CEER

Council of European Energy Regulators

Fostering energy markets, empowering **consumers**.

2017 Handbook for National Energy Regulators

How to assess retail market functioning

Ref: C16-SC-52-03
24 January 2017

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Arrondissement judiciaire de Bruxelles – RPM 0861.035.445

INFORMATION PAGE

Abstract

In 2015, CEER developed a strategic high-level paper outlining the framework of the key characteristics of well-functioning retail energy markets. In 2016, European energy regulators have committed to continue the development of a forward-looking framework for evaluating the performance of retail energy markets and to prepare a roadmap to 2025 well-functioning retail markets. The development of this roadmap aimed at competitive, reliable and innovative retail markets as part of our pledge to realise the 2020 Vision, a commitment also expressed in ACER's Bridge to 2025: Conclusions Paper.

This Handbook (C16-SC-46-04) has been developed as a practical guide for NRAs in the process of evaluating the performance of their national retail energy markets. By providing a clear description and purpose of each metric as well as information on how to quantify the metric and the source of data, the handbook will facilitate NRAs' assessment of their retail markets. Pilots that are provided by NRAs are included as an Annex to this handbook. These pilots are an example and inspiration to assess the functioning of the retail market.

Target Audience

European Commission, energy suppliers, traders, gas/electricity customers, gas/electricity industry, consumer representative groups, network operators, Member States, academics and other interested parties.

Keywords

3rd Package, consumer rights, consumer protection & empowerment, reliability, simplicity, supplier switching, vulnerable consumers.

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Related Documents

CEER documents

- CEER Discussion Paper on scoping of flexible response, 3 May 2016, Ref. C16-FTF-08-04
- CEER Benchmarking report on removing barriers to entry for energy suppliers in EU retail energy markets, 1 April 2016, Ref. C15-RMF-70-03
- CEER Position Paper on well-functioning retail energy markets, 16 October 2015, Ref. C15-SC-36-03
- CEER Advice on Customer Data Management for Better Retail Market Functioning, 19 March 2015, Ref. C14-RMF-68-03
- Public Consultation on comparison tools, 8 November 2016, Ref. C16-CEM-95-03
- CEER Position paper on Renewable Energy Self-Generation, Ref. C16-SDE-55-03
- Energy Regulation: A Bridge to 2025, Conclusions Paper – September 2014
- 2020 Vision for Europe's Energy Customers – November 2012
- CEER Review of Current and Future Data Management Models (C16-RMF-89-03).

ACER documents

- ACER/CEER Annual Report on the Results of Monitoring the Internal Electricity and Natural Gas Markets in 2014, November 2015
- ACER/CEER MMR 2015
- Energy Regulation: A Bridge to 2025, Conclusions Paper – September 2014

External documents

- Commission Notice on the definition of relevant market for the purposes of Community competition law (97/C 372/03)
- Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2004/C 31/03)

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Introduction

In the “Bridge to 2025,” regulators place energy consumers at the centre of their policy considerations. CEER’s 2020 vision for the European Union’s consumers defined in detail the approach of placing customers first: by providing a reliable supply at an affordable price, through simple to use services and in a way that protects consumer interests and empowers them to participate in the market.

In 2015 CEER published the Position Paper on well-functioning retail markets. This Position Paper builds on the Bridge to 2025 and the CEER- BEUC 2020 Vision. In addition, the paper addressed and complemented the issues raised by the European Commission’s Retail Communication “Delivering a New Deal for Energy Consumers,” published in July 2015. We thus seek to establish common criteria to assess the functioning of our retail markets as a first step in developing a roadmap for securing competitive, reliable, and innovative retail energy markets to the benefit of consumers by 2025. The Position Paper introduced a framework to evaluate the functioning of a retail energy market, whilst taking into account the current stage of market’s development.

As a first step in the process of preparing a draft roadmap to well-functioning retail energy markets, CEER has developed this handbook, which contains the metrics introduced by the Position Paper and their respective definitions. *An annex to the handbook contains pilots performed by several NRAs, as an example of how to use the metrics in practice.*

The structure of this handbook matches the outline of the Position Paper. It contains the triple-layered framework (high level principles, key-properties and metrics) but focusses on definitions of the underlying metrics.

Figure 1 Principles, Key properties and Metrics

The handbook does not explain the rationale behind the chosen metrics. This has been discussed in the Position Paper.

1.1 By whom and how should this handbook be used?

The main objective of this handbook is to offer clarity and further explanation of the metrics that NRAs will use to self-assess the functioning of their national markets. The definitions of the metrics are therefore practical in nature and offer a certain degree of flexibility. Each definition contains a methodology to guide NRAs through the process and, where possible, a step-by-step approach is included. By following this approach, NRAs should be able to define the metric, and adapt it to make it more relevant in its national context

It should be noted that CEER did not pursue an academic approach when defining the metrics. The definitions are harmonised and workable definitions. The feasibility to use them in practice was highly sought after. Where relevant we used, and built upon, existing definitions. The definitions of the metrics concerning consumer protection and empowerment are, where applicable, directly linked to the monitoring of the implementation of consumer rights.

Finally, when assessing the retail energy market, the metrics should not be considered individually, but rather in conjunction with each other, while also taking into account the specificities of every Member State (MS) and the development of the retail market. While the outcome of the metrics may pinpoint to a particular problem in the market, further research into the issue may be necessary to fully understand the situation.

1.2 Minimising the administrative burden

When collecting data, it is important to minimise the administrative burden. During the workshops and public consultation the different stakeholders pointed out that the most efficient way of collecting data should be discussed with the stakeholders.
In practice, minimising the administrative burden may be done by:

- Combining the request with other (annual) survey/data;
- Using well defined data sets (and ensuring this definition is preserved for a reasonable amount of time);
- Using, if possible, existing information;
- Using clear and well-structured Excel sheets and/or online questionnaires;

1.3 Structure of the definitions

When defining the metrics we used a template containing six elements: description, purpose, source of data, quantification, unit of measure, and data completeness. The description explains what the metric is about. The purpose describes how an NRA should use the metric and recommends a methodology to build it. The source of data gives directions on where to find the actual data and the quantification gives an instruction on how to calculate the metric with the prescribed unit of measure. Data completeness leaves room for comments on the validity of the outcome due to lack of data, or unreliability.

1.4 Relevant Market

Retail markets for energy differ significantly between MSs. Each MS has its own local/national circumstances that have to be taken into consideration when assessing the functioning of the retail market. It is the NRAs' responsibility to evaluate and define the relevant market for each metric. Regional initiatives are welcomed. The definition of a relevant market in this handbook is derived from the competition law concept. The European Commission has defined the relevant market in a Commission Notice on the definition of relevant market (97/C 372/03). A relevant market could be defined either by geographical properties (e.g. DSO areas or national borders) and/or by product or consumer categories (e.g. household consumers, small business), as well as smart vs. non-smart meters. In the definition of the first metric on calculating the Herfindahl-Hirschman Index (HHI), we offer a step-by-step approach to define the relevant market, based on the Commission Notice and the common approach by national competition authorities.

1.5 New energy market design

The European Commission published a revision of the Electricity and Gas Directive on the 30th of November 2016[1]. CEER will thoroughly examine the implications of this revision for the handbook and its metrics, and will update the handbook accordingly.

1.6 Public consultation of external stakeholders and pilots

Following the informal consultation on the Position Paper and a series of closed workshops[2], CEER has taken into account the feedback received from stakeholders.[3] CEER also held a public consultation for interested stakeholders. The 9-week consultation period ended on 19 September 2016 and following the input, CEER prepared an evaluation of responses. In total 14 stakeholders[4] responded to the public consultation which is reflected in the current version of the Handbook.

CEER invited NRAs to complete pilots of the metrics. A total of 59 pilots were undertaken by 12 NRAs[5]. CEER would like to take this opportunity to thank all of these NRAs. The pilots were all very useful and provided feedback on how to implement the metric in practice. The pilots also improved the definitions of the metrics. In the annex to this Handbook all pilots are included that suit the definitions of the metric best. NRAs are invited to use these pilots as an example and inspiration to assess the functioning of the retail market.

2 Next steps

[1] http://ec.europa.eu/energy/en/news/commission-proposes-new-rules-consumer-centred-clean-energy-transition

[2] Held with the supporters of the CEER-BEUC 2020 Vision, academics, the European Commission and ACER.

[3] CEER would like to thank ANEC, BEUC, CEDEC, CCP, Citizens Advice, DECO, Eurelectric, Eurogas, Pricewise and VZBV for the written feedback they have provided.

[4] The respondents are CERA, CEDEC, EDF, EDSO for Smart Grids, Eurelectric, EUROGAS, European consumer voice in standardisation, Gaz Réseau Distribution France (GRDF), GEODE, NEON, REScoop.eu, Smart Energy Demand Coalition, Swedenergy and ZSE Energia, a.s.

[5] The pilot NRA's were: ACM, Ei, Ofgem, NVE, CRE, CREG, CER, AEEGSI, ERU, BNetzA, EV and E-Control.

