

My interviews highlighted the fact that several groups in the energy field pictured customers with smart meters as active controllers and managers of their own electricity consumption. The representatives of consumer unions, the heads of the energy missions in the regions in which the experiments were run and the design engineers who tested and developed customer services talked as if the smart meter was primarily designed as a tool for the customer. What fostered this common perception?

These representations of the domestic electricity meter and these interpretations of its ‘use’ stem from developments over the past ten years and are closely associated with specific ideas about the smart energy economy. In this context, smart meters are often presented as one of the building blocks required for the full liberalisation of the energy market. Smart meters are, it seems, a necessary precondition for fully informed consumer choice – a concept associated with arguments that have been used to justify the opening up of public utilities to competition (Poupeau, 2009). The smart meter is also associated with environmental issues – apparently offering consumers the information they need to manage consumption and act responsibly given concerns about the exhaustion of fossil fuel resources, climate change and greenhouse gas emissions. In the words of the smart meter brochures given to customers when the device is installed in their home or business:

*‘I will become a consum-actor, monitor my consumption, understand it better and take steps to control it’.*⁴

Many claims about the benefits of smart metering are based on a behaviourist model, which assumes that if people really knew how much energy they were using they would change their consumption. Related to this, smart meters typically come with a number of offers: rates can be

tailored to suit a user's consumption profile, detailed consumption statements are possible, there can be alerts and automated control of electrical appliances, including remote control of domestic heating. However, one practical difficulty is that the data that is constantly produced by a smart meter is not systematically accessible or easy to interpret.

Roughly 50% of meters are situated outside the main living or working space of a customer's home or business – they are to be found in the cellar, on an electricity pole, in a cupboard containing the building's incoming supply, or located outside the building altogether. In order to transform the smart meter into an interface that can be used for monitoring consumption, service providers have had to add new digital functions to allow ordinary users to learn about and better manage their energy consumption.

The idea here is that the meter, together with this information interface, will prompt customers to install less energy-hungry appliances and devices, to shift the use of some household appliances to the night and to install renewable energy systems such as solar panels. To reiterate, the social construction of a meter that promises to be useful to the customer is part of a proactive policy of developing energy markets and uses. By taking advantage of digital technology and the ability to make new rates and energy services available, energy providers (EDF, Direct Energie, etc.) have sought to offer different and competing services – a feature that has been a driver behind the construction of new market segments (Caron, 2015).

As outlined below, these ideas and ambitions acquire a material form. By focusing on how the various technical elements of the smart meter are negotiated we can see how the modern electricity meter materialises the role of energy companies (providers, distributors, and firms in the industry) and the relationship between these organisations and their customers. In studying these aspects of meter design, it is important to notice that the engineers responsible for developing smart metering systems, are, also responsible for devising technical solutions that facilitate the transmission of energy data to the household. These include the connection of an energy box; a USB port on the meter; 'smart sockets' in the home that can calculate the consumption of a specific device or appliance or control it remotely (e.g., remote programming of a heating system); radio transmitters to improve data transmission between the meter and the home and mobile applications.

These engineering solutions are intended to encourage users to develop competences and become, so to speak, technically-skilled managers. They are also intended to foster a sense of social distinction, and to situate juggling with watts, Euros and a personal library of energy data as something that can be fun. According to the technical experts I interviewed, providing customers with data on their own consumption makes sense, not only economically, but also ethically. It is true that meter readings are used for billing, but the engineers with whom I spoke insisted that ownership of the data remains with the customer. During our interviews, they referred to the 'customer tele-data' function, a sort of computerised calculator embedded in electronic meters and now in smart meters as well. The tele-data function means that consumers can easily find up-to-date information about their consumption. This is not new. Data on personal consumption was accessible online when electronic meters were introduced in the 1990s. However, as the engineers pointed out, customers rarely used this information, nor was it exploited commercially.

With the introduction of more efficient information systems and in the experimental age of smart grids, there are new incentives to manage consumption data and to make it available. Again, the idea is that providing households and businesses with detailed information about the energy consequences of daily practices will encourage them to 'optimise' their energy use in real time.

