



Brussels, XXX
[...] (2013) XXX draft

COMMISSION STAFF WORKING DOCUMENT

Interpretative note on Directive 2012/27/EU on energy efficiency, amending Directives 2009/125/EC and 2010/30/EC, and repealing Directives 2004/8/EC and 2006/32/EC

Articles 9 - 11: Metering; billing information; cost of access to metering and billing information

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ARTICLES 9-11: METERING; BILLING INFORMATION; COST OF ACCESS TO METERING AND BILLING INFORMATION

A. INTRODUCTION

1. Articles 9, 10 and 11 and Annex VII of Directive 2012/27/EU on energy efficiency¹ (hereafter also 'the EED' or 'the Directive') cover metering and billing of individual consumption of energy. .
2. In relation to *metering* of energy consumption, **Article 9** requires Member States to comply with the following main obligations:
 - Ensure that, with exceptions on technical or financial grounds, final customers for electricity, natural gas, district heating, district cooling and domestic hot water are provided with competitively priced meters that accurately reflect their actual energy consumption and that provide information on actual time of use. Member States must ensure that such meters are always provided when:
 - A new connection is made in a new building; or
 - A building undergoes major renovations, as set out in Directive 2010/31/EU² (hereafter also 'the EPBD').
 - Where Member States implement intelligent metering systems and roll out smart meters for natural gas and/or electricity in accordance with Directives 2009/72/EC³ and 2009/73/EC⁴:
 - The metering systems must provide final customers with information on actual time of use;
 - Objectives of energy efficiency and benefits for final customers must be fully taken into account when establishing the minimum functionalities of the meters and the obligations imposed on market participants;
 - The smart meters and data communication must be secure and the privacy of final customers must be in compliance with relevant Union data protection and privacy legislation;
 - In the case of electricity and at the request of the final customer, meter operators must be required to ensure that the meter can account for electricity put into the grid from the final customer's premises;
 - If final customers request it, metering data on their electricity input and off-take must be made available to them or to a third party acting on behalf of the final customer (e.g. an energy services company (ESCO) or energy aggregator)

¹ Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2012/30/EU and repealing Directives 2004/8/EC and 2006/32/EC, OJ L 315, 14.11.2012, p. 1

² Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings (recast), OJ L 153, 18.6.2010, p.13.

³ Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC, OJ L 211, 14.8.2009, p. 55–93

⁴ Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC, OJ L 211, 14.8.2009, p. 94–136

in an easily understandable format that they can use to compare deals on a like-for-like basis;

- At the time of installation of smart meters, appropriate advice and information must be given to final customers in particular about the meters' full potential with regard to the monitoring of energy consumption.
- As regards metering of the use of heating, cooling and domestic hot water:
 - Buildings supplied from a district heating/cooling network or a central source servicing multiple buildings must be equipped with a central heat or hot water meter installed at the heating exchanger or point of delivery;
 - As regards final customers residing in multi-apartment or multi-purpose buildings, whether such buildings are supplied from an external source or a common source within such buildings, individual heat or hot water meters for each apartment or unit in such buildings must be provided by 31 December 2016. However, in buildings where the use of heat meters is not technically feasible or cost-efficient, individual heat cost allocators must instead be installed on each radiator in the individual apartments/units of those buildings. Finally, where this solution is not cost-effective, alternative methods of heat consumption measurement may be considered.

3. **Article 10** in relation to ***billing and billing information*** requires Member State to comply with the following main obligations:

- Where final customers have individual meters, which **are not smart** further to Directives 2009/72/EC and 2009/73/EC (electricity, natural gas, heating, cooling, domestic hot water), where technically possible and economically justified, they must be provided with **billing information as from 31 December 2014** that is accurate and based on actual consumption. Such billing information must be provided at a minimum frequency specified in point 1.1 of Annex VII (stating that final customers should normally be told at least every 6 months or every 3 months if they ask for it or are billed electronically) how much they will be billed for the energy they used in the last period).
 - Member States may fulfil this obligation by ensuring all such final customers are provided with an opportunity for regular self-reading whereby they communicate the readings from their meter to the energy supplier. In such cases, Member States must ensure that billing based on estimated consumption or a flat rate in cases when the final customer has not provided a meter reading for a given billing interval.
- Member States may exempt the consumption of natural gas when it is used for cooking purposes only.
- Where there are smart meters, these must enable accurate billing based on actual consumption (Article 10(2)), and Member States are obliged to ensure that final customers have the possibility of **easy access to complementary information on their own historical consumption**. This must include at least the following information:
 - Cumulative consumption data corresponding to the intervals for which frequent billing information based on actual consumption has been produced. Such data should be made available for at least the three previous years or the period since the start of the supply contract, if this is shorter.