NRAs are invited to use this handbook to self-assess their national market in 2017. The self-assessments may have a regional focus to examine the scope of the potential for retail market integration at regional level (e.g. NordREG). To fully grasp the development of the market over time we advise to repeat the assessment within a reasonable timeframe. NRAs themselves are best equipped to evaluate the most appropriate timeframe. We also advise to take into account the administrative burden for stakeholders (suppliers, DSOs, etc.) when collecting the data needed to assess the metrics. In 2017 CEER will offer guidance to NRAs through the process of self-assessment, which may include organising training sessions for NRAs. This will be done on a supply and demand basis.

CEER acknowledges the fact that the handbook and its metrics are dynamic by nature. Legislation evolves, as well as national circumstances. This means that CEER will have to review the metrics periodically and update or change metrics and/or definitions when necessary.

3 Harmonised definitions of metrics

3.1 Key property I: Low Concentration within a relevant market

With low market concentration, the ability of any market player to exploit market power to the detriment of consumers is reduced and consumers can benefit from competition, innovation and customer services.

Metric 1: Herfindahl-Hirschman Index (HHI)

Metric 1	**Herfindahl-Hirschman Index**
Description	The HHI measures the degree of concentration in a market.
Purpose	Based on guidance from the European Commission (Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2004/C 31/03), a HHI above 2000 signifies a highly concentrated market. In general, a high number of suppliers and low market concentration are seen as one of the indicators of a competitive market structure. To accurately evaluate the degree of concentration, the NRA could use the following step-by-step approach, which is in line with that used by the Directorate-General for Competition (DG COMP) and national competition authorities: 1. Define the relevant product markets (i.e. assess the degree of demand and supply substitution of different products): The retail supply of both gas and electricity can be divided into several categories of final customers, with different product preferences and needs: (i) households, (ii) small industrial and commercial customers (SMEs), (iii) large industrial customers and (iv) very large/energy intensive customers. We advise to, as a minimum, distinguish between household and non-household customer segments and, preferably between households, SMEs and other customer segments. In some member states, the supply of energy at regulated prices (or supply covered by a designated supplier of last resort) and the supply of energy at free prices (or the supply to customers with different metering arrangements e.g. prepayment meters, time of use and smart meters) can be considered as relevant product markets. The market for some categories of vulnerable household customers or the market for households on social tariffs can also be considered as relevant markets. For electricity, industrial/commercial customers are usually 'half-hourly metered' and often connected to high and medium voltage grids. It may however be considered that supply to large industrial consumers forms part of the wholesale market, not retail market, depending on whether industrial consumers buy energy to consume or to resell. Households and smaller industrial/commercial customers are most often non-half-hourly metered and connected to the lower voltage grids. For gas, product markets can be defined on the basis of criteria such as the customers' volume of consumed gas, off take patterns (e.g. usage of gas for electricity generation) or whether they are connected to the transmission network. Finally, the possibility of a combined

	retail gas and electricity market for domestic customers can be considered, as some suppliers offer a single contract covering both the supply of gas and electricity (dual fuel contract) to domestic customers. 2. Define the relevant geographic markets (i.e. identify the geographic boundaries of the area where suppliers compete against each other): The retail supply of electricity to large industrial and commercial customers can been considered to be national, provided that these markets are fully liberalised and if the conditions of competition are found to be uniform throughout the relevant territory. The retail supply of electricity to household and smaller industrial and commercial customers is generally national in scope, however, if, for example, many local energy companies (vertically-integrated DSO/supplier) exclusively serve their historical zones and no other suppliers operate, regional areas can be considered as relevant markets. For gas, retail supply markets are generally national in scope, but can also be local. 3. Calculate the HHI for every relevant market according to the quantification as suggested below. The resulting relevant markets should also be considered for the completion of the other metrics contained in this handbook.
Source of data	Information request to retailers or regulated companies.
Quantification	The HHI is calculated as the sum of the squares of the market shares of all firms in the market. It ranges between 0, for an infinite number of small firms, and 10,000, for one firm with a 100% market share. Market shares can be calculated on the basis of consumed volumes and number of customers or meter points.
Frequency	The HHI should be calculated at least annually. In particular, its development over time should be assessed to understand whether the market structure becomes more or less competitive.
Unit of measure	Index
Data completeness	Depending on the relevant market definition, the data requirement to calculate the HHI may be more or less complex. As a minimum, the NRA should be able to obtain data on supplier shares in household and non-household markets.

3.2 Key property II: Low market entry barriers

In order to facilitate competition and innovation, barriers to market entry and growth for new market actors (i.e. suppliers and third parties) as well as barriers for innovation (including demand response) need to be as low as possible.

Metric 2: Time needed and cost of accessing well-functioning wholesale markets and licencing/balancing regimes

Metric 2	**Time needed and cost of accessing well-functioning wholesale markets and licencing / balancing regimes**

Description	Fair access to energy procurement on the wholesale market and to licencing and balancing regimes is a key pre-requisite for any supplier considering entry into the retail market. A supplier is always responsible for acquiring contracts regarding energy procurement and balance responsibilities. This can be achieved in different ways. In this respect, the NRA shall verify whether or not there are procedures to obtain such responsibilities for a new supplier. To ensure a level playing field to enter a market there is a need for a common denominator for market rules, such as equal and non-discriminatory access for all suppliers within the relevant market.
Purpose	Firstly, establish whether such procedures are available to all parties interested in becoming, or acting, as a supplier on the market. Secondly, establish that such procedures, and in particular their length and costs, are equal and non-discriminatory for all suppliers on the market, or suppliers wanting to access a market.
Source of data	For the first purpose, the main sources would include NRAs' knowledge of regulatory and legal entry processes, as well as the information made available by regulated companies and balancing and settlement agencies. For the second purpose, market participants may be best placed to offer (via surveys/discussions/questionnaires) a more qualitative assessment of balancing, licensing and other access costs, based on their actual entry experience.
Quantification	The metric focusses on the time and costs associated with administrative and financial rules to access wholesale markets and licensing/balancing regimes. It does not include entry IT investment and staff resources costs incurred by individual suppliers. In order to quantify this metric we suggest that the NRA addresses the following three sets of questions (please specify whether the answers differ at national and regional levels): Wholesale energy procurement • Are there procedures to access a national or regional wholesale market? • How long does it take to gain access to energy procurement in a national or regional wholesale market? • What is the cost of accessing national or regional wholesale market? • Supplier license: Are market participants required to have a license to act in a national or regional market? • How long does it take to obtain a licence to act in a national or regional market? • What is the cost of acquiring a licence to act in a national or regional market? Balancing responsibility

	• Is it possible for market participants to become a balance responsible party (BRP) in a national or regional market? • How long does it take to become a BRP in a national or regional market? What is the cost to obtain balancing responsibility in a national or regional market (e.g. bank guarantees)?
Frequency	This metric should be monitored every one or two years.
Unit of measure	Regarding the existence of the relevant procedures: Yes/No and qualitative explanation. Regarding time: Number of months (legal requirements and/or as observed in practice if data is available). Regarding costs: Euros as applicable in relation with the different types of procedures/licensing.
Data completeness	NRAs should have access to such information since it is a requisite for the market functioning. As such, the data should be available at the national level.

Metric 3: Percentage of consumers connected to "bundled" DSOs

Metric 3	**Percentage of consumers connected to "bundled" DSOs**
Description	As energy networks are regulated monopolies, DSOs have exclusive access to all customers within their network area. Suppliers bundled with these DSOs have an indirect access to such information. The 3rd Package requires legal, functional and accounting separation of DSOs and suppliers within a vertically integrated utility, although it also specifies exemptions from the requirements for smaller DSOs. This metric focusses on the existence of exempt bundled DSOs and not on other aspects of the 3rd package requirements on unbundling.
Purpose	For new suppliers entering the market, both national and cross-border, equal rules are essential. Bundled DSOs and suppliers acting mutually towards customers might prevent new actors from entering a market. Therefore, there must be a sufficient level of unbundling between suppliers and associated DSOs in order to create a level playing field in retail energy markets. This is essential for all competitive actors to compete on the same terms. The existence of bundled DSOs does not immediately presuppose a problem; nevertheless, it might be a sign to further look into the matter. Through this metric the NRA can monitor the situation and must then evaluate whether the result reveals a problem or whether the market works well despite the existence of customers connected to bundled DSOs.
Source of data	Information request and survey to regulated companies.
Quantification	In order to quantify this metric we suggest that the NRA addresses four main questions:

	• Are there DSOs with bundled suppliers exempted from the legal requirements in the 3rd Package? • What is the minimum standard for being exempted? • How many customers are connected to exempt DSOs? Compare this figure with the total number of customers in the MS. • How many active[6] rival suppliers operate in the exempt DSOs' areas? Compare this figure with the total number of active suppliers in the MS.
Frequency	This metric should be monitored every one or two years.
Unit of measure	Regarding unbundling implementation: yes/no and qualitative explanation. Regarding exempted DSOs and their customers: number and % of total amount of customers in the MS.
Data completeness	NRAs should have access to such information as part of their basic market monitoring

Metric 4: Percentage of consumers with regulated energy prices

Metric 4	**Percentage of consumers with regulated energy prices**
Description	By definition, an end-user regulated price is a price subject to regulation by a public authority, as opposed to an end-user price exclusively set by the interaction of supply and demand. Price regulation can take different forms, such as the setting or approval of prices, price caps, or various elements of these. Regulation can be set ex-ante (price is defined by the responsible authority on underlying information on the market, before market participants conclude contracts based on these prices) or ex-post (price is checked and possibly amended/changed by responsible authority after contracts have been concluded by market participants). The regulatory intervention can also be social, when a regulated price is set for specific consumer groups, e.g. vulnerable customers (social tariffs). Another relevant distinction is about regulation that is permanent and regulation that is designed as temporary, with a clear end date. Regulated energy prices distort competition in the market and might prevent new actors, both national and cross-border, to enter a market.
Purpose	The purpose is to measure the impact of price regulation in the market, with the ultimate goal to abolish the regulated energy prices in order to remove the barrier to entry for a new supplier and to create a level playing field between competing actors.
Source of data	NRAs generally already provide this data for the CEER database, which is used for the ACER/CEER Market Monitoring Report (MMR). Retailers are the main source for this data but, depending on the market, bundled DSOs/suppliers may also be a relevant source.
Quantification	In order to quantify this metric we suggest that the NRA addresses three main questions: • Which types of price regulation apply to gas and electricity markets?