The idea is to give you what's happening right now: we work on the consumption with watts. [...] The idea is to show that you may be able to save and to change your subscription!

(Junior engineer, 18 March 2014)

The idea that the meter might be useful from both a commercial and a customer point of view is not new within EDF's design department. It follows on from the already established tradition of providing different tariffs and energy services linked to peak and off-peak hours, along with options for an interruptible supply at times of peak-demand. Over the past three decades, the EDF LAB has used customer panels to test the impact of many home automation projects on domestic energy consumption (including tests with Minitel, computers, dedicated terminal, smart phones, etc.) and has used these insights to inform meter design.

Other organisations are also keen that consumers have access to useful, accessible and up-to-date information. For example, local collectives involved in energy issues (local consumer unions, energy agencies, municipalities) have played a leading role and national authorities (government administrations, national consumer associations) have insisted that a new consumption monitoring device (an in-home display) is included with every new smart meter. As these exchanges indicate, the meter remains the focus of ongoing tension between the discourses and ambitions of providers, on the one hand, and the 'interests' of consumers, on the other. For example, consumer bodies are concerned about the commercial purpose of smart metering and the details of meter design.

Since ENEDIS puts forward the fact of saving energy [by means of Linky meters], can't we manage this a bit better, with a transmission of data on a device in the kitchen, that alerts one to excessive consumption?

(Representative of a local consumer union, 15 May 2014)

Suggestions like these have been reinforced by elected councillors concerned about future votes and the persistent challenge of fuel poverty. From their perspective, the widespread introduction of smart metering is a project that is costly for society and is not something that customers feel is intended for them. On the other hand, some authorities are interested in the potential for using smart meter data to defend citizens' interests.

I think that Linky can really be an energy-saving tool, provided that users are really given access to all their data, and that public authorities work together to ensure that people are able to decipher them.

(Head of the energy policy of a local authority, 2 July 2014)

Although they differ on how to achieve this outcome, EDF LAB, consumer bodies and energy agencies share the objective of creating a new type of consumer, one that actively monitors his or her own consumption.

Despite this discourse, attempts by design engineers and consumer representatives to redefine the smart meter as a tool for the customer have been limited. This is in part because the definition of the meter's purpose (and its technical features) also depends on standards which reflect future commercial uses, as discussed in institutional and political arenas. To date, the capabilities of the smart meter have been strongly influenced by the energy regulator, the *Commission de Régulation de l'Énergie*, which validated a functional specification designed to enable the new organisation of energy markets, before submitting the decree (for widespread smart metering) to the government. According to this specification the smart meter has three critical functions. As discussed above, one is to provide information on energy consumption to ensure that consumers' bills are accurate

and to prevent fraud or financial exploitation. A second concerns ‘upstream measurement’ and relates to ENEDIS’s management of the electricity grid. The third goal is to generate information relevant to the energy provider and the manufacturers of household appliances and devices, to enable ‘downstream management’. These somewhat conflicting ambitions are materialised in the form of smart meter design. They also matter for the changing relation between consumer and provider.

Keeping the customer at a distance

Smart meters have an important but often overlooked role in reconfiguring the service relationship between consumers and energy providers. In particular, providers hope that smart meters will enable them to reduce direct interaction with their customers. Meters and circuit breakers (which cut off supply) are important when people move home or fail to pay their bills. In both cases, several actors are involved. For example, when someone moves into a new home, customer advisers (on the commercial side of the organisation) negotiate a contract and then leave it to technicians and meter readers to take care of the technical management of electricity provision, according to the contract.

In practice, meter design proves to be important for the day-to-day management of customer contracts. This becomes clear when observing the role of electromechanical and electronic meters, circuit breakers and power limiters at the time of the change-over to smart meters.