- Detailed consumption data according to the time of use for any day, week, month and year. Such data should be made available to the final customer for the period of at least 24 months or the period since the start of the supply contract if this is shorter.
- **Regardless of whether smart meters are available or not**, Member States must ensure that:
 - Upon request of the final customer, metering data including complementary information on historical consumption is made available to an energy service provider designated by the final customer (e.g. an ESCO or an energy aggregator);
 - All final customers are offered the option of electronic billing information and electronic bills;
 - In or with the bills/billing information for energy consumption the minimum information specified in the Annex VII (part 1.2) is provided in clear and understandable terms. This minimum information must include:
 - i. Current actual prices and actual consumption of energy;
 - ii. Comparisons of final customers' current consumption with consumption in the previous billing intervals (at least the same period in the previous year), preferably in a graphic form;
 - iii. Contact information for organisations where final customers can find more information (e.g. on techniques/technologies to save energy, comparative end-users profiles, etc.);
 - iv. Where possible and useful, comparisons with an average normalised or benchmarked final customer in the same user category;
 - When the final customers request them, information and estimates on energy costs must be provided to them in a timely manner and a format enabling comparison on a like-for-like basis.

4. **Article 11** clarifies that Member States must ensure that final customers receive their **energy bills and billing information free of charge** and that they can access their consumption data free of charge and in an appropriate way.

An exception is provided in the context of heating and cooling in multi-apartment buildings supplied from a district heating or another common heating/cooling source, for cases where the task of measuring, allocation and accounting for actual individual consumption is assigned to a third party such as a service provider or local energy supplier. In that case costs may be passed onto the final customers to the extent that such costs are reasonable.

5. This note aims to provide guidance to Member States on how to apply Articles 9-11 of the EED. The note states the views of the Commission, is not legally binding and is without prejudice to the case-law of the Court of Justice ('the Court') and its development.

B. LEGAL AND POLICY CONTEXT

6. The provisions of the EED on metering and billing information take over some of the provisions of earlier Directives. Directive 2006/32/EC on energy end-use efficiency and

energy services⁵ (which is repealed by the EED) required Member States to ensure that final customers are provided with competitively priced individual meters that accurately reflect their actual energy consumption and provide information on actual time of use. In most cases, this requirement was subject to the conditions that it should be technically possible, financially reasonable, and proportionate in relation to the potential energy savings. When a connection is made in a new building or a building undergoes major renovations, as defined in Directive 2002/91/EC⁶, such individual meters had however always be always provided. Directive 2006/32 also required that clear billing based on actual consumption should be provided frequently enough to enable consumers to regulate their own energy use. In general, these provisions have been taken over in the EED and additional clarification has been provided.

7. The Directives on the Internal Market for Electricity and Gas (Directives 2009/72/EC and 2009/73/EC) require Member States to ensure the implementation of intelligent metering systems to assist the active participation of consumers in the electricity and gas supply markets. As regards electricity, where an economic assessment of the long-term costs and benefits has been made, at least 80% of those consumers who have been assessed positively have to be equipped with intelligent metering systems for electricity by 2020. Where no economic assessment of the long-term costs and benefits is made, at least 80 % of all consumers have to be equipped with intelligent metering systems by 2020 (Annex I(2) of the Electricity Directive). As regards natural gas, no deadline is given but the preparation of a timetable is required, subject to an assessment of long-term costs and benefit (Annex I(2) of the Gas Directive) . These Directives also state that final customers must be properly informed of actual electricity/gas consumption and costs frequently enough to enable them to regulate their own consumption. The EED does not require the roll-out of smart meters as such as this is already covered by Directives 2009/72/EC and 2009/73/EC. However, in the view of the on-going or planned roll-out of smart meters in many Member States, the EED brings clarification as regards ensuring that relevant information from metering and billing will be provided to final customers using smart metering.