[6] Definition from the CEER database.

	• What is the proportion of customers (and their consumption volume) with regulated energy prices on each type of regulated price and each relevant market? • What is the proportion of customers on social tariffs? If there are different types of social tariffs, aimed at different categories of vulnerable customers, please indicate the proportion of customers on each tariff type.
Frequency	This metric should be monitored at least on an annual basis.
Unit of measure	Regarding the existence of price regulation: Yes/no and qualitative explanation of what regulation exists. Regarding the customers: Proportion of customers and their consumption relative to the total number of customers and consumption in each considered relevant market.
Data completeness	NRAs should have access to such information as part of their basic market monitoring.

Metric 5: Number of common standards for consumer data and for DSO-supplier contract or existence of a national data hub

Metric 5	**Number of common standards for consumer data & for DSO-supplier contracts or the existence of a national data hub**
Description	Efficient, safe and secure data exchange between stakeholders is vital to ensure a well-functioning retail market and the possibility for new suppliers, both national and cross-border, to enter into a market. All suppliers, both existing and new, and other third parties (authorised by the customer) need to be able to access relevant customer meter data on equal and non-discriminatory terms. CEER recommends having one national common standard (CEER Advice on Customer Meter Data Management for Better Retail Market Functioning). In 2016, CEER conducted a comprehensive review of data management models in eight countries. All of the countries participating in the study reported to have a common standard for access to data for suppliers and third parties. Moreover, all but one country reported to be moving to a more centralised model of data management, either in the form of data hubs with storage, or communication hubs. The participating countries generally cited efficient data handling, fair competition and easier access to data as advantages of their more centralised future models. A summary of the reported change from current to future models is shown below. More details can be found in the CEER Review of Current and Future Data Management Models (C16-RMF-89-03). With a supplier centric model there is a need for agreements between DSOs and relevant suppliers. This might become a burden and even a barrier for small actors on a market. Where available and feasible, the existence of a data hub is an alternative option to ensure access to information on equal and non-discriminatory terms, including the implementation of a common standard. A data hub simplifies the market structure further, as suppliers only communicate with a centralised hub rather than with several DSOs. The roll out of smart meters may also make access to information on equal and non-discriminatory terms easier.

Purpose	The purpose of this metric is to monitor the possibility of accessing information easily for suppliers, aggregators and other third parties on the retail market. The lack of access to consumer data is a barrier for new actors, both national and cross-border.
Source of data	Possible sources of data include the following: the data hub or the metering operator regarding the common standards for historical data; the metering operator regarding the common time-of-use data; and the DSOs regarding DSO-supplier contracts.
Quantification	In order to quantify this metric it will be necessary for the NRA to examine whether there are set processes regarding access to customers data for authorised supplier or third party. It will be important to show the MS level of implementation of the advice on data management or if there is a functioning data hub, which meets the functionality demands set by the European Commission. More specifically, in order to quantify this indicator the NRA should consider the following questions: • Is there a procedure containing common standards regarding the accessibility of data for suppliers and third parties? What kind of data is covered by the procedure (in particular, is historic consumption information, defined in metric 18, included)? • Is there a procedure for contracts between DSO-supplier in a MS where a supplier centric model is applicable? • Is there a national data hub? What are its main features (e.g. who runs it and to what extent does it rely on explicit customer consent for data sharing with third parties)?
Frequency	This metric should be monitored every one or two years.
Unit of measure	Yes/or no for all the questions and related qualitative explanations
Data completeness	NRAs should have access to such information as part of their basic market monitoring.

Metric 6: Availability of time-of-use metering and, where applicable, additional fee paid by the consumer to be able to have time-of-use price vs. traditional metering

Metric 6	**Availability of time-of-use metering and – where applicable – additional fee paid by the consumer to be able to have time-of-use prices vs. traditional metering and profiling**
Description	The availability of smart metering equipment and systems which allow time-of-use meter readings is a pre-requisite for consumers to be able to choose implicit demand response and flexibility schemes. Smart meters may also enable explicit demand response services through a dedicated standard interface, either as mandatory equipment or as an option. Availability of such metering might also include an additional fee for the customer.

Purpose	The purpose of this metric is to determine if customers have the possibility to be active on the market through demand response or flexibility schemes. If the customer cannot access time-of-use meter readings then this might distort competition on the retail market for new suppliers, aggregators and third parties with innovative contracts, as well as restrict market choice for customers. Lack of time-of-use-metering, such as hourly readings, hinders innovation and development on the market as a whole.
Source of data	Information request to DSOs, metering operators and retailers (in those markets where retailers may be responsible for meters).
Quantification	We suggest that the NRA answer the following questions: • Are meters for time-of-use metering available for customers in each relevant market? • What type of time-of-use metering is available, e.g. 15 minute, half-hourly, hourly metering, day/night metering? And such meters for which the timeframe is linked to the market settlement period? Consider both electricity and gas meters. • How many time-of-use meters of each type are there in the MS? What is their number relative to the total number of metering points? • Is there an additional fee to install these meters in each relevant market? How much does it cost?
Frequency	This metric should be monitored at least on an annual basis.
Unit of measure	Regarding the availability of time-of-use metering: Yes/no and qualitative explanations. Regarding the share of time-of-use meters, percentage: Number of installed meters relative to total number of metering points. Regarding the additional fee to access these meters: Euros for installation.
Data completeness	NRAs should have access to such information as part of their basic market monitoring, although the detail on costs may be more difficult to obtain.

3.3 Key property III: Close relationship between wholesale markets and retail prices

Well-functioning retail energy markets are dependent on well-functioning wholesale energy markets. Organised and transparent wholesale markets set the market value of energy as a commodity, thereby providing the foundation for the prices that consumers pay in retail energy markets. These metrics only concern the energy component of the total retail energy price.

Suggested analysis to accompany metric 7 and 8: Break down of the cost components of the total retail energy price

Accompanying these metrics should be a table with a breakdown of the total retail energy price, showing the shares that the energy component, network tariff, taxes and other components (e.g. capacity component, RES-charge) respectively constitute of the total price that consumers pay. This is important because it puts metrics 7 and 8 in perspective. In addition to this it is essential to clarify the right consumption profile, because it affects the breakdown of the total retail energy price.

Metric 7: Correlation between wholesale and retail energy prices

Metric 7	Correlation between wholesale and retail energy prices
Description	Well-functioning retail energy markets depend on well-functioning wholesale energy markets. Organised and transparent wholesale markets determine the price of energy as a commodity. The relationship between the energy component of the total retail price and the wholesale price is important, as it reveals what consumers are paying for their energy relative to the underlying wholesale market price. This metric concerns only the energy component of the total retail price, which is separate from network tariffs, taxes and surcharges.
Purpose	Close correlation between wholesale and retail prices can ensure that consumers receive correct price signals from wholesale markets. Price signals may function as an incentive for demand response. Consumers may receive price signals from wholesale markets through the energy component of the retail price, if the pricing of this component follows variations in the wholesale price. This depends largely on the price structure of the contract the consumer has agreed with the retailer. Price structures may vary from hourly pricing set against wholesale markets at one end, to fixed prices at the other. The ability of retailers to offer contracts that have a close correlation to wholesale markets depends on their ability to access and procure energy in a well-functioning wholesale market. This analysis therefore presumes that wholesale markets are well functioning, organised and transparent. Given that consumers can choose different pricing options with different degrees of correlation, e.g. hourly wholesale pricing, standard variable pricing or fixed pricing, this analysis should use aggregate price *per contract type* for comparison with wholesale markets. Both flexible and fixed price contracts should correlate with wholesale markets at the time of offering, reflecting the inherent price-risk structure of the contracts, to different extents. For example, with a wholesale-based contract the customer carries the risk of the price variation, whereas with a fixed-price contract the supplier could carry the risk of the price variation.
Source of data	Information request to retailers, price comparison tools or other parties (e.g. statistical bureaus) that collect price data for retail energy contracts. The data should differentiate between different types of contracts offered to households and business consumers, e.g. wholesale-based price, standard variable price, fixed price. The wholesale price data should be day-ahead and forward prices from power/gas exchange/hubs.
Quantification	Retail and wholesale price data should be monthly average data, for a minimum of three consecutive years. If the data is weighted, the method of weighting must be clearly specified. Only the energy component of the retail price can be used for comparison against wholesale price data. The data should be placed in a time series graph. The energy component should be separated from bundled products.