The job of the operations manager is to process electricity contracts and changes which are either requested by customers (different rates, connection to the network, repair services) or by suppliers (reading meters, cutting off the service due to unpaid bills). This is routine work, but in rare cases, more individualised treatment is required. For example, the provider might need to ensure that the conditions of the electricity contract are being complied with. Other problems might have to do with the level of power specified in the contract or with gaining access to read the meter. When the meters are electromechanical or electronic, such issues often lead to substantial delays in the payment of bills. The managers I interviewed all agreed that most such difficulties were encountered in private houses in rural or semi-urban areas and usually in properties equipped with electromechanical meters. In response, one solution is to introduce smart meters with circuit breakers that limit the level of power supplied. This helps combat fraud and allows the supplier to identify complex cases (active meters without a contract, so-called ‘forgotten meters’⁵ or ‘abuse’ of the *Accès Libre Service* option which enables someone who has just moved to consume electricity immediately, during the first weeks after moving in, before subscribing to a commercial contract).⁶

Putting these policies into practice and installing new meters increased the number of face-to-face encounters between technicians and customers, buildings and equipment. Managers mentioned that the search for ‘forgotten meters’ that were not recorded in customer files involved careful network mapping. They also spoke about the difficulties that technical agents encountered when customers were absent – sometimes interpreted as a deliberate attempt to avoid having their meter read or their electricity supply cut off when they failed to pay their bill: ‘There were cases where they [the customer technicians] went there eight times but there was no one home’ (Former technical agency manager, 2 April 2014).

Despite a huge effort to reduce ‘abuse’ of the *Accès Libre Service* and detect forgotten meters, deviant cases and net financial losses continue. From this perspective, the smart meter represents a means of normalising electricity contracts and customer relations. At present, technical service engineers (who go to people’s homes) are not allowed to talk about bills and tariffs with customers,

even though the metering equipment on site – used for measuring the voltage etc. – sometimes requires explanation and even though the meter and the circuit breaker on site all have to be calibrated with payment records. The liberalisation of the market and reforms in the sector over the past 20 years have had the consequence of prohibiting technicians and meter readers (of the energy distributor ENEDIS) from ‘occupying the field’ of the energy supplier – a role currently fulfilled by several competing firms. In this increasingly complex environment, the smart meter promises to reduce interaction with the customer and thus simplify and cut through these relations.

When positioned in these terms, the meter figures as an instrument of customer control. In this guise, it helps to reproduce a largely negative image of the customer who is suspected of misappropriating electricity and impeding its daily management. My interviewees talked about ‘bad’ customers who do not correspond to the firm’s expectations and who have developed inappropriate expertise regarding the metering equipment (the meter itself, the circuit breaker, even connection to the grid) and their contract with the provider:

Some of them play on the fact that we leave the electricity supply connected for a while. We can leave it for up to eight weeks. And some of them take advantage of this and push it even further. (Head of the Linky project, 12 May 2014)

Telephone advisers based at the national provider’s call centre are responsible for taking incoming calls from new customers. Since this service relationship is established over the phone, it is difficult to detect problematic cases, especially when the meters are electromechanical or electronic. This difficulty is compounded by uncertainties about the state of the equipment that supplied the data on which the bill is based: Does the problem stem from wear-and-tear of the equipment or from fraudulent manipulation by the customer or by an electrician? In the absence of evidence from technical services, telephone advisers have no option but to give customers the benefit of the doubt: ‘It’s tricky to say to the customer ‘Sir, you’ve cheated’. No, one just can’t say that’ (Call centre tele-adviser, Linky expert, 16 May 2014).

The smart meter offers new possibilities for telephone interaction, for the organisation of front-office work and for discussions between sales agents, technical advisers and customers. For example, Linky meters can be remotely controlled by EDF sales agents who can involve customers in setting them up and activating them and who can offer informed advice over the phone. This contrasts with the need to plan a technician’s visit to the customer’s home as is the case for people who have electromechanical or electronic meters. In one of the experiments I studied, the creation of a new telephone-based technical agency involved reorganising technicians’ and the meter readers’ rounds and a gradual change from face-to-face interaction to remote intervention, presented as being at the customers’ request:

When you have customers who want changes to the contract, [earlier meters] demanded from those who work [that they take] a half-day’s leave [to be at home to receive the agent] ... [By contrast, smart meters avoid this appointment] ... [these] are really new services that are being offered to customers. (Head of the Linky project, 12 May 2014)