C. SCOPE OF THE OBLIGATION

8. Articles 9, 10 and 11 of the EED extend the scope and clarify the substantive provisions of Directive 2006/32/EC on energy end-use efficiency and energy services. The EED provisions that are identical to those in Article 13 of Directive 2006/32/EC will be addressed in this note only when they interact with the implementation of the new provisions.
9. Article 2(23) provides a definition of '*final customers*' as '*a natural or legal person who purchases energy for own end use*'. In the context of obligations established in Article 9(1) and (3) and Article 11(2) in relation to provisions on metering and billing of individual consumption of heating/cooling and domestic hot water, in cases where heating and cooling or hot water is purchased collectively by or on behalf of an association of end-users (for example a group of households responsible for energy consumption in each of

⁵ Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services and repealing Council Directive 93/76/EEC, OJ L114, 24.4.2006, p.64.

⁶ Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings, OJ L, 4.1.2003, p. 65.

the individual apartments in a multi-apartment building), although it is often a housing cooperative who purchases the energy, it is the individual households who are the end-user. Therefore, the definition of final customer should be understood as also covering those end-users as well as the entity purchasing heating/cooling/hot water on behalf of the end-users (e.g. a housing cooperative).

D. OBLIGATION TO PROVIDE METERS AND METERING DATA

10. The provisions of Article 9(1), obliging Member States to ensure – subject to technical feasibility and cost-effectiveness - that final customers are provided with competitively priced individual meters that accurately reflect the final customer's actual energy consumption and that provide information on actual time of use, were introduced by Article 13 of Directive 2006/32/EC. In the EED, this right continues to apply, but is now also extended to final customers residing in multi-apartment and multi-purpose buildings with a common central heating/cooling/hot water system for such a building, which should be provided with such meters as from 31 December 2016 (Article 9(3)).
11. It should be noted that Article 9 does not require the introduction of smart metering systems as referred to in Directives 2009/72/EC and 2009/73/EC. However, it clarifies some issues, namely that *if* Member States introduce smart metering, various obligations then apply under Article 9(2) in particular.
12. In Article 9(1) and Article 10(3), in respect of multi-apartment or multi-purpose buildings, the requirement to provide individual hot water meters refers to situations where the final customer is purchasing domestic hot water provided either from a common boiler or from outside the building (e.g. district heating). For example, if in a multi-apartment building the domestic hot water is produced in a common gas boiler, there should be a common gas meter for that boiler but the individual users of domestic hot water must in addition be provided with a competitively priced hot water meters for each apartment, where technically possible and cost-efficient.
13. According to Article 9(2)(a), smart metering systems for electricity or natural gas must provide final customers with information on actual time of use. However, under Article 9(1), subject to technical feasibility and cost-effectiveness, it should be understood that that all individual meters whether smart or not must have this basic function. The use of the term 'smart metering systems' and not just 'smart meters' in Article 9(2)(a) implies that Member States have a choice as regards the means⁷ through which such metering information is provided to final customers. For example, Member States may require that such metering information is provided via an in-home display collecting data from the smart meter.
14. Article 9(2)(a) does not supersede the requirements of the Measuring Instruments Directive (2004/22/EC)⁸, which requires that an in-built basic display of the meter is

⁷ Article 42 of Commission Recommendation of 9 March 2012 on preparations for the roll-out of smart metering systems (2012/148/EU) encourages Member States to ensure that final customers using smart metering systems are equipped with a standardised interface which provides visualised individual consumption data to the consumer.

⁸ Directive 2004/22/EC of the European Parliament and of the Council of 31 March 2004 on measuring instruments, OJ L 135, 30.4.2004, p. 1–80

available in any case⁹. This is important because such displays would serve as a basis for the calculation of the payment to be made by the final customer, e.g. if the remote reading function of the smart meter failed.