	Monthly average retail price data for each contract type should either be prices effectively paid (e.g. what suppliers actually billed consumers) or prices on contract offers (e.g. what is listed in a price comparison tool), weighted at consumption values that are representative for each country. For example, the ACER/CEER MMR uses 5,000 kWh/yr for electricity and 15,000 kWh/yr for gas. In the absence of retail price details by contract type, the methodology used by the ACER/CEER MMR may be used. Wholesale prices should be quantified as the monthly average hub/exchange prices, where available. A nationally specific quantification of the wholesale price may be added to transparent market data. The source and type of all price data used for the analysis, and any method of quantification used, must be clearly specified.
Frequency	This metric should be monitored at least on an annual basis.
Unit of measure	Unit prices should be expressed in terms of Eurocent/kWh
Data completeness	Foreseeable issues include availability of retail price data by contract type as well as the availability of wholesale prices in the absence of transparent wholesale markets.

Metric 8: Mark-up between wholesale and retail energy prices

Metric 8	**Mark-up between wholesale and retail energy prices**
Description	Well-functioning retail energy markets depend on well-functioning wholesale energy markets. Organised and transparent wholesale markets determine the price of energy as a commodity. The relationship between the energy component of the total retail price and the wholesale price is important as it reveals what consumers are paying for their energy relative to the underlying wholesale market price. This metric concerns only the energy component of the total retail price, which is separate from network tariffs, taxes and surcharges. Mark-ups are not precisely comparable to the suppliers' final profits. Suppliers have to pay operational costs and taxes out of this margin. Mark-ups represent the gross margin, while the actual or net margin will depend significantly on operating costs and consumption levels. However, the evolution of mark-ups may serve as an indication of the level of retail competition and the "responsiveness" of the retail to wholesale prices over time.
Purpose	The mark-up between wholesale and retail prices reveals whether consumers are paying a fair price for energy relative to the underlying wholesale price. The responsiveness of the mark-up relative to rising or falling wholesale prices is essential for this analysis. The level of the mark-up will depend on the price structure of the contract the consumer has agreed with the retailer. Price structures may vary from hourly pricing set against wholesale markets at one end, to fixed prices at the other. This analysis presumes that wholesale markets are well functioning, organised and transparent.

	By analysing the mark-up based on different contract types, e.g. wholesale-based or fixed pricing, the analysis reveals which contract types are the most beneficial for consumers. Different contract types should have different levels of mark-up to wholesale markets, reflecting the differences in the inherent price-risk structure of the contract type. For example, with a wholesale-based contract the customer carries the risk of the price variation whereas with a fixed-price contract the supplier could carry the risk of the price variation.
Source of data	Information request to retailers, information available on PCTs or from other institutions (e.g. statistical bureaus) that collect price data for retail energy contracts. The data should differentiate between contracts offered to households and business consumers. The wholesale price data should be day-ahead and forward prices from power/gas exchange/hubs. Where transparent market data is not available, the methodology of the ACER/CEER MMR should be used.
Quantification	Retail and wholesale price data should be monthly average data, for a minimum of three consecutive years. If the data is weighted, the method of weighting must be clearly specified. Only the energy component of the retail price can be used for comparison against wholesale price data. The mark-up is quantified as the monthly difference between the retail price and the wholesale price, expressed in eurocent/kWh. The data should be placed in a time series graph. The energy component should be separated from bundled products. Monthly average retail price data for each contract type should be either prices effectively paid (e.g. what suppliers actually billed consumers) or prices on contract offers (e.g. what is listed in a price comparison tool), weighted at consumption values that are representative for each country. For example, the ACER/CEER MMR uses 5,000 kWh/yr for electricity and 15,000 kWh/yr for gas. In the absence of retail price details by contract type, the methodology used by the ACER/CEER MMR may be used. Wholesale prices should be quantified as the monthly average hub/exchange prices, where available. A nationally specified quantification of the wholesale price may be added *in addition* to transparent market data. The source and type of all price data used for the analysis, and any method of quantification used, must be clearly specified.
Frequency	This metric should be monitored at least on an annual basis.
Unit of measure	Unit prices should be expressed in terms of Eurocent/kWh
Data completeness	Foreseeable issues include availability of retail price data by contract type as well as the availability of wholesale prices in the absence of transparent wholesale markets.

3.4 Key property IV: A range of offers, including demand response

A well-functioning market is characterised by innovation and the range of products and services offered to consumers. In general, retailers' ability to offer a significant number of commercial options - coupled with consumers' ability to compare the offers and take informed decisions - is a sign of healthy competition and innovation.

Demand response can be defined as the capacity to change electricity usage by end-use customers (including residential) from their normal or current consumption patterns in response to market signals, such as time-variable electricity prices or incentive payments, or in response to acceptance of the consumer's bid, alone or through aggregation, to sell demand reduction/increase at a price in electricity markets or for internal portfolio optimisation. The valuation of demand response can be done explicitly or implicitly: explicit demand response is sold as a product on a market and therefore requires a specific control (ex-ante and/or ex-post). Implicit demand response does not need such a process since it is not sold to anyone and remains only for the benefit of the final consumer and the corresponding retailer or the Balance Responsible Party (BRP)[7] as an optimisation respective of its sourcing costs or imbalances (e.g. via a payment organised between the independent flexibility service provider and the supplier).

Metric 9: Availability of a variety of pricing and billing options

Metric 9	**Availability of a variety of pricing and billing options**
Description	This metric describes two ways of differentiating an offer (pricing and billing) in retail energy markets. Retailers may offer different products based on the way in which they are priced or billed. The consumers' bill contains key information, and may consist of information about the energy component price, the network tariff and taxes paid. This metric is aimed at the household market and possibly SMEs when and where applicable.
Purpose	Various options of pricing and billing can present innovation in the market and create benefits for the customer. Examples of various pricing options may be fixed pricing, variable pricing, or wholesale-based pricing. Wholesale pricing may be hourly (based on time-of-use metering), or monthly (based on an arithmetic mean, or load profile adjusted day-ahead price for the previous month, where time-of-use metering is not available). With wholesale pricing, the supplier earns its margin through an add-on per kWh or a monthly fee. Consumers should have the option to choose to be exposed to time-varying electricity prices, which reflect the value and cost of electricity and transportation at the moment of consumption. Equipped with this information, consumers can make conscious choices – or automate the decision – to use less electricity at times of high prices and thereby reduce their energy bill. Variations of billing options could be many, falling essentially under two broad categories: advance payments or post-meter reading payments. Post-meter reading billing should be advocated for consumers with time variable pricing, as this ensures that consumers are billed for the actual energy consumed during the billing period. As such, advance payments may be a barrier to demand response unless a correct settlement takes place after each consumption period. Opportunities for a variety of pricing and billing options should enable new suppliers with innovative ideas on pricing and billing to enter a market. If such opportunities are severely restricted, this might distort competition.

[7] The sharing of benefits between customer and supplier/BRP can be different depending on the arrangements between these parties.

Source of data	Information requests to retailers and information available on PCTs are the most common sources of this data. The ACER/CEER MMR already provides an overview of the main pricing options for most capital cities MSs, based on PCT information.
Quantification	This metric aims to capture the variety of pricing and billing options available to customers in a relevant market. It does not require a detailed monitoring of the offers at each supplier level, although this could provide a useful piece of complementary information to understand the pricing and product strategies followed by different suppliers. Another relevant piece of complementary information could be the number of customers on each pricing and billing option. In order to quantify this metric the NRA should address the following two sets of questions: 1) Is there a variety of pricing options? Tick boxes for the yes or no options below. Variable price set, and announced, ahead of time (ex-ante). Example: Price is changed every month and announced before the start of the month. ☐ Variable price that changes 4-12 times per year ☐ Variable price that changes more than 12 times per year Wholesale-based price announced ex-post plus fee and/or mark-up announced ex-ante. Example: The wholesale price changes every month and is announced after the month has ended, when the supplier knows what it paid on average during the previous month. ☐ Price settled against monthly average wholesale ☐ Price settled against daily/weekly average wholesale ☐ Price settled against hourly average wholesale Fixed price stipulated in the contract ahead of time. Example: Price and fee for the following 12 months are announced in the offer before the customer signs the agreement. ☐ Fixed 3-11 months ☐ Fixed 1-3 years ☐ Fixed 4 years or longer Mixed price based on both fixed and variable components. Example: 50% of the consumption is billed according to fixed rate (winter) and 50% according to a variable price (summer) component. ☐ Mix of variable and fixed price ☐ Pricing method varies between seasons Other price that does not fit description above ☐ Other pricing 1 (specify) _____ ☐ Other pricing 2 (specify) _____ ☐ Other pricing 3 (specify) _____

	2) Are there a variety of billing options? Tick boxes for the yes or no options available below. ☐ Direct debit ☐ Bank transfer ☐ SEPA[8] ☐ Credit card ☐ Cash ☐ Pre-payment ☐ Other (specify) _____ All pricing and billing options should refer to viable options, i.e. it should be possible for the addressed consumer to utilise these options.
Frequency	The frequency for the monitoring of this metric may range from monthly to yearly, depending on the relevant market circumstances.
Unit of measure	Yes/or no for all the questions and any relevant qualitative explanations
Data completeness	NRAs should have access to such information as part of their basic market monitoring, although the level of detailed breakdown may vary.

