

Mapping metering data access in Europe

September 2021



FlexiDAO

Mapping metering data access in Europe

Summary Report

Authors

Manuel Vidal Dominguez, *Energy market analyst*, FlexiDAO

Simone Accornero, *CEO & co-founder*, FlexiDAO

Emanuele Rossi, *Product lead*, FlexiDAO

About FlexiDAO

FlexiDAO is a cleantech startup based in Amsterdam and Barcelona. We provide software solutions and advisory to help companies achieve their net-zero goals and become true leaders of the energy transition.

We ceaselessly pursue our vision of turning 24/7 carbon-free energy procurement a widely-adopted practice, frontrunning the digitalization of the energy sector for a real decarbonization of the electrical grid.

We advocate for the introduction of an official granular certification scheme while providing solutions that any buyer can adopt today without disrupting its existing sustainability agenda.

Working within the existing frameworks and certificates - like GOs, iRECs, RECs, etc. - is particularly relevant to us. It is the reason why we partner with EnergyTag and all its members to make sure that our tracking systems for granular certificates is compliant with the existing regulations.

FlexiDAO has shown that it is possible to use **metering data** to guide corporate consumers on their renewable energy procurement journey, and to help them reduce their environmental impact and become energy transition leaders. Bold climate goals, such as net-zero carbon targets, also require energy to be truly decarbonised. The *digitalisation* of metering data can turn this underrated resource into something extremely valuable: the key to a data-driven **24/7 renewable electricity** procurement strategy for all.





Table of contents

Executive summary 5

Introduction 6

Background

Purpose of the paper

Why granular metering data is fundamental for corporates 8

Metering data access: state of the art 10

Review the european data exchange infrastructures

Main challenges & barriers

What to expect of the next 5 years

Recommendations 14

Annex 15

Crucial metering data access variables

Main findings per country

Executive summary

Electricity metering data is the new “gold” of the energy transition. Gathering granular metering data (i.e. at least hourly production and consumption settlement metering data) is key for corporate consumers to achieve cost reductions, mitigate both short and long-term risks and prioritise strategies that maximise emissions reductions and make a real positive impact. Data is also extremely important for service providers and consultants to be able to support companies on their renewable energy journey.

However, obtaining access to such data is not easy: expensive investments and high maintenance costs for hardware devices, data interfaces with O&Ms and producers as well as tedious negotiations with electricity suppliers are some of the traditional barriers.

Fortunately, Europe – with its high rate of smart-meter rollout along with already existing or planned data exchange infrastructures – is at the forefront of world efforts in metering data collection and exchange.

In this paper, FlexiDAO has mapped out the **availability of metering data in 18 European countries and the process of obtaining access to it** based on learning and knowledge collected as a result of FlexiDAO’s business activities on carbon-free energy traceability. **The results provide insights and recommendations to businesses on how they can leverage their right of access to consumption and production data** as a building block for 1) energy consumption monitoring, 2) financial performance monitoring of supply contracts, 3) hedging against volatile wholesale market prices and existing PPA positions, and 4) embracing new procurement strategies (e.g. “24/7 carbon-free energy”) to mitigate long-term risks and achieve zero emissions.

The paper shows that although Europe is at the forefront of the process, **only 3 countries out of the 18 analysed meet all the criteria required to allow consumers and their partners easy and cost-efficient access to relevant, granular metering data**. 8 of these countries present some kind of obstacle, 7 do not have a system in place, although data is available in some way, and 1 has no smart rollout plan in place at all. In addition, the

paper explains how, despite the limitations, corporates can start obtaining granular metering data through a few simple actions by using the services of companies such as FlexiDAO.

Decarbonisation of energy consumption is a long journey, and achieving 100% annual coverage of renewable energy is not the ultimate milestone. Any procurement strategy will depend significantly on gaining a deep understanding of how load coincides with supply and the surrounding grid. Metering data is the cornerstone to successfully completing this journey in the most cost-efficient way possible and with minimal risk.



Introduction

Background

Smart meter rollout

In this white paper, granular metering data is defined as *electricity production and consumption settlement metering data with at least an hourly frequency.*

According to national targets, 223 million smart meters will be installed in Europe by 2024¹, corresponding to a 77% penetration rate. This rollout is generating valuable data for all energy market participants and has the potential to unlock several monetary and environmental benefits for consumers. However, this potential still remains largely unexpressed and very few companies in the world have incorporated settlement metering data in their operations as a means of gaining a detailed, global understanding of their demand's hourly or even daily profile and the characteristics of their loads.

For this to happen, metering data needs to be accessible in an easy, digital, secure, free of charge, non-discriminatory way for all entitled energy market participants, including consumers.

For this reason, according to EU regulations², the consumer is the owner of its own metering data and has the right to access it, exchange it, and choose to grant access to it to eligible third parties by offering them explicit consent. Regulation (EU) 2016/679 states that the party or parties responsible for data management shall provide any eligible party with the explicit consent of the final customer, access to the data of the final customer. This process should be simple and non-discriminatory and relevant procedures should be made publicly available to inform consumers.