15. As regards the obligation established in Article 9(2)(a) requiring Member States to ensure that the '*objectives of energy efficiency and benefits for final customers are be fully taken into account when establishing the minimum functionalities of the meters and the obligations imposed on market participants*', Member States may consider the Commission Recommendation on the preparations for the roll-out of smart metering systems¹⁰. In any case, it is for Member States to decide which energy efficiency objectives and which benefits to the final customers are taken into account when obliging market participants and setting minimum functionalities for smart meters.
16. As regards the requirement for Member States to ensure the security of smart meters and related data communication and the privacy of final customers in compliance with relevant Union data protection and privacy legislation, detailed advice has already been provided in the Commission Recommendation 2012/148/EU of 9 March 2012. In general, as required by the Data Protection Directive (95/46/EC)¹¹, Member States are responsible for ensuring the privacy of real-time as well as historical information when collecting, storing, processing and communicating the data from the metering of individual energy consumption by final customers.

Article 9(2)(c) requires Member States to ensure that where smart electricity meters are in operation, at the request of the final customer, meter operators provide a meter that can account for electricity put into the grid from the final customer's premises. In relation to Article 9(1) Member States must ensure that such meter(s) are competitively priced, as otherwise this could create a barrier for the development of distributed generation.

17. According to Article 9(2)(d), if final customers request it, metering data on their electricity input and off-take must be made available to them or to a third party acting on their behalf (e.g. an ESCO or an energy aggregator) in an easily understandable format that they can use to compare deals on a like-for-like basis. This requirement applies only to situations where, and to the extent that, Member States implement smart metering systems for electricity. Member States will need to legally establish or otherwise ensure the right for the final customer to decide whether and to whom the metering data on his/her individual consumption can be made available.

Secondly, this provision requires that the Member States ensure that the same metering data that is available to the final customer must be made available to third parties, subject to the request of the final customer. This information would allow an energy service

⁹ According to Article 10.5 of Annex I to the Directive 2004/22/EC of the European Parliament and of the Council on measuring instruments (OJ L135, 30.4.2004, p. 1): '*Whether or not a measuring instrument intended for utility measurement purposes can be remotely read it shall in any case be fitted with a metrologically controlled display accessible without tools to the consumer. The reading of this display is the measurement result that serves as the basis for the price to pay*'.

¹⁰ Commission Recommendation 2012/148/EU of 9 March 2012 on preparations for the roll-out of smart metering systems.

¹¹ Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data, OJ L 281 , 23/11/1995, p. 31.

provider (eg energy aggregators or ESCOs) to give a more accurate service to the final customer

18. Article 9(2)(e) requires Member States to ensure that, during installation of smart electricity or gas meters, final customers must be given appropriate advice and information in particular about the full potential related to the meter reading management and the monitoring of own energy consumption. Transposition of Article 9(2)(e) may be done for example through: (1) establishing the country-wide minimum level/scope of information that should be provided to final customers e.g. by the installers visiting final customers to install smart meters, and/or (2) ensuring relevant training programmes for installers.

This requirement is additional to the requirements of Article 12, under which Member States should take one or more measures to promote energy efficiency among small final customers, which may include broader campaigns accompanying the roll-out of smart meters.

19. Article 9(3) provides clarification concerning the metering of the consumption of heating, cooling and domestic hot water in multi-apartment and multi-purpose buildings which are supplied with heating/cooling or hot water from:

- district heating/cooling;
- a central source servicing multiple buildings; or
- a common central heating/cooling source for a single building.

20. In the case of multi-apartment or multi-purpose buildings supplied with heating or cooling or hot water from external sources, Member States must ensure that a meter is installed at the heat exchanger or the point of delivery to the building. Such meters must be installed by 5 June 2014. No exceptions are foreseen.

21. The EED does not provide a definition of a multi-apartment or multi-purpose building. A multi-apartment building could be understood as a building with at least two apartments. A multi-purpose building could be understood as a building occupied by at least two entities that need to share between themselves the bill for the energy purchased.

22. As regards individual heat metering in multi-apartment and multi-purpose buildings with in the scope of Article 9(3), Member States must ensure that individual meters for each apartment or unit in such building are installed by 31 December 2016 where technically feasible and cost-efficient.