Metric 10: Availability of value added services for implicit demand response and self-generation

Metric 10	**Availability of value added services for implicit demand response and self-generation**
Description	This relates to the availability of contracts containing price mechanisms, and/or added services that allow consumers to reduce their load or shift it from peak to off-peak periods, as well as to self-generate. Availability of market infrastructure, e.g. smart meters, and procedures enabling consumers to receive the correct price settlement are essential to make implicit demand response and self-generation an established viable option for consumers.

[8] The Single Euro Payments Area (SEPA) aims to create a true European Single Market for retail payments in euro, and makes all electronic payments in the euro area as easy as cash payments. SEPA enables fast and secure transfers between bank accounts anywhere in the euro area. With SEPA a household customer can use their home bank account to pay bills in any eurozone country. Shopping abroad, a household customer can use their own bank debit card to make a payment in euro, as they would in their home country. The SEPA Regulation (EC 260/2012) was adopted in 2012, and 1 February 2014 was originally set as the implementation date for all countries within the eurozone. The Regulation was amended in January 2014 (IP/14/6) to extend the deadline to 1 August 2014. Non-eurozone countries have until 31 October 2016 to implement SEPA for their transfers in euro.

Purpose	The availability of demand response offers and flexibility services can indicate an innovative, competitive and diversified market. It can offer consumers the opportunity to lower energy costs by adapting to time varying prices that reflect price formation on well-functioning wholesale market e.g. settlement against hourly prices. For customers it is essential to get clear information regarding the conditions when a contract is bundled e.g. with energy-efficiency services, products, maintenance services or other add-ons such as value added services. A second purpose of this metric is to determine if the customers have the possibility to self-generate their electricity and also to feed the surplus into the system. Fair access to market mechanisms and systems through which prosumers can feed energy into the energy networks are essential. It is, however, crucial that the contract terms for the market arrangements, mentioned above, do not disadvantage the customer or limit customer benefits.
Source of data	Survey to retailers and energy service companies
Quantification	In order to quantify this metric the NRA should address the following questions: • Are there contracts available for implicit demand response such as time-of-use contracts or flexibility contracts? • What kind of value added services or products that contribute to demand flexibility are available for customers? (Automatically controlled or supplied with demand response switch) ☐ Hot water heaters ☐ Storage – batteries ☐ Smart thermostat ☐ Gas heater ☐ Air conditioning ☐ Washing machines ☐ Refrigerators ☐ Electric car chargers ☐ Maintenance services ☐ Other Specify other: Questions regarding the conditions for self-generation. Questions regarding whether the surplus from self-generation can be fed into the system • How many consumers participate in implicit DR through a contract? • How many customers have contracts, which include feed in from electricity, and/or gas from self-generation? • Are there appliances with demand response switches or other connections available on the electricity and gas market?
Frequency	The frequency for the monitoring of this metric may range from monthly to yearly, depending on the relevant market circumstances
Unit of measure	Yes/No and a qualitative elaboration, multiple choice. On self-generation: number of customers relative to the total amount of customers.

Data completeness	This is an area of the market that is developing and that NRAs may not have started monitoring yet, hence data may not be complete.

Metric 11: Availability of online offers

Metric 11	**Availability of online offers, bills, contracts and online customer service.**
Description	The European Commission's Digital Agenda proposes to better exploit the potential of Information and Communication Technology (ICT). The availability of different user-friendly channels through which a customer can interact with the market actors is a sign of innovation in the retail market.
Purpose	The purpose of this metric is to monitor innovation related to the use of ICT. If customers can interact with market actors in executing key contractual processes such as comparing different offers, signing up to an offer and receiving a bill online, as well as getting online customer service (i.e. the 'customer journey'), this can be seen as a sign of innovation and progress in the market. The focus should be on identifying whether retailers provide these options and whether these options are available to all categories of consumers (there may be some that, for geographical or technical issues, may not have access to these online offers). This metric is closely related to metric 17, which refers to the access to an independent and verified PCT.
Source of data	PCTs, and information requests to retailers.
Quantification	In order to quantify this metric the NRA should consider the following questions. These questions are linked to the 'customer journey'. • Are offers comparable online and/or through digital applications for all MS customers? If not, please indicate why and for what proportion of customers this is not the case. • Can contracts be signed online through the PCT or otherwise for all MS customers? If not, please indicate why and for what proportion of customers this is not the case. Is management of energy contracts online and/or through digital applications available to all MS customers? • Are bills available online? • Is customer service available through online channels
Frequency	The frequency for the monitoring of this metric may range from monthly to yearly, depending on the relevant market circumstances.
Unit of measure	All questions: yes/no and possible number of customers and qualitative explanations (especially if a "no" answer is provided).
Data completeness	This is a relatively new monitoring area and NRAs may not have developed it yet, hence data may not be complete.

Metric 12: Availability of contracts guaranteeing the origin of energy

Metric 12	**Availability of contracts guaranteeing the origin of energy**

Description	This metric measures the availability of specific contracts, for each relevant market, containing information on the source and origin of the electricity and/or gas procured by the supplier. The contracts should specify the source(s) of energy as well as the supplier's commitment on how to obtain this [e.g. by acquiring Guarantees of Origin (GO)].
Purpose	The purpose of this metric is to assess whether products with a specific origin and source, mostly renewable sources, are available for consumers. The availability of such contracts is a sign of innovation on a market. .
Source of data	PCTs, and information requests to retailers.
Quantification	In order to quantify this metric the NRA should consider the following questions: Are there contracts with a specific source guaranteed for each relevant market (e.g. contracts guaranteeing the source to be from wind, water or solar)? Is it possible for customers to sign contracts such as those listed below? Tick the box if the option is available. Guarantees for energy sources (exclusively) ☐ Hydro ☐ Wind ☐ Solar ☐ Biomass ☐ Nuclear ☐ Fossil (any) ☐ Specific plant (any type, such as a specific wind farm, etc.) ☐ Other (specify) Guarantees for energy sources (in combination) ☐ Hydro ☐ Wind ☐ Solar ☐ Bio What is the share of the above contracts that are available in the market and how many suppliers offer them? This should give an indication of whether the availability is actually meaningful.
Frequency	The frequency for the monitoring of these offers may range from monthly to yearly, depending on the relevant market circumstances. On the other hand, the update of the Guarantees of Origin registry will generally happen once per year.
Unit of measure	All questions: yes/no and possible qualitative explanations (especially if a "no" answer is provided).
Data completeness	NRAs may already collect this data as part of the implementation of the renewable directive and disclosure of the source of electricity sold to end-users by suppliers, though this does not necessarily imply that there are contracts with specific origin and/or that these are supervised. Some MSs also have guarantees of origin and disclosure for gas sold to end-users by suppliers.

Metric 13: Availability of explicit demand response offers

Metric 13	Availability of explicit demand response offers
Description	This metric monitors the availability of products that provide explicit demand side flexibility in the market. In explicit demand response the "freed-up/shifted" electricity is traded in electricity markets or used for other purposes. Consumers receive specific remuneration to change their consumption upon request (using more or using less), e.g. triggered by activation of balancing energy, differences in electricity prices or a constraint on the network.
Purpose	The purpose of the metric is to assess if there are explicit demand response opportunities available and to which customers. In particular, it aims at identifying what, if any, market arrangements exist, allowing customers to free up or shift electricity usage and trade it in a market place. Moreover, it is of particular interest to monitor the flexibility capacity that is available on the market through these products.
Source of data	Information is likely to come from different entities according to the use of flexibility and the related main market body: • For balancing and reserve markets: TSOs, as already required by European regulation (article 17 of Commission Regulation (EU) No 543/2013 of 14 June 2013 on submission and publication of data in electricity markets) • For local system support services: DSOs. • For wholesale markets: reporting by different market actors may be necessary, based on clear rules protecting sensitive information.
Quantification	In order to quantify this metric, the NRA should address the following questions: • Are explicit demand response opportunities available in each relevant market? • How much capacity/volume is available through the use of explicit demand response contracts on an annual basis? Use a metric based on capacity for market mechanisms essentially based on availability (balancing and ancillary services, and system adequacy mechanisms) and a metric based on volume for flexibility sold into the market annually for the wholesale market and some reserves market where energy is traded.
Frequency	The frequency for the monitoring of this metric may range from monthly to yearly, depending on the relevant market circumstances.
Unit of measure	Regarding explicit demand response opportunities: ☐ Possible ☐ Not possible ☐ Possible but contracts not available ☐ Possible and contracts available

	☐ Possible but no knowledge if such contracts are available. Regarding capacity measure: kW in total or proportion of total peak-demand. Regarding volume measure: kWh in total or proportion of total demand.
Data completeness	This is a new monitoring area for most NRAs. The gathering of data may prove difficult and, in the case of the capacity measure, may require estimates.

3.5 Key property V: High level of awareness and trust

In well-functioning retail markets, consumers are aware of the most relevant features for engaging in markets; and they trust the market.