Corporate procurement of Carbon-free Energy

The unprecedented scale-up of renewables worldwide has opened up new opportunities for a growing number of non-traditional energy players in the corporate sector. Private companies, driven by falling prices, cost savings and long-term profitability, are increasingly sourcing renewable energy to meet their energy needs and power their businesses. With this shift, corporate procurement now accounts for 10% of total renewable energy procurement globally in 2019³ with a three-fold increase in the number of companies pursuing net zero targets in 2020⁴. The market for corporate Power Purchase Agreements has grown from just 0.1 GW in 2010 to 23 GW in 2020, a 230-fold increase in 10 years.

1 Benchmarking smart metering deployment in the EU-28 - Publications Office of the EU.

2 DIRECTIVE (EU) 2019/944 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU.

3 <https://about.bnef.com/blog/corporate-clean-energy-buying-leapt-44-in-2019-sets-new-record>.

4 <https://www.there100.org>.

The expansion of the corporate PPA market shows that, when it comes to buying renewable energy, best practices have evolved considerably over time, starting from carbon offsets, moving to Renewable Energy Certificates (RECs) and then the wide adoption of corporate PPAs.

Fuelled by the urgency for climate action, the latest emerging trend is the transition from annual procurement strategies – e.g. *matching facilities' loads on an annual basis with volumes of renewable energy and RECs* – to hourly procurement strategy, often referred to as “[24x7 carbon-free energy](#)” or “[100x100 renewable energy](#)” (100% renewable energy, 100% of the time), where a buyer attempts to procure sufficient carbon-free energy to match a given facility's load at every hour.

A key enabler for this evolution is most certainly data, which is enabling companies to better understand their energy needs, production profiles, market dynamics, manage risks, forecast volumes, etc. and ultimately giving companies the confidence and tools to adopt more sophisticated, if difficult to negotiate and manage, procurement strategies.

Purpose of the paper

In this paper, FlexiDAO will share its learning and knowledge collected as a result of its business activities to present a comprehensive analysis of the state of the art of metering data access in Europe. The intention is to **provide recommendations to businesses on how they can leverage their right to access consumption and production data** as a building block for cost savings and carbon footprint reduction in the usage and procurement of renewable energy.

The paper will therefore answer the following questions

- *Why is it important to obtain metering data?*
- *What is the current state of the art of metering data access?*
- *How can corporate consumers access it despite the existing barriers?*

To approach them, the paper will firstly discuss briefly the importance of granular metering data for 1) energy consumption monitoring, 2) financial performance monitoring of supply contracts, 3) hedging against volatile wholesale market prices and existing PPA positions and 4) achieving complete decarbonisation of electricity consumption.

Secondly, the paper will present a comprehensive and updated overview of the current status of metering data access in 18 European countries, taking into account crucial variables for corporate consumers to know, including the most relevant facts, barriers and challenges for corporate consumers when it comes to accessing their meter data in Europe.

In conclusion, we will provide recommendations on ways that corporate consumers can access their meter data in Europe, together with **FlexiDAO's ability to help corporate consumers on this journey.**

Why granular metering data is fundamental for corporates

You can't manage what you don't measure. This famous quote pinpoints the impact that can be made by unlocking and understanding in detail the load profile and the energy supply portfolio of a business.

Nowadays, all energy-intensive processes are equipped with metering devices that log data in near real-time in modern Energy Management Software (EMS) designed for building operators and energy managers. For non-energy intensive companies, energy efficiency, tariff optimisation and invoice validation have historically been the most widely adopted actions. However, the very high costs involved in monitoring hourly or daily load – installing and maintaining hundreds or even thousands of hardware devices, negotiating data sharing requirements in tenders and maintaining several data interfaces with suppliers and O&Ms – **have represented significant barriers for many companies, with the result that, even today, they rely on monthly invoices to monitor their energy consumption.**

However, in the following chapter we will show that, according to EU legislation, having access to hourly or sub-hourly interval data can be as easy as digitally signing a document. Therefore, if costs and technical complexity no longer represent a barrier, the business case for load monitoring can immediately become positive even for non-energy intensive companies.

But **the benefits of granular metering data don't end with load monitoring. In fact, it can also make a great positive impact on a company's carbon-free procurement strategy**, an effect as yet untapped for both energy intensive and non-energy intensive companies.

1. Monitoring financial performance

Hourly production data enables one to monitor the number of megawatt hours of renewable energy generated and sold by a project, as well as how many megawatt hours the project is expected to produce in the future. Matched with consumption data, it can save time and money on PPA reporting and settlement verification and eliminate costly human errors by automating the process. This data enables managers to calculate the corporation's renewable energy usage and determine if the PPA was an effective hedge by comparing the corporation's energy costs to the settlement cash flow.

2. Mitigating shape risks

Optimising the timing of procured energy as it relates to both system prices and hourly facility load in a given region can provide a hedge against volatile wholesale market prices and existing PPA positions. It can also stabilise buyers' net electricity costs better than a standard PPA and reduce buyers' energy price risk.