Another challenge for operations managers has been to motivate technical agents, especially when having to cut off supply because of unpaid bills. Such encounters are often a source of anxiety for the technicians themselves. Even in ordinary situations, it is necessary to limit the risk of assault and avoid arguments with customers, for example, if they refuse to grant access to the meter or

obstruct efforts to disconnect. In some rural areas and in sensitive urban areas, meters are sometimes located in basements or in areas where illicit activities go on. In such circumstances, technicians and meter readers have to negotiate carefully with customers and intermediaries (caretakers and neighbours) to ‘open doors’ and sometimes have to install a tele-reading device or rely on ‘confidential readings’ transmitted directly by the customer, called a Relevé Confiance.⁷ In many such cases, it is difficult to really speak of a ‘customer relationship’:

We have customers, they’ve got more than nine absences for readings. That means that in five years we haven’t read their meter once. And we write to them, we demand appointments, we send them registered letters.

(Technical customer manager for meter readings, 9 July 2014)

Often, there is little possibility of checking problems in situ, at the customer’s address. The diffusion of the smart meter facilitates remote verification of customers’ reported meter readings as well as the technicians’ activity. Where there is a smart meter and where supply has to be cut off, the technicians are obliged to inform the customer on site, but can then proceed to request the back office to disconnect without having to perform the act themselves. This is an important development in that disconnection is a contested topic that gives rise to competing interpretations and reactions. Some technicians defend the principle of disconnection to prevent customers from going even deeper into debt, whereas others argue that more should be done to maintain access to what they see as an essential service. Smart metering does not change these debates, but it does change the way they are positioned within the organisation.

Smart meters also matter for how complaints are handled. Customers with electromechanical and electronic meters often contact the call centre to express dissatisfaction – for example, about waiting for a technician to arrive, or to contest estimated bills. These calls are a source of stress for tele-advisers who resort to a string of arguments to justify technical and commercial actions. As I observed first hand, the installation of smart meters also generated many conflicts, but once installed, they appear to have reduced complaints or made them easier to resolve, perhaps because technical managers and EDF tele-advisers have all the relevant data to hand.

In addition, smart meters change the scope for ‘fiddling’ and fraud. Electromechanical meters are fitted with security seals designed to stop customers tampering with them. A broken seal or window (which protects the numbers representing the energy consumed) or holes in the case are evidence of attempts to open it, but are not necessarily proof of fraud by the customer. In my interviews, design engineers explained that electronic meters had made fraud more difficult. Smart meters take this a stage further in that they record data in the event of an unauthorised attempt to open the case.

Finally, the smart meter is capable of limiting the electricity supply – a feature that can be activated remotely by the provider’s tele-advisers as soon as a contract has been cancelled, or when someone moves house. For example, within 24 hours, the available power can be reduced to one kilowatt hour (rather than remaining at the level for which the previous occupant had a contract). This restricts consumption to a minimum number of devices when the new occupants move in, thus encouraging them to sign up for a new contract and pay for their electricity right away. In practice and in response to complaints, telephone advisers tend to be more relaxed about implementing this feature. As described, some are willing to let customers move in and subscribe to an electricity contract without having ‘suffered’ a limited power supply for the first few days of occupancy.

As all these examples show, the meter is pivotal in mediating between consumers and providers and in co-configuring the respective roles of each.

Conclusion

In this chapter, I have discussed the rise of two imagined types of smart meter enabled consumers: on the one hand, there is the informed, rational consumer who adapts his or her behaviour when provided with more and better data. On the other hand, there is the cheating, troublesome consumer who is capable of taking advantage of the new technology by circumventing the law and obstructing the service provider.

From the provider's point of view, smart meters figure as increasingly useful instruments with which to reduce oral and written complaints and to ensure that bills are paid. Proper management of the meter and of the circuit breaker are important in achieving these objectives. However, these goals have little or nothing to do with the parallel aspiration of creating a rational and responsive consumer. My analysis of recent experiments with the smart meter (2010–2015) generates two major findings, both of which reflect this tension.