If the installation of individual heat meters is not technically feasible or not cost-efficient, accurate heat cost allocators must be installed for each radiator, unless it is shown by the Member State that this would not be cost-efficient.

23. In interpreting the concept of 'technical feasibility', Member States should bear in mind the explanation of the equivalent concept of 'technical possibility' given in Recital 29. In accordance with this explanation, it can be assumed that individual metering of heat consumption in multi-apartment buildings is technically possible when the installation of individual meters would not require changing the existing in-house piping for hot water heating in the building. By contrast, where the hot water used for heating enters and leaves

individual apartments at several points, the use of individual heat meters is less likely to be technical feasible or cost-efficient. In such buildings, measurements of individual heat consumption can be carried out by means of individual heat cost allocators.

24. In interpreting the concept of 'cost-efficiency', Member States can compare the costs of the installation and maintenance of the meters/heat cost allocators with the benefits for end consumer and other parties (owner/user of the building and individual apartments, energy supplier, etc.). This calculation can for example be based on the methodology provided in the European standard EN 15459 ('Energy performance of buildings - economic evaluation - procedure for energy systems in buildings').

In assessing the benefits of installing individual heat meters/heat cost allocators Member States should take into account different benefits including energy savings among final customers that could be achieved through behavioural changes triggered by the metering data and the billing information based on the measured heat consumption. Various studies indicate that the range of savings due to behavioural change after the introduction of individual metering and billing based on actual consumption of heat often reach 30% in comparison to systems without individual metering and with billing based on flat rates (e.g. per m²)^{12,13}.

25. As 'technical feasibility' and 'cost-efficiency' allow the Member States exceptions to the obligations contained in Article 9, it is for the Member State, bearing in mind the above two paragraphs, to inform the Commission of the technical conditions and economic thresholds or other criteria under which they justify that it would not be technically feasible or cost-effective to comply with their obligations.

In the case of multi-apartment and multi-purpose buildings addressed in Article 9(3), where it is found technically feasible and cost-effective to install individual heat meters but the final customers already have heat cost allocators, then by 31 December 2016 Member States must ensure that individual heat meters are installed. However, it can be assumed that the existence of heat cost allocators is a factor that would normally affect the cost-benefit calculation for the use of individual heat meters.

26. In situations where individual heat cost allocators must be installed for each radiator, in line with the objective of Article 9(3) this obligation would only refer to radiators inside apartments or units in multi-apartment or multi-purpose buildings, not those in common areas of the building.

In accordance with Article 9(1)(b), individual meters for measuring heating or cooling or domestic hot water consumption must always be installed in new multi-apartment or multi-purpose buildings supplied from district heating/cooling, or in those undergoing major renovations as defined in Directive 2010/31/EU. Installation of heat cost allocators or alternative measurement methods are not an option in these cases.

27. Article 9(1)(b) imposes an unconditional requirement to provide individual meters (not heat cost allocators) in cases where a new connection is made in a new building or where

¹² Gullev, L. & Poulsen, M., "The installation of meters leads to permanent changes in consumer behaviour". News from DBDH. Journal 3/2006 pp. 20-24.

¹³ Clemens Felsmann, Juliane Schmidt, Technische Universität Dresden, January 2013, Auswirkungen der verbrauchsabhängigen Abrechnung in Abhängigkeit von der energetischen Gebäudequalität.

a building undergoes a major renovation as defined in Directive 2010/31/EU. If the above scenario arises in relation to heat consumption or cooling, the obligation is limited to cases where the final customers are supplied/plan to be supplied from district heating or cooling. As such, it should be considered an exception to the general framework for the obligation to provide individual heat meters in multi-apartment buildings as referred to in Article 9(3) second paragraph. This means that the provisions of Article 9(3) on what is '*technically possible*' and '*cost-effective*' will not apply to multi-apartment buildings supplied from district heating where these are new buildings or when these buildings undergo major renovation.

E. OBLIGATIONS TO ENSURE THE PROVISION OF BILLING INFORMATION

The distinction between bills and billing information

28. Article 10(3)(d) introduces a distinction between bills (which carry the obligation to settle the due amount) and billing information (which do not, but will normally otherwise contain the same information).