3. Embracing new procurement strategies to mitigate long-term risks and achieve zero emissions

There are several signs that indicate the EU is working on guidelines which assess the deliverability⁵ and true carbon reduction impact amongst the different renewable electricity procurement strategies ([see article](#)).

Papers from RMI⁶, UC Davis⁷ and WRI⁸ have already been published that show both the risks of voluntary renewables procurement that does not coincide with the buyer's demand, and the benefits of procurement that does.

While *deliverability*, *24x7 carbon-free energy* or *100x100 renewable energy* are still new trends on the market, it is clear that access to both production and consumption metering data for consumers, service providers, consultants, etc. is the fundamental building block to get started.



⁵ Deliverability can be defined by the temporal and geographical requirement needed for the power generated by a renewable energy project to physically reach the point of consumption.

⁶ <https://rmi.org/insight/clean-power-by-the-hour>.

⁷ <https://energy.ucdavis.edu/wp-content/uploads/Beyond-100-Renewable-Preprint.pdf>

⁸ <https://www.wri.org/research/actions-large-energy-buyers-can-take-transform-and-decarbonize-grid>.



Metering data access: state of the art

Review the european data exchange infrastructures

As part of its daily business, FlexiDAO continuously interacts with regulated market parties, such as TSOs and DSOs. This has resulted in an in-depth investigation of the key characteristics of some European data exchange infrastructures with the aim of identifying the current status of **(at least) settlement hourly metering data access** in Europe from the point of view of end-customers; data owners (e.g. corporate consumers/producers) and service providers **(e.g. FlexiDAO)**. Additionally, in order to comply with the aim of this paper, several interviews were conducted with data platform operators, corporates and key stakeholders, supplemented by information from existing documentation and relevant reports⁹.

The paper includes the analysis of 18 countries: Belgium, Denmark, Germany, Estonia, Ireland, Spain, France, Italy, Netherlands, Austria, Portugal, Lithuania, Latvia, Poland, Finland, Sweden, Norway and the UK. The key characteristics that defined the status of each country are:

1. Status of the smart metering rollout

Data must be digital, thus requiring wide-scale¹⁰ smart meter penetration. Information about the smart meters rollout status and future plans of each country was collected from interviews and from up-to-date European reports¹¹.

2. Unique access point to the data exchange infrastructure

Based on its market experience, FlexiDAO considers that the unique access point¹² (either with a centralised or decentralised model) is one of the most important characteristics because it makes the journey of accessing data easy, cost-efficient and secure for corporates, services providers and other energy market participants.

3. Administrative and technical data access and sharing processes

Administrative and technical processes of **accessing and sharing** metering data should be clear, transparent, well defined and easily accessible. Without that, access to metering data becomes time-consuming and not cost-efficient for corporate consumers.

As a result of the conducted research, the 18 countries listed above were classified according to the following scores:

⁹ European commission, "Benchmarking smart metering deployment in the EU-28", December 2019; Eurelectric, "Distribution grids in Europe: Facts and Figures 2020", December 2020.

¹⁰ More than 80% of metering points, or a plan to have one in the near future (before 2030).

¹¹ European commission, "Benchmarking smart metering deployment in the EU-28", December 2019; Eurelectric, "Distribution grids in Europe: Facts and Figures 2020", December 2020.

¹² Unique access point means that all the country's metering data can be accessed through one market participant. In decentralised models (ex. the Netherlands) several market participants have this role.