Metric 14: Percentage of consumers knowing they can switch supplier

Metric 14	**Percentage of consumers knowing they can switch supplier**
Description	A precondition for consumer participation in retail energy markets is awareness and knowledge about the possibility to make an active and informed choice. This includes choosing another supplier, choosing another contract with their current supplier, or deliberately staying with their current supplier. This metric focusses on switching supplier. Recent studies show that even in liberalised markets a significant share of household consumers is insufficiently aware of the possibility to switch supplier and thus reaping key benefits of market liberalisation (cheaper energy, increasing competition, etc.). While market liberalisation brings a number of rights for consumers, switching supplier can be seen as crucial.
Purpose	The metric is used to measure the awareness of consumers about a key consumer right and how this awareness varies over time. Widespread awareness of this right facilitates market participation, which is key to well-functioning retail energy markets.
Source of data	NRAs may rely on existing national consumer surveys.
Quantification	This indicator should be the result of a survey based on a representative sample of the consumer population in terms of gender, age, location, socio-economic category. The targeted interlocutor is the person in the household in charge of electricity and gas bills payment. There should be different panels for gas and electricity. The survey questions should cover the following dimensions: factors determining the choice of supplier, the possibility to choose a supplier, etc. After consultation with national experts in this field (e.g. consumer survey companies), the questions could read as follows, though NRAs are welcome to use questions that would lead to similar results: “In your opinion: 1. The choice of an [electricity / gas] supplier is determined by the geographic area where you live? ○ Yes ○ No [correct answer] ○ No opinion 2. Every household can choose its electricity supplier?

	○ Yes [correct answer] ○ No ○ No opinion 3. Can you quote the name of 3 [electricity / gas] suppliers? ○ 3 or more correct answer ○ 2 correct answer ○ 1 or less correct answer ○ Mention companies that are not electricity / gas suppliers (e.g. DSO, TSO, etc.)"
Frequency	This metric should be measured annually or, at least, every 3 years
Unit of measure	For each question, percentage of consumers choosing the different possible answers.
Data completeness	N/A

Metric 15: Percentage of consumers who know that DSOs are responsible for continuity of supply and, where applicable, metering

Metric 15	**Percentage of consumers who know that DSOs are responsible for the continuity of supply and, where applicable, of metering**
Description	A precondition for consumer participation in retail energy markets is awareness and knowledge about the possibility make an active and informed choice. It also involves some 'basic knowledge about how the market works. This metric focusses on the awareness about the role of the DSO. In particular about the responsibility of DSOs for continuity of supply, as well as the awareness that switching to another supplier has no impact on continuity of supply. Such a concern is often given by consumers as one of the main reasons for not switching supplier.
Purpose	The metric is used to measure the understanding of retail market functioning principles of consumers. This could help NRAs to raise consumers' awareness and therefore increasing the confidence of consumers in the market.
Source of data	NRAs may rely on existing national consumer surveys.
Quantification	This indicator should be the result of a survey based on a representative sample of the consumer population in terms of gender, age, location, socio-economic category. The targeted interlocutor is the person in the household in charge of electricity and gas bills payment. There should be different panels for gas and electricity. Survey questions should cover the following dimensions: link between switching a supplier and changing one's meter, link between supplier switching and power cuts, entity responsible for meter reading, etc. After consultation with national experts in this field (e.g. consumer survey companies), the questions could read as follows, though NRAs are welcome to use questions that would lead to similar results: "In your opinion,

	1. If you switch to another supplier, must you change your meter? ○ Yes ○ No ○ No opinion 2. If you switch to another supplier, do you believe that you will experience more power cuts?? ○ Yes ○ No ○ No opinion 3. If you switch to another supplier, do you believe that your new supplier will be in charge of meter reading? ○ Yes ○ No ○ No opinion 4. Can you quote the name of the company that operates [power lines / gas pipes] to your home? ○ Correct answer [depends on interviewee location] ○ Incorrect answer ○ No opinion"
Frequency	This metric should be measured annually or, at least, every 3 years.
Unit of measure	For each question, percentage of consumers choosing the different possible answers.
Data completeness	N/A

Metric 16: Percentage of consumers trusting the energy market

Metric 16	**Percentage of consumers trusting the energy market**
Description	This metric measures the level of trust in the market and in the individual suppliers. It is important for consumers to be confident that they will be treated fairly and can trust the information that suppliers provide them. A bad experience with one supplier can undermine consumers' confidence in the energy market as a whole, causing them to disengage in the long term. And, because energy is an essential service, consumers should be able to expect to receive fair treatment from their own and other suppliers.
Purpose	The metric is used to measure the consumer's trust in the energy markets. A high level of consumer confidence in the market allows for a more active participation. However, trust is a complex concept and when assessing the situation, an NRA must be careful to attain an accurate picture of the situation. In addition to the outcome of this metric, more background information, including the results from the other metrics, is necessary to fully understand the situation.
Source of data	NRAs may rely on existing national consumer surveys or on the DG Justice Consumer Scoreboard.

Quantification	This indicator should be the result of a survey based on a representative sample of the consumer population in terms of gender, age, location, socio-economic category. The targeted interlocutor is the person in the household in charge of electricity and gas bills payment. There should be different panels for gas and electricity. Survey questions should cover the following dimensions: consumer evaluation of competition, consequence of competition in terms of service quality and price development, etc. NRAs are welcome to define questions that best fits their national context after consultation with experts in surveys. A large set of pilots is provided as an example of possible approaches.
Frequency	This metric should be measured annually or, at least, every 3 years.
Unit of measure	For each question, percentage of consumers choosing the different possible answers.
Data completeness	N/A

3.6 Key property VI: Availability of empowerment tools

The aim of consumer empowerment is to enable consumers to engage effectively with the market. Tools to facilitate this engagement should be in place and should be easily accessible to customers.

Metric 17: Percentage of consumers having access to at least one independent and verified price comparison tool

Metric 17	**Percentage of consumers having access to at least one independent and verified price comparison tool**
Description	Percentage of consumers having access to offers through at least one independent and verified price comparison tool
Purpose	This metric is used to measure whether the consumer has the possibility to identify the best offers. The easier the consumer can estimate available savings, the more informed their decision will be to either switch to a better offer or stay with the current deal. An independent and verified price comparison tool (PCT) is a powerful empowerment tool to make comparisons easier for consumers. A PCT is a tool, generally a web page, which lists all the offers available to the consumer and where they can evaluate the potential benefits of switching. Such a tool can be considered: - Independent: as long as it is free from any commercial bias. - Verified: if the check made by the NRA, or another competent authority, shows that the tool is correct, accurate and exhaustive. o Exhaustiveness: all prices and products available for all customers should be shown as a first step. If not possible, the Comparison Tool should clearly state this before showing results. After the initial search, the option to filter

	results should be offered to the customer. ○ Correctness and accuracy: price information used in the comparison should be updated as often as necessary to correctly reflect prices available on the market.
Source of data	This indicator should be the result of research made by the NRA.
Quantification	The percentage of consumers is calculated on the basis of the number of consumers that have access to an independent and verified comparison tool, relative to the total amount of consumers. This PCT has been identified as an independent and verified tool by the NRA. This metric should be calculated separately for gas and electricity. Similarly, metric 11 should also focus on whether at least one of such PCTs lists offers that are relevant for all categories of consumers (for geographical or technical issues there may be some consumers who cannot find relevant offers on any PCTs). "Having access to a PCT" requires that consumers can actually find at least one alternative offer from an alternative supplier for their connection point, assuming that they can access the internet. (The intention is not to measure the possibility for consumers to access the internet.)
Frequency	This metric should be measured annually.
Unit of measure	Percentage of consumers having access to relevant offers through an independent and verified price comparison tool
Data completeness	N/A

Metric 18: Percentage of consumers having online access to historical consumption information

Metric 18	**Percentage of consumers having access to online historical consumption information**
Description	Percentage of consumers having access to online historical consumption information
Purpose	This metric is used to measure the possibility for consumers to access their consumption data through online tools. Having access to accurate historical consumption data enables consumers to compare alternative offers available in the market and make informed choices. It is also important for a consumer to get insight into their historical consumption in relation to the impact on the bill. This may, in turn, help towards a more responsible use of energy. Online access seems the most convenient way to access consumption data when required, especially in the case of a large amount of data (such as hourly billing).
Source of data	Research conducted by the NRA and, potentially, information requests to retailers and/or regulated companies.
Quantification	Data available to the consumer must go back at least 3 years, if such data is available to the concerned supplier or DSO (if the customer is in the supplier / DSO portfolio for less than 3 years, the data available must cover the whole period starting from the entry of the customer in the portfolio).