Specific rules for billing information

29. Article 10(1) requires Member States to ensure, by 31 December 2014, that billing information is accurate and based on actual consumption, in accordance with point 1.1 of Annex VII. This provides that billing information should be made available at least quarterly upon request or where customers have chosen electronic billing, otherwise twice a year. Under Article 10(1), these minimum requirements do not need to be followed if it is not '*technically possible and economically justified*'.
30. Therefore the minimum frequencies set out in point 1.1 of Annex VII must always be respected unless not technically feasible or economically justified – which the Member States would have to explain when they notify their transposition of Article 10 to the Commission.
31. In accordance with Article 10(1), where smart meters are not available, the final sentence of point 1.1 of Annex VII states that gas used only for cooking may be exempted from the requirements on frequent billing information to final customers. If a Member State decides to apply this clause, it must explain to final customer the extent they apply the exemption and what rights in relation to frequent billing information on the consumption of gas used for cooking the final customer has. An example could be setting an annual maximum consumption limit for gas used for cooking, under which frequent billing information based on actual consumption would not be required.
32. Article 10(1) requires that billing information is provided at the frequency specified in Annex VII, point 1.1 of the EED regardless of the type of the non-smart meter and the billing regime. This means that billing information based on actual consumption must also be provided (where this is technically possible and economically justified) in accordance with Article 10(1) first and second paragraph, in cases where the final customers are using non-smart pre-payment meters,

33. Where technically possible and cost-effective, in multi-apartment and multi-purpose buildings, billing information on individual consumption of heating and hot water must be supplied at least twice a year or quarterly when requested by the final customers. The EED does not lay down any special rules for taking a collective decision e.g. to sign up for electronic billing. Normally, national procedures for decision-making in such buildings will apply.
34. Where meters with remote-reading function are not available, the obligation to provide frequent billing information can still be implemented in a number of ways including requiring that energy providers offer systems of meter self-reading to the final customers or on the basis of data collection by manual meter readers if this is cost-efficient.
35. The critical pre-assumption for the obligation for the provision of accurate billing information based on actual consumption established in Article 10(1) is the availability of individual metering equipment (meters or heat cost allocators). However, Article 9(3) requires that individual consumption meters/heat cost allocators for measuring individual consumption of heating or cooling or domestic hot water must be installed in multi-apartment buildings by 31 December 2016.

As regards the provision of heating/cooling and domestic hot water in multi-apartment or multi-purpose buildings supplied from a common source (other than district heating/cooling), Article 9(3) provides for more precise conditions than the first paragraph of Article 9(1) (*lex specialis derogat legi generali*). It follows that, in such buildings, the fulfilment of the obligation to provide accurate billing information based on actual consumption in line with Article 10(1) does not have to take place before Article 9(3) is implemented, *i.e.* by 31 December 2016 at the latest.

However, the deadline of 31 December 2016 does not apply to the obligation to provide individual meters in multi-apartment buildings supplied from district heating/cooling under conditions specified in Article 13(1) of Directive 2006/32/EC. The deadline for transposition of this provision was and remains 17 May 2008.

36. The provisions of Article 10(1) refer specifically to the situation in which final customers do not have smart electricity or gas meters. As such, the minimum frequency for accurate binding information based on actual consumption specified in point 1.1 of Annex VII of the EED does not apply to situations where final customers do have such smart electricity or gas meters.
37. Where a smart metering system is available to final customers, the provisions of the 3rd Internal Market Package for electricity and gas¹⁴ continue to apply. According to an interpretative note published by the Commission on 22 January 2010, where smart metering is available to final customers, billing information based on actual consumption should be provided on a monthly basis¹⁵.
38. In the context of Article 10(1), the criterion of cost-efficiency for the provision of accurate billing information based on actual consumption, in accordance with the minimum

¹⁴ Directive 2009/72/EC and Directive 2009/73/EC.

¹⁵http://ec.europa.eu/energy/gas_electricity/interpretative_notes/doc/implementation_notes/2010_01_21_retail_markets.pdf.

frequency specified in point 1.1 of Annex VII of the EED, may be relevant mainly for establishing whether the cost of sending manual meter readers is economically justified. If Member States do establish in specific cases that the provision of frequent billing information based on actual consumption is not cost-efficient this should be explained and communicated to final customers and those responsible for individual billing by 31 December 2014.