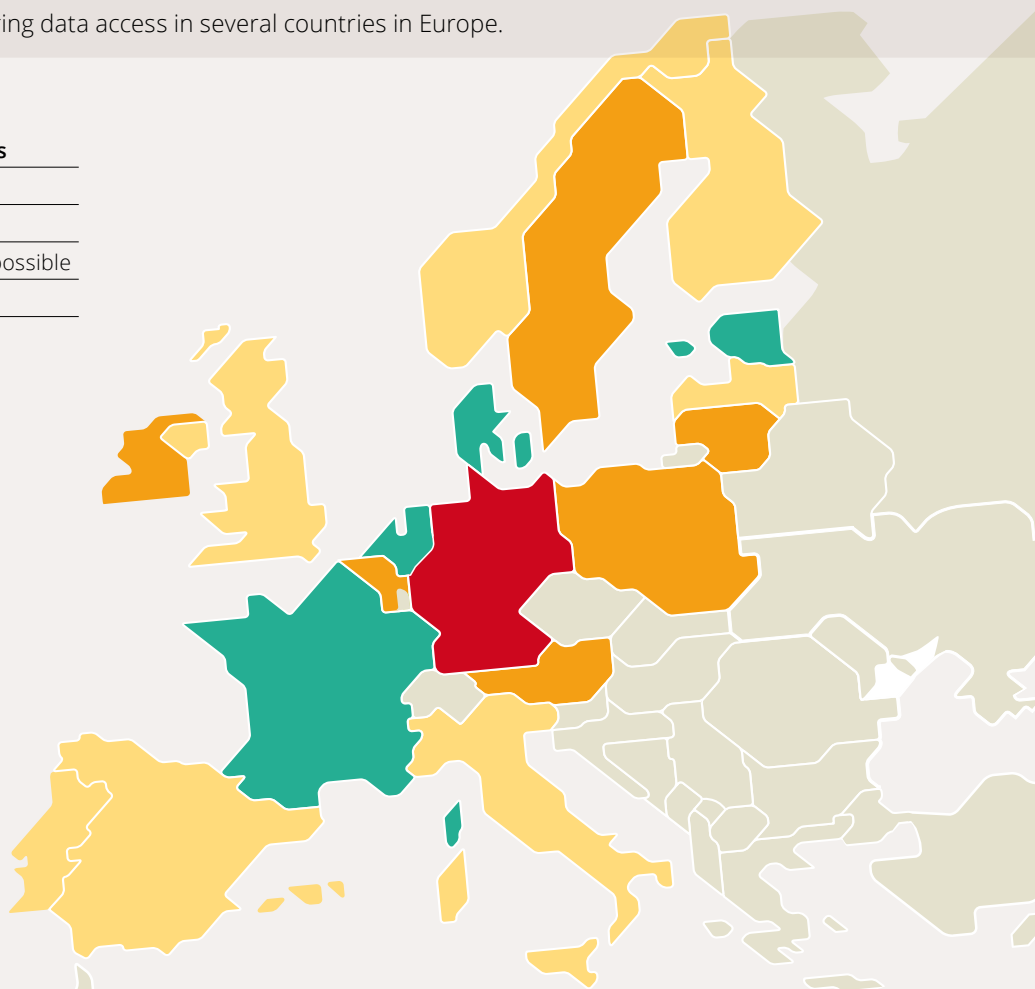
- **Green.** Countries with a wide-scale penetration of smart meters, with an existing data exchange infrastructure with a unique access point and with processes of accessing data well defined without any barrier.
- **Yellow.** Countries with a wide-scale penetration of smart meters or planned before 2030, with an existing data exchange infrastructure with a unique access point and with processes of accessing data well defined, but with existing barriers.
- **Orange.** Countries with a wide-scale penetration of smart meters or planned before 2030, with a data exchange infrastructure planned before 2025 with processes not well defined.
- **Red.** Countries without a plan of smart meters roll-out or defined after 2030, or countries without a data exchange infrastructure with no unique access point planned.

The results of the analysis can be viewed as a summarised overview in the map and table below and then with a detailed description country by country in the annex of the paper. Contact us for more detailed information.

Figure 1. Status of metering data access in several countries in Europe.

Metering Data Access


















- Possible
- With barriers
- Planned, not yet possible
- Restricted



FLEXIDAO

Source: own elaboration based on data collected from interviews and documentation.

Figure 2. Main variables of metering data access in several countries in Europe. Contact us for more granular information.

Country	Smart meters roll-out	Data Exchange Infrastructure	Data characteristics	Data access processes			Existing Barriers		
				Customer access	3rd party access	Customer consent	Free price	Administrative	Technical
 EE	Completed	Implemented	1-hour D+1 Consumption/Production	Yes	Yes	Web portal	Yes	No	No
 ES	Completed	Implemented	15 min D+1 Consumption	Yes	Yes	Web portal	Yes	Yes	No
 IT	Completed	Implemented	15-min D+1 Consumption/Production	Yes	No	Web portal	Yes	No	Yes
 FI	Completed	Planned 2022	1-hour D+1 Consumption/Production	Yes	Yes	Paper based	No	No	No
 SE	Completed	Planned 2024	1-hour D+1 Consumption/Production	DSO	DSO	DSO	No	TBC	TBC
 NW	Completed	Implemented	1-hour D+1 Consumption/Production	Yes	Yes	Web portal	No	Yes	No
 DK	Completed	Implemented	15-min D+1 Consumption/Production	Yes	Yes	Web portal	Yes	Yes	No
 FR	Completed	Implemented	1-hour D+1 Consumption/Production	Yes	Yes	Web portal / Contract	Yes	No	No
 NL	Completed	Implemented	15-min D+1 Consumption/Production	Yes	Yes	Web portal / Digital	Yes	No	No
 AT	Planned 2021-2025	Planned 2022	15-min D+1 Consumption/Production	Yes	Yes	Web portal	Yes	TBC	TBC
 UK	Planned 2021-2025	Implemented	30-min D+1 Consumption/Production	Yes	Yes	Paper based	No	No	No
 LV	Planned 2021-2025	Implemented	TBC	Yes	Yes	TBC	TBC	Yes	Yes
 IE	Planned 2021-2025	Implemented	15-min W+1 Consumption/Production	Yes	Yes	Email	Yes	No	Yes
 PT	Planned 2021-2025	Implemented	15-min D+1 Consumption/Production	Yes	Yes	Web portal	Yes	Yes	No
 LT	Planned 2021-2025	Planned 2023	1-hour TBC Consumption/Production	Yes	Yes	TBC	TBC	TBC	TBC
 PL	Planned 2026-2030	Planned 2024	15-min TBC Consumption/Production	Yes	Yes	TBC	TBC	TBC	TBC
 BE	Planned after 2030	Planned 2024	1-hour TBC Consumption/Production	Yes	Yes	TBC	TBC	Yes	Yes
 DE	Planned after 2030	Not planned	TBC	DSO	DSO	DSO	DSO	Yes	Yes

Source: own elaboration based on data collected from interviews and documentation.