	The percentage should be broken down into four categories depending on the level of detail provided: - annual data; - monthly data; - daily data; - all the data required by the current supplier in order to proceed to billing: consumption on each billing period (annual, monthly, peak / off-peak, hourly,…). The metric should be calculated separately for gas and electricity.
Frequency	This metric should be measured annually.
Unit of measure	Percentage of consumers having access to online historical consumption information relative to the total number of consumers in the member state, to be broken down, if possible, by category as illustrated above.
Data completeness	N/A

Metric 19: Percentage of consumers having access to a standardised supplier switching process (and its duration)

Metric 19	**Percentage of consumers having access to standardised supplier switching process (and its duration)**
Description	Percentage of consumers having access to standardised supplier switching process (and its duration)
Purpose	This metric is used to measure the availability of a standardised supplier switching process for consumers. An easy to use and quick switching process can spur further consumer engagement. This metric will inform NRAs about any needs for measures to improve the existing switching process. According to the 3rd Package, a supplier switch should take no longer than three weeks, and consumers should receive their final bill within six weeks. In the CEER Guidelines of Good Practice on electricity and gas retail market design, with a focus on switching and billing, there are three recommendations regarding the timing on a supplier switch: 1. A switch should be executed as quickly as possible. This could be as quickly as within 24 hours and in any case within three weeks. 2. A switch should be possible any day of the week. 3. No market actor should be able to stop an initiated switch except for limited cases foreseen in the regulatory framework.
Source of data	Research conducted by the NRA and potentially information requests to retailers and/or regulated companies.
Quantification	In order to quantify this metric, the NRA should first of all verify the implementation of the switching process with the DSOs. It should also calculate the average time between: - the date of the switching request made by the supplier, with all required data provided; and - the date when the actual transfer of the client is completed.

	The time required to resolve any legitimate disputes that prevent the transfer according to national regulations should not be included in the calculation.
Frequency	The duration should be measured monthly to annually. The percentage of consumers having access to a standardised switching process should be measured annually.
Unit of measure	Regarding the access of consumers to a standardised switching process: percentage of consumers out of the total number of consumers in the MS. Regarding the duration of the switching process: average number of working days to complete the process across all suppliers.
Data completeness	NRAs should have access to such information as part of their existing market monitoring of 3rd Package indicators.

3.7 Key property VII: Sufficient consumer engagement

A well-functioning market is one in which a number of consumers engage with the market.

Metric 20: Supplier switching rate

Metric 20	**Supplier switching rate**
Description	The rate at which consumers switch or engage with energy suppliers or the wider market, measured on a yearly basis. The switching rate alone may be a crude measure of supplier engagement. In this metric the definition of switching is extended to also include another measure of consumer engagement, namely the renegotiation of contracts.
Purpose	This metric is used to measure the active engagement of consumers in the energy retail market. The supplier switching rate is one of these measures. It is directly linked with the level of competition, since the switching rate affects the market share of competing companies and thus puts competitive pressure on energy suppliers. Supplier switching, or the threat thereof, can stimulate companies to offer better products and services. Supplier switching must be observed over time, as only a long-term perspective can contribute to a better understanding of what triggers supplier switching and how a competitive market reacts to this. In addition to this, renegotiated contracts could be measured. Consumers who actively decide to renegotiate their contracts with their current supplier also put competitive pressure on their energy supplier.
Source of data	Information requests to DSOs/national point of information exchange (data hub) and retailers. Wider measures of household consumer engagement among household consumers may be gathered through survey data (the latter will be consumer perceptions of the switching experience).
Quantification	For completeness, the NRA should quantify both the customer switching to a new supplier and the renegotiation of contracts with the existing supplier. A switch is counted when a consumer moves from one energy supplier to a competing energy supplier. Switches are measured separately for household and business consumers. The definition of switching should follow the methodology established for data collection in the CEER database, feeding into ACER/CEER MMR.

	The number of renegotiated contracts with the existing suppliers should, ideally, exclude automatic roll-overs and changes that only affect payment method or account management. Note that this measure, also defined as "internal switching", is a metric included in the DG JUST Consumer Scoreboard.
Frequency	This metric should be measured annually.
Unit of measure	For the switching rate: Percentage of meter points, supplier customer accounts, and/or consumption volume that switched supplier in a given year relative to the average number of meter points/customer accounts or total consumption volume in the relevant market. For the number of renegotiations: Percentage of number of renegotiations relative to the total number of supplier meter points /customer account (if the data is gathered from suppliers) or consumers (if the data is gathered through a consumer survey).
Data completeness	NRAs have access to such information normally through monitoring or through the national statistical responsible body. Issues with availability of survey data are foreseeable.

Metric 21: Percentage of inactive consumers

Metric 21	**Percentage of inactive consumers**
Description	Inactive consumers are defined here as consumers who have neither switched supplier/product nor actively searched for better deals. As a proxy, consumers considered as inactive are contracted on a default contract and have not made a choice of supplier in the market. The definition of default contract depends on the national context. What constitutes a default contract should be clearly specified when undertaking the assessment.
Purpose	The metric is used to measure the lack of consumer involvement in the market. Inactive consumers represent the share of consumers that do not actively participate in liberalised market processes. Inactive consumers may lack the opportunity to participate in liberalised market processes altogether depending on the national context. The metric can help inform NRAs' policies aimed at improving the level of consumer engagement and stimulating competitive pressure on suppliers.
Source of data	Information requests to retailers (incumbents, default suppliers, or suppliers of last resort) and regulated companies. Consumer surveys can also be used.
Quantification	Number of consumers who have not switched supplier for the last 3 years and are contracted on a default contract. What constitutes a default contract should be clearly specified when undertaking the assessment. Inactive consumers are measured separately for gas and electricity. Inactive consumers are measured separately for household and business consumers. Number of consumers who have never switched (based on survey data). Number of consumers who have not actively searched for better deals within the last 3 years (based on survey data).

Frequency	This metric should be measured annually.
Unit of measure	Percentage: Number of inactive consumers relative to the total number of supplier meter points/customer accounts. Percentage: Number of consumers who have never switched relative to number of consumers. Percentage: Number of consumers who have not actively searched for better deals relative to number of consumers.
Data completeness	Issues with availability of survey data are foreseeable.

Metric 22: Percentage of prosumers

Metric 22	**Percentage of prosumers**
Description	Self-generation of energy allows consumers to become active "prosumers". Being able to produce and consume energy, by using different available technologies (e.g. roof solar photovoltaic panels, batteries), allows the consumer to engage actively in the market. Prosumers are consumers who produce energy on-site, behind a metering point capable of registering at least their hourly generation and consumption, making production data available[9]. Small generation plants connected at distribution level, for which there is not on-site production, are not typically classified as prosumers. The percentage of consumers engaging in distribution-level schemes could nonetheless be relevant to measure, e.g. community initiatives. Equally, this applies to consumers living in multi-dwelling buildings that may have come together to invest in generation capacity.
Purpose	This metric is used to measure the percentage of "prosumers" engaged with the market for self-consumed energy and related services. It indicates the percentage of consumers that participate actively in the energy transition, by producing energy on-site. This could include prosumers living in multi-dwelling buildings that have a metering scheme that differs from the traditional definition of prosumers as being behind one metering point. As a separate measure, the level of consumers engaged in distribution-level schemes in the local community could be measured. Where the latter is measured, this must be clearly specified.
Source of data	This could be DSOs/TSOs or any registers or organisations for prosumers. This list is not exhaustive.
Quantification	The percentage of prosumers is calculated as the share of consumers that are registered and defined as prosumers on the national level. The method of registration and definition may be subject to national specificities; however, if a definition of prosumers also includes generation beyond a consumer's metering point this must be clearly specified. The share of prosumers engaged in schemes in multi-dwelling buildings either as a separate measure, or if specified, as part of the general definition of prosumer. The share of prosumers engaged in local schemes at distribution level.
Frequency	This metric should be measured annually.

[9] CEER Position Paper on Renewable Energy Self-Generation, September 2016.

Unit of measure	Percentage: Prosumers relative to the total number of supplier meter points/customer accounts.
Data completeness	This is a new monitoring area for most NRAs. Data availability and completeness may be an issue.

3.8 Key property VIII: Appropriate protection

In well-functioning retail energy markets, consumers enjoy an appropriate level of protection and there are specific measures to protect those defined as vulnerable customers.

Metric 23: Time between notification to pay and disconnection for non-payment

Metric 23	**Time between notification to pay and disconnection for non-payment**
Description	This is the time period between the notice to pay/notice of disconnection after missing payments and the disconnection of the customer.
Purpose	This metric should be used to assess the level of protection against disconnections due to non-payment, in conjunction with metric 24 on number of disconnections for non-payment. In selected cases, suppliers and/or DSOs can disconnect consumers from electricity and gas networks. Specific consumer protection legislation foresees a number of provisions to mitigate disconnecting household consumers in cases of non-payment of bills. However, if those consumers continue to fail to pay their bills, suppliers and DSOs can disconnect them. Most MSs have installed a procedure for disconnections, which foresees a certain period between non-payment and disconnection, to settle due amounts. That is why this metric should be assessed in conjunction with the other metric on the number of disconnections due to non-payment.
Source of data	This metric should first be evaluated from a legal point of view. To evaluate this metric from a practical point of view, the NRA could submit an information request to either the retailer or the regulated company, depending on the national circumstances, to assess the minimum duration from non-payment to disconnection. The ADR/Ombudsman organisation may be considered as a source for information as well. If complaint handling is run by the NRA, this may be a source of information as well.
Quantification	Number of working days between the notice of disconnection after missing payments and the connection of the customer for both electricity and gas. When answering from a legal point of view, indicate the number of days fixed by law, and when answering from a practical point of view, indicate the average number of working days observed in practice. For the practical measure, consider that only households are included that do not make any payments toward the unpaid amounts (consumption in the past), nor do the households pay any upcoming instalments. It should also be assumed that the delivery of mail, notifications or similar warnings is instantaneous to make it possible to speak about an "absolute minimum" length of this duration. In case the regulated company (DSO) does not know the exact reason for a disconnection, as a proxy the total amount of disconnections by the DSO per request of the supplier, can be assessed.
Frequency	The metric should be measured annually.