First, attempts by design engineers and consumer representatives (unions, energy syndicates, etc.) to redefine the function of the meter have had limited success. The closer we get to actors who are in contact with the customer, the more the meter is perceived and used as a tool for regularising customers' files and for optimising procedures and processes for distributors and service suppliers – and the less the meter figures as an instrument of energy transition or as a tool that helps consumers monitor and adapt their consumption.

Second, this suggests that despite the official rhetoric, the smart meter is primarily important as an instrument with which to control and manage contracts, including disconnection, detecting fraud, identifying worn-out equipment and limiting encounters with difficult customers. From this point of view, the smart meter increases the distance between customers and suppliers – the site of the meter is no longer of defining importance, nor is it the key physical interface: not only are smart meters harder to tamper with, they can also be 'read' remotely and they enable new functions, including limiting supply. As a result, the smart meter calls for new models of contract management and 'back office' organisation, meaning that the roles of technicians and meter readers are redefined.

Apart from what it reveals about the customers' limited role in the detailed technical design of the smart meter, this case study shows how the meter materialises and relates to broader organisational changes in French energy provision. As described here, the smart meter is an active agent in defining and differentiating between the roles of professionals (suppliers, distributors, technicians) and customers. Its capabilities are defined and framed by the rules of the Commission de Régulation de l'énergie, which clearly distinguish between commercial, public and private roles in the energy market. As such, smart meters are designed to fit, and fit in with, a regime in which a commercial enterprise provides energy (in a now deregulated sector), in which various firms are involved in distribution (a regulated sector) and, in which customers are expected to manage and monitor their energy demand.

Notes

1 For example, in the case of failure in the electricity grid, detected by way of active or inactive electricity meters.

2 The survey draws on Ph.D. research conducted under a research convention between EDF and Université Paris Est on innovation processes and controversies concerning smart meters in France and on the social worlds that they mobilise, from design engineers to customers in newly equipped domestic environments. New research was also organised in 2016 to study the evolution of these

debates. I wish to thank the reviewers Magali Pierre and Isabelle Moussaoui, the translator Liz Libbrecht and the director Olivier Coutard (LATTS, Université Paris Est). I thank Elizabeth Shove for editing this chapter. An earlier version will be published in French in Moussaoui, I. and Pierre, M. (2016) *Pratiques sociales et usages de l'énergie*. Paris: Lavoisier. Before an earlier version : I am particularly grateful to Cécile Caron (GRETS, EDF LAB) who provided enormous intellectual support during the PHD studies and publication work.

3 The meter reader is responsible for two annual cycles of compulsory meter readings at the customer's home and for transmitting consumption data as recorded by each electricity meter, whether it be electromechanical (Compteur Bleu) or electronic. In the latter case, the reading can be automated by means of a remote reader often placed on the pavement outside. These data are then transmitted to the distributors and suppliers of electricity, to be used in drawing up bills. Note that most meter reading have been outsourced to private companies since the 2000s.

4 'Le compteur Linky et moi' ('The Linky meter and me'), ENEDIS brochure, July 2013.

5 These are meters that exist without any contract. The customer is able to receive electricity but is unknown to EDF and ENEDIS.

6 This is a facility granted by ENEDIS when a customer moves to a new home or new business premises. The new occupant can thus use energy provided through a contract with the previous homeowner, even when that contract has been cancelled. The electricity meter remains active and the new occupant has six to eight weeks to subscribe to a new contract with an electricity provider of their choice. Should they fail to do so within the prescribed time, an ENEDIS technical agent goes to the address and cuts off the supply without warning. There are cases in which the new occupants fail to subscribe to a new contract even after the eight-week period, without the supply being cut off and thus continue to consume energy without being billed for it, and sometimes without ever having to pay for it.

7 EDF's Relevé Confiance entails customers taking their own meter reading on the dates indicated on their bill if they are absent when the meter reading is to be taken. They then transmit this data directly to their provider, so that their bill reflects their actual consumption as closely as possible. Alternatively, they may tape a note to their front door, giving the meter reading.

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