Metering Data Access

- Possible
- With barriers
- Planned, not yet possible
- Restricted

DSO. The value of the field depends on the Data Provider DSO.

TBC. As the data exchange infrastructure is not implemented yet, that information needs to be confirmed and is not yet defined.

Main challenges & barriers

The high rate of smart-meter rollout, along with already existing or planned data exchange infrastructures, places Europe at the forefront of the world in metering data collection and exchange. However, as is shown in the images above, the systems and processes being adopted to facilitate access and exchange of metering data present several barriers and remain highly diverse, fragmented and poorly documented. Corporates still face several barriers that make the consent and sharing process quite cumbersome. The most common and recurring barriers are.

Information

- Most companies are still unaware that they can access their metering data without needing to install any device or hardware. They are not well informed about the benefits of doing so. Sufficient information campaigns for customers are lacking, which leads to a majority of corporate consumers with smart meters installed not knowing that they can request to share the (sub-)hourly data with third parties. Therefore, the benefits cannot be realised.

Administrative

- Lack of legally appointed responsible party, unified access point and uniform and documented way to access data in a country.
- Lack of authorisation process to grant third-party access. In most cases, processes are not well defined and/or poorly documented.
- Requirement to have the VAT number or national ID of the country in which the data access request is submitted.
- High price of accessing metering data.

Technical

- Lack of availability of metering data through a digital data interface (i.e. API, B2B messaging) and software interfaces.
- Lack of data standards for the energy sector to optimise interoperability, and differences in security and compliance requirements.

What to expect of the next 5 years

Public consultations on the Implementing Act drafts are expected to start in Autumn 2021. Their aim is to establish a single point of reference for national practices, comparability between Member States, reach a minimum level of interoperability/data access, monitor progress of national practices and issue recommendations to Member States. The effort is seen as an ongoing step-by-step exercise with a requirement of continual improvement.

Entitled by Articles 20, 23 and 24 of the Directive (EU) 2019/944, the European Commission is already working together with DSOs, TSOs and many other stakeholders to adopt Implementing Acts in order to specify interoperability requirements and non-discriminatory and transparent procedures for access to data based upon existing national practices. The first act, expected at the beginning of 2022, will set out a consistent European approach to data interoperability across different use cases, meaning it will establish the same

principles for metering data, data needed for customer switching, demand response and – more broadly – other services.

In light of these efforts, **it is fair to expect that the map shown below will gradually change to green in the upcoming years.**



Recommendations

As explained in the section *Why granular metering data is fundamental for corporates*, energy buyers can use granular metering data to achieve cost reductions, mitigate risks and prioritise strategies that maximise near and long term emissions reductions. Service providers such as FlexiDAO can help corporates overcome the current barriers that make data access processes cumbersome and then use such data to offer innovative services, helping them in the planning and execution of their energy procurement strategies.

In relation to the barriers identified in the previous section, FlexiDAO can help buyers overcome the following obstacles.

Information

The annex of this paper includes all the information that any business needs to understand the availability of metering data in a given country and the process to obtain it. FlexiDAO's team of experienced energy professionals can provide further help in understanding both the advantage of collecting data and how to go about it.

Administrative

The knowledge built in developing our services and writing this paper, together with the extended network and relationships with metering and grid operators see FlexiDAO perfectly positioned to help corporates overcome barriers, such as the lack of legally appointed responsible party, unified access point and a uniform and documented way to access data in a country.

Technical

In authorising FlexiDAO to collect metering data on their behalf, corporates can overcome any hardware, technical barriers and costs of implementation that may be encountered. The process is extremely easy in the majority of cases and simply requires a signature from the consumer (for consumption metering data) or from the producer (for production metering data).

FlexiDAO's software RESpring will then collect all the needed data, process it and provide online tools for PPA performance monitoring, 24/7 matching certification, RECs management, etc. Our customers can decide whether to contract a SaaS license or to host RESpring on their cloud infrastructure to hold complete control over the data.

Decarbonisation of energy consumption is a long journey and achieving 100% annual coverage of renewable energy is not the ultimate milestone. Any procurement strategy will depend significantly on gaining a deep understanding of how load coincides with supply and the surrounding grid. Metering data is the cornerstone to successfully completing this journey in the most cost-efficient way possible and with minimal risk.

Annex

Crucial metering data access variables

Smart meter rollout

Metering points | % Smart meters. Regulated smart meter rollout is not always happening at a fast enough pace, at a low enough cost, or with suitable technology/interfaces/access that would enable the majority of products and services.

Wide-scale plan. The current status of the smart meter roll-out is stated in this column. By wide-scale plan, we refer to a plan to cover at least 80% of consumers, both retail and corporate.