Unit of measure	Number of working days, or days.
Data completeness	NRAs should have access to such information as part of their existing market monitoring of 3rd Package indicators.

Metric 24: Percentage of disconnections due to non-payment

Metric 24	**Percentage of disconnections due to non-payment**
Description	In selected cases suppliers and/or DSOs can disconnect consumers from electricity and gas networks due to non-payment.
Purpose	This metric should be used to assess the level of protection against disconnections due to non-payment, in conjunction with metric 23 on disconnection notification time. Specific consumer protection legislation foresees a number of provisions to mitigate disconnecting household consumers in cases of non-payment of bills. However, if those consumers continue to fail to pay their bills, suppliers and DSOs can disconnect them. Most MSs have installed a procedure for disconnections, which foresees a certain period between non-payment and disconnection, to settle due amounts. That is why this metric should be assessed in conjunction with the other metric on disconnections If prepayment meters are widely distributed and used as a tool to manage debt, the proportion of new prepayment meters installed for debt (and especially if they are accompanied by a Court order) should be monitored alongside the number of disconnections for debt.
Source of data	Retailers and/or regulated companies. The ADR/Ombudsman organisation may be considered as a source for information as well.
Quantification	To quantify this metric the NRA should use the following step-by-step approach: 1. Determine the number of disconnected households due to non-payment t for electricity and gas separately during a given year; 2. Determine the share of disconnections by dividing the number of disconnections by the total amount of household metering points for electricity and gas separately during the same year. If applicable, determine also the number of new prepayment meters installed for debt, using the same reference year as that used for disconnections. In case the regulated company (DSO) does not know the exact reason for a disconnection, as a proxy the total amount of disconnections by the DSO per request of the supplier, can be assessed.
Frequency	The metric should be measured annually.
Unit of measure	Percentage of total electricity and/or gas disconnections in a given year, and if available: number and percentage of prepayment meters installed for debt.
Data completeness	NRAs should have access to such information as part of their existing market monitoring of 3rd Package indicators.

Metric 25: Percentage of suppliers using minimum standards for key information in advertising and bills

Metric 25	**Percentage of suppliers applying rules for key information in advertising and bills**
Description	Consumers need to be provided with the means of assessing the offers against each other in a transparent and clear manner. The proportion of suppliers using minimum standards for key information in advertising and bills ideally identified separately and based on Annex 1 of the 2009 Directive, can serve as an indicator of suppliers' compliance with this provision. Rules for key information in advertising and bills are defined as legislation and/or self-regulation.
Purpose	The purpose of this metric is twofold. It monitors the existence in the MS of minimum information standards, as well as the proportion of suppliers complying with them. This is a complex area and when assessing the situation an NRA must be careful to attain an accurate picture of the situation. In addition to the outcome of this metric, more background information is necessary to fully understand the situation.
Source of data	Most likely sources will include legislation/license conditions and research conducted by NRAs on how suppliers comply with the standards. Consumer organisations and/or ADR/Ombudsmen could also be a source of information.
Quantification	At this point there is no one-size-fits-all approach to assess this metric. Ideally, and as a result, the outcome of the metric consists of: Rules for key information in advertising and bills are defined as legislation and/or self-regulation. For each of the rules, the proportion of active suppliers using it out of the total number of active suppliers. CEER encourages NRAs to explore the approach that is most suitable to the national circumstances. As a best practice example we refer to the pilot that is included in this handbook.
Frequency	The metric should be measured annually.
Unit of measure	Yes/no (list of standards) and, if feasible percentage of total amount of suppliers of electricity and/or gas.
Data completeness	This a relatively new and complex monitoring area, for which new research by NRA will be required

Annex 1 – List of abbreviations

Term	Definition
ACER	Agency for the Cooperation of Energy Regulators
BEUC	Bureau Européen des Unions de Consommateurs (European Consumer Organisation)
CEER	Council of European Energy Regulators
DSO	Distribution System Operator
GGP	Guidelines of Good Practice
HHI	Herfindahl-Hirschman Index
MS	Member State
NRA	National Regulatory Agency
PCT	Price Comparison Tool
SME	Small and Medium-sized Enterprise
TSO	Transmission System Operator

Table 1 – List of Abbreviations

Annex 2 – Glossary of terms

Consumer: In this document, the term “consumer” and also customer is used in a broad sense, including: household consumers, prosumers, small and medium-sized enterprises and not-for-profit organisations and large businesses.

National/Regional Data Hub: A collection of data from multiple sources organised for distribution, sharing, and often subsetting and sharing. The national/regional data hub might be owned/operated by one stakeholder, or a combination of stakeholders, and facilitates the storage and exchange of customer meter data. It may or may not be organised as a registered company.

Price: The price is the energy related component of the total cost, excluding the network tariff, taxes and levies.

Prosumer: A consumer who is equipped with self-generation and/or batteries (i.e. producer + consumer = prosumer).

Retailers: An entity with a contractual agreement with end customers relating to the supply of electricity, gas or a value added service or product. The term includes suppliers and third parties.

Regulated companies: Transmission and distribution network companies in the electricity and gas sector, which are under the supervision of National Regulatory Authorities (NRAs). Where relevant, i.e. where they exist and are organised as registered companies, national/regional data hubs may be considered as regulated companies.

Relevant market: A relevant market could be defined either by geographical properties (e.g. DSO areas or national borders) and/or product or consumer categories (e.g. household consumers, small businesses).

Supplier Centric Model: The customer relationship is primarily with the supplier rather than the supplier and the DSO.

Annex 3: Frequency of assessment

Metric	Description	Frequency
1	Herfindahl-Hirschman Index	Annually
2	Time needed and cost of accessing well-functioning wholesale markets and licencing/balancing regimes	Annually or every two years
3	Percentage of consumers connected to “bundled” DSOs	Annually or every two years
4	Percentage of consumers with regulated energy prices	Annually
5	Number of common standards for consumer data and for DSO-supplier contract or existence of data hub	Annually or every two years
6	Availability of time-of-use metering and – where applicable – additional fee paid by the consumer to be able to have time-of-use prices vs. traditional metering	Annually
7	Correlation between wholesale and retail energy prices	Annually
8	Mark-up between wholesale and retail energy prices	Annually
9	Availability of a variety of pricing and billing options	Monthly to yearly
10	Availability of value added services for implicit demand response and self-generation	Monthly to yearly
11	Availability of online offers	Monthly to yearly
12	Availability of contracts guaranteeing the origin of energy	Monthly to yearly
13	Availability of explicit demand response offers	Monthly to yearly
14	Percentage of consumers knowing they can switch supplier	Annually or at least every three years
15	Percentage of consumers who know that DSOs are responsible for the continuity of supply and, where applicable, of metering	Annually or at least every three years
16	Percentage of consumers trusting the energy market	Annually or at least every three years
17	Percentage of consumers having access to at least one independent and verified PCT	Annually
18	Percentage of consumers having access to online historical consumption info	Annually
19	Percentage of consumers having access to standardised supplier switching process (and its duration)	Duration: Monthly to yearly Percentage: Annually
20	Supplier switching rate	Annually
21	Percentage of inactive consumers	Annually
22	Percentage of prosumers	Annually

23	Time between notification to pay and disconnection for non-payment	Annually
24	Percentage of disconnections due to non-payment	Annually
25	Percentage of suppliers using minimum standards for key info in advertising and bills	Annually

About CEER

The Council of European Energy Regulators (CEER) is the voice of Europe's national regulators of electricity and gas at EU and international level. CEER's members and observers (from 33 European countries) are the statutory bodies responsible for energy regulation at national level.

One of CEER's key objectives is to facilitate the creation of a single, competitive, efficient and sustainable EU internal energy market that works in the public interest. CEER actively promotes an investment-friendly and harmonised regulatory environment, and consistent application of existing EU legislation. Moreover, CEER champions consumer issues in our belief that a competitive and secure EU single energy market is not a goal in itself, but should deliver benefits for energy consumers.

CEER, based in Brussels, deals with a broad range of energy issues including retail markets and consumers; distribution networks; smart grids; flexibility; sustainability; and international cooperation. European energy regulators are committed to a holistic approach to energy regulation in Europe. Through CEER, NRAs cooperate and develop common position papers, advice and forward-thinking recommendations to improve the electricity and gas markets for the benefit of consumers and businesses.

The work of CEER is structured according to a number of working groups and task forces, composed of staff members of the national energy regulatory authorities, and supported by the CEER Secretariat. This report was prepared by the SC TF Task Force of CEER's Customers and Retail Markets Working Group.

CEER wishes to thank in particular the following regulatory experts for their work in preparing this report: Ms Katarina Abrahamsson, Mr Olav Sem Berg, Ms Monica Gandolfi, Mr Julien Janes, Ms Katerina Kokesova, Mr Matthias Noorlander, Mattias Johansson and Ms Patricia de Suzzoni.

More information at www.ceer.eu.