Data exchange infrastructure

Unique access point. Unique access point means that all the country's metering data can be accessed through one single market participant. In centralised models (e.g. Estonia) there is one single data provider. In decentralised models (e.g. the Netherlands) several market participants have this role. In countries without a unique access point, a country's metering data is not grouped together and its access, if possible, is managed by several DSOs (e.g. Sweden), depending on the area of the country they have been assigned.

Data provider. A data provider is the entity in charge of the management of the data exchange infrastructure. In some countries, such as Norway or Denmark, there is only one centralised data provider. In some cases, in countries like the UK and the Netherlands, there is more than one data provider, among which are private companies.

Data characteristics

Settlement data. We define settlement metering data as the ex-post data rectified and validated by grid operators. This data can be used for final settlements and billing.

Customer type. Indicates the customer type for which data is available; the main customer types being, Residential, Corporate and Industry.

Data granularity. All metering data should have at least hourly granularity to support hourly matching of electricity production and consumption.

Data availability. All metering data should be available as soon as possible after physical energy flow (max. one day after physical energy flow) and without geographical limitations within the European borders.

Consumption data. Settlement consumption data measured at the consumption metering point.

Production data. Settlement consumption data measured at the production metering point.

Data access processes

Customer access. Based on the Electricity Market Directive (Directive (EU) 2019/944), validated historical metering data should be made available to end-customers on request, easily and securely and at no additional cost. This variable indicates if the customer has access to their own data.

Third-party access. According to European regulations, corporate consumers can allow access to eligible third parties by giving them an explicit consent to access their data.

Customer consent process. Standardisation and digitalisation of the customer consent process is required in order to simplify the administrative process and make it secure. The customer should be able to allow or disallow specific parties access to metering data available from smart meters. Customers should be able to modify and terminate the data privacy options they have chosen.

Free price. This column specifies if third parties have to pay a fee in order to access corporate customers metering data.

Main findings per country

Estonia (EE). With an already implemented wide-scale smart meter rollout (98.9%), Elering has implemented a data exchange infrastructure with a unique access point for all market participants. Hourly metering data, with an availability of one day after the physical flow, can be accessed for free by Estonian customers and eligible third parties, both national and international companies, without the necessity of registering in Estonia. Customer consent process is digital, performed through the web portal. Technical integration via API with other eligible parties is possible, making the data exchange infrastructure interoperable across market participants. Estonian metering data access was classified as **GREEN** and the country should be used as an example of a successful data exchange infrastructure model by other Member States.

Spain (ES). With an already implemented wide-scale smart meter rollout (99.6%), Datadis has implemented a data exchange infrastructure with a unique access point for all market participants. Data is stored physically in DSO databases and grouped logically by Datadis on a single platform. Hourly consumption metering data, with an availability of one day after the physical flow, can be accessed for free by Spanish customers and eligible national third parties. International parties need to get a national ID (NIF/NIE) in order to access metering data. Customer consent process is digital, performed through the web portal. Technical integration via API with other eligible parties is possible, making the data exchange infrastructure interoperable across market participants. Spanish metering data access was classified as **YELLOW** as it presents administrative barriers for international service providers.

Italy (IT). With an already implemented wide-scale smart meter rollout (98.5%), Acquirente Unico, an Italian public entity, has implemented a data exchange infrastructure called Sistema Informativo Integrato, with a unique access point for eligible market participants (DSOs, retailers and end-customers). 15-min metering data, with an availability of one day after the physical flow, can be accessed for free by Italian customers. Access for third parties is not yet available, thus the consent process is not yet defined. Data can be accessed only through the portal, without any technical integration available yet. Italian metering data access was classified as **YELLOW** as it presents administrative and technical barriers for third parties.

Finland (FI). With an already implemented wide-scale smart meter rollout (97.3%), Fingrid is planning to launch the Finnish data exchange infrastructure with a unique access point for all market participants in early 2022. Hourly metering data, with an availability of one day after the physical flow, will be available for access by Finnish customers and third parties. The customer consent process will be paper-based and free access will not be allowed for third parties. A basic monthly fee, with a variable cost depending on the amount of metering points, will be charged to third parties. Technical integration via SOAP protocol with other eligible parties will make the data exchange infrastructure interoperable across market participants. Finnish metering data access was classified as **YELLOW** as the data exchange infrastructure is not yet implemented, and third parties will be charged for access to metering data.

Sweden (SE). With an already implemented wide-scale smart meter rollout (97.3%), Svenska Kraftnät is planning to launch the Swedish data exchange infrastructure in 2023, with a unique access point for all market participants. The implementation is delayed due to a pending legislative package. Hourly metering data, with an availability of one day after the physical flow, will be able to be accessed by Swedish customers and third parties. The customer consent process is still not yet defined, while free access will not be allowed for third parties, in which case, a basic monthly fee with a variable cost depending on the amount of metering points will be charged. There is currently no information about technical integrations and technical processes. Swedish metering data access was classified as **ORANGE** as the data exchange infrastructure is not yet implemented, and the access processes are as yet undefined. Currently metering data access – if possible – is diverse and depends on each Swedish DSO (170).

Norway (NW). With an already implemented wide-scale smart meter rollout (97%), Elhub has implemented the Norwegian data exchange infrastructure with a unique access point for all market participants. Hourly metering data, with an availability of one day after the physical flow, can be accessed by Norwegian customers and authorised national third parties. Third parties need to register the company within the country and obtain a national ID in order to access metering data. Customer consent process is digital, and free access is not allowed for third parties. A basic monthly fee with a variable cost depending on the amount of metering points is charged to third parties. Technical integration via API with other eligible parties is possible, making the data exchange infrastructure interoperable across market participants. Norwegian metering data access was classified as **YELLOW** as it presents administrative barriers for international service providers, and the cost of accessing data is high.

Denmark (DK). With an already implemented wide-scale smart meter rollout (99.1%), Energinet has implemented the Danish data exchange infrastructure with a unique access point for all market participants. 15-min and hourly metering data, with an availability of one day after the physical flow, can be accessed for free by Danish customers and eligible national third parties. International parties need to get a Danish VAT number in order to access metering data. Customer consent process is digital and performed through the web portal. Technical integration via API with other eligible parties makes the data exchange infrastructure interoperable across market participants. Danish metering data access was classified as **YELLOW** as it is mandatory for international third parties to get a Danish VAT number to access authorised metering data.

France (FR). With an already implemented wide-scale smart meter rollout (80%), Enedis, the main French DSO, has implemented the French data exchange infrastructure with a unique access point for all market participants. Hourly metering data, with an availability of one day after the physical flow, can be accessed for free by French customers and eligible third parties, both national and international companies, without the necessity of registering in France. Customer consent process is paper-based and performed via a digital contract between the customer and the third party. Technical integration via API with other eligible parties is possible, making the data exchange infrastructure interoperable across market participants. French metering data access was classified as **GREEN**, as there is no existing barrier and administrative and technical processes are well defined.

Netherlands (NL). With an already implemented wide-scale smart meter rollout (82.2%), the Netherlands operates a data exchange infrastructure where metering data is stored decentrally with a unique access point for all market participants. Data can be gathered from diverse metering administrator companies, such as Ealyze. 15-min metering data, with an availability of one day after the physical flow, can be accessed for free by customers and eligible third parties, both national and international, without the necessity of registering the company in the Netherlands. Customer consent process is digital and performed through the metering administrator web portal. Technical integration via API with other eligible parties is possible, making the data exchange infrastructure interoperable across market participants. Dutch metering data access was classified as **GREEN**, as it has no existing barrier and administrative and technical processes are well defined.

Austria (AT). A wide-scale smart meter rollout is planned for implementation in 2021-2025, currently 21.1% of smart meters are in place. EDA is planning to launch a data exchange infrastructure in 2022 with a unique access point for all market participants in which data will be stored physically on DSO's databases and grouped by EDA in one single platform. 15-min metering data, with an availability of one day after the physical flow, will be able to be accessed by Austrian customers and eligible third parties. Customer consent process will be digital and will be performed through the web portal. Technical integration via API with other eligible parties will make the data exchange infrastructure interoperable across market participants. Austrian metering data access was classified as **ORANGE** as neither the wide-scale smart meter rollout nor the data exchange infrastructure has been implemented to date. Processes, both technical and administrative, are not yet defined.

United Kingdom (UK). A wide-scale smart meter rollout is planned for implementation in 2021-2025, currently 50% of smart meters are in place. DCC has implemented the data exchange infrastructure with a unique access point for all market participants. As becoming a DCC user is complex, time consuming and costly, several companies (i.e. N3RGY) are offering their own data exchange infrastructures integrated with DCC databases. 30-min metering data, with an availability of one day after the physical flow, can be accessed for free by UK customers, and at a cost by eligible third parties without the necessity of registering the company in the UK. Customer consent process is digital and performed through the web portal. Technical integration via API with other eligible parties is possible, making the data exchange infrastructure interoperable across market participants. The UK metering data access was classified as **YELLOW** as the wide-scale smart meter rollout is not yet implemented, and accessing metering data has a cost.

Latvia (LV). A wide-scale smart meter rollout is planned to be implemented in 2021-2025, currently there is 73% smart meter penetration. A data exchange infrastructure has been implemented with a unique access point for all market participants. Latvian metering data access was classified as **YELLOW** as the wide-scale smart meter rollout plan has not been implemented yet.

Lithuania (LT). A wide-scale smart meter rollout is planned to be implemented in 2021-2025, currently only 2.8% of smart meters are in place. There are plans to have a data exchange infrastructure by 2023 with a unique access point for all market participants. Lithuanian metering data access was classified as **ORANGE** as the wide-scale smart meter rollout is still not yet implemented and neither is the data exchange infrastructure.

Ireland (IE). A wide-scale smart meter rollout is planned for implementation in 2021-2025, currently there is a 3.7% smart meter penetration. MRSO has implemented the Irish data exchange infrastructure with a unique access point for all market participants. 15-min metering data, with an availability of one week after the physical flow, can be accessed for free by customers and eligible third parties, without the necessity of registering the company in Ireland. Customer consent process is paper-based. Technical integration is not possible and metering data exchange is currently made via email by an encrypted file. Irish metering data access was classified as **ORANGE** as the wide-scale smart meter rollout is still not implemented and technical integration is not possible.

Portugal (PT). A wide-scale smart meter rollout is planned for implementation in 2021-2025, currently there is 48.3% smart meter penetration. E-REDES, Portugal's main DSO, has implemented the data exchange infrastructure with a unique access point for all market participants. 15-min metering data, with an availability of one day after the physical flow, can be accessed for free by customers and by eligible third parties, without the necessity of registering the company in Portugal. Customer consent process is digital. Technical integration via API with other eligible parties is possible, making the data exchange infrastructure interoperable across market participants. Portuguese metering data access was classified as **YELLOW** as the wide-scale smart meter rollout is not yet implemented, and data access processes present barriers, such as problems with the registration process.

Poland (PL). A wide-scale smart meter rollout is planned for implementation in 2026-2030, currently 8.3% of smart meters are in place. They are planning to have a data exchange infrastructure set up in 2024 with a unique access point for all market participants. Polish metering data access was classified as **ORANGE** as the wide-scale smart meter rollout is still not implemented and neither is the data exchange infrastructure.

Belgium (BE). A wide-scale smart meter rollout is planned for implementation after 2030, currently there is 3.3% smart meter penetration. A selective rollout is being implemented. Atrias is planning to implement a data exchange infrastructure in 2024 with a unique access point for all market participants. Hourly metering data, with an availability of one hour after the physical flow, will be able to be accessed by customers and by eligible third parties. The customer consent process remains undefined. Belgian metering data access was classified as **ORANGE** as the wide-scale smart meter rollout is not yet implemented, nor is the data exchange infrastructure with its related access processes.

Germany (DE). There is no plan for wide-scale smart meters in Germany, owing to the negative result of the Cost-Benefit Analysis. However, large consumers with an average annual consumption in excess of 6,000 kWh are required to have smart meters. There is no plan to implement a data exchange infrastructure with a unique access point for all market participants. German metering data access was classified as **RED** as there is no wide-scale smart meters rollout plan in place, or any plan for a data exchange infrastructure. Currently metering data access in Germany is diverse – if possible – and depends on each DSO.

Mapping metering data access in Europe

©FlexiDAO, 2021

This report was authored by FlexiDAO with support from EIT InnoEnergy.
All views expressed are solely those of the FlexiDAO authors.

Mapping metering data access in Europe is a property of FlexiDAO. Its content, figures and data may only be re-used and cited with a clear reference to FlexiDAO as a source.
The document is also available in an online format on the FlexiDAO website: www.flexidao.com

For more information about the report, please contact
Simone Accornero, CEO & co-founder, s.accornero@flexidao.com
Joan Collell, Business Strategy Leader & CCO, j.collell@flexidao.com

Acknowledgements

The authors wish to thank the following corporations and individuals for offering their insights and perspectives on this work. **Inclusion on this list does not necessarily indicate endorsement of the report's findings.**

Georg Hartner, Senior consultant, Austrian Energy



Georg Rute, Digitalisation manager, Elering



Emilien Simonet, Strategic assets manager, EIT InnoEnergy
Susana Maure Pérez, Senior Marketing Manager, EIT InnoEnergy



Co-funded by the
European Union



EIT InnoEnergy

Accelerating Europe's energy transition

Creating energy that's sustainable in every sense

For us, true sustainability also means an industry that's commercially viable, endlessly innovative, and highly competitive. We make this possible by helping Europe adopt pioneering new technologies, without risk or complexity. From mobility to construction - from renewable energy sources to smarter storage - our commercially-attractive technologies are the product of a trusted ecosystem for sustainable energy.

We've invested in more than 250 assets, 120 of which provide ROI with a forecasted revenue of €10-13 million. And we bring together more than 400 key players from across the energy value chain, from 18 different countries, and with indirect access to 150 million energy consumers. The result is the proven, landmark innovation you need to reduce energy costs, increase system performance, decrease GHG emissions, create jobs, and increase competitiveness.

Energy is in everything we do

It's not just our area of technical expertise, the industry we're transforming, or the place where we put our proven ecosystem for innovation to work. Energy also defines the proactive, dynamic way we bring our bold ambition to life. As engaged, active partners, we work with innovators and industry, entrepreneurs and enablers, the research space, and commerce. As a result, we have become a valued source of expertise and insight into the challenges the energy industry is facing today - and where innovation will take us tomorrow.

EIT InnoEnergy

Kennispoort 6th floor
John F. Kennedylaan 2
5612 AB Eindhoven
The Netherlands

info@innoenergy.com
www.innoenergy.com



FLEXIDAO

FlexiDAO

Bruc, 149

08037 Barcelona

Spain

info@flexidao.com

www.flexidao.com