39. According to Article 10(2), where smart electricity or gas metering is in operation, Member States must ensure that final customers are provided with complementary information on their own consumption. The obligation must be fulfilled by 5 June 2014 and from that moment would apply to any smart meters that have been installed before that date and are still in operation.
40. Complementary information on cumulative data corresponding to intervals for which frequent billing information has been produced is meant to cover information about consumption (e.g. for a given month, if billing information is provided monthly) and the related costs incurred by the final customer. Member States may require that such information is provided to final customers via paper/electronic billing or any other means (e.g. separate monthly reports sent to final customers by mail or electronically by the energy supplier or an energy service company acting on behalf of the energy supplier or via a secure website).
41. According to Article 10(2)(b), where smart electricity/gas meters have been installed, Member States must ensure that detailed complementary information according to the time of use for any day, week, month and year is provided to final customers via internet or the meter interface. The provision does not provide for other ways to provide such information.
42. Independently of whether smart meters have been installed or not, in relation to the use of electricity, natural gas, heating, cooling and domestic hot water, Member States must require that from 5 June 2014, information on historical consumption (as referred to in Article 10(2)) is provided to the final customers or an energy service provider designated by the final customer, to the extent such information is available. The obligation would normally be passed on to the energy suppliers and any other organisation collecting and storing data on individual consumption of final customers.
43. Under Article 10(3)(e) Member States must establish a requirement for information on energy costs and estimates of energy costs to be provided on demand to enable consumers to compare deals on a like-for-like-basis, In doing so, Member States have to determine the meaning of '*timely manner*' and '*easily understandable format*'.

Common rules for billing information and the actual bills

44. According to Article 10(1) second paragraph, for final customers with non-smart meters, where frequent 'billing' and 'billing information' based on actual consumption is enabled by a system of regular self-reading by the final customer, billing information based on estimated consumption or flat rates must be provided only in situations where, for a given interval for billing information, the final customer for whatever reason has not provided a meter reading.

45. The condition of technical feasibility for the provision of accurate bills and billing information based on actual consumption is strictly linked to the availability of accurate meters complying with Directive 2004/22/EC of the European Parliament and of the Council on measuring instruments, or accurate heat allocators complying with relevant European standards¹⁶.
46. According to Article 10(3)(b) Member States must ensure that by 5 June 2014 all final customers are offered the option of electronic bills and billing information for all types of consumption covered by Articles 9, 10 and 11, whether with or without smart meters.

Specific rules for the bills themselves

47. According to point 1.1 of Annex VII of the EED, Member States are required to ensure that, where individual meters are available, individual bills based on actual consumption are provided at least annually. The general deadline for transposition applies (5 June 2014).

If the system of self-reading described in Article 10(1) second subparagraph is in use, bills based on estimated consumption can be issued only if the final customer has not provided the meter reading.

48. Article 10(3)(d) permits Member States to provide that, at the request of the final customer, information in bills does not constitute a request for payment. In such cases, Member States must ensure that suppliers of energy offer flexible arrangements for actual payments¹⁷.
49. Although not referred to in the EED directly, it is recommended that Member States ensure that, in case of actual bills, information about the request for payment and information on possible flexible arrangements for payment is included in or provided with the actual bill (Article 10(3)(d)). This will help final customers more easily distinguish between the bill and the billing information.

F. OBLIGATIONS TO ENSURE FREE OF CHARGE PROVISION OF METERING AND BILLING INFORMATION

50. Article 11(1) requires Member States to ensure that final customers receive all their consumption data as well as bills and billing information free of charge.
51. It follows that energy suppliers or other organisations must themselves bear the costs of producing and delivering bills and billing information to the final customers.

¹⁶ EN 834 Standard on heat cost allocators for the determination of the consumption of room heating radiators - appliances with electrical energy supply.

EN 835 Standard on heat cost allocators for the determination of the consumption of room heating radiators - appliances without electrical energy supply based on the evaporation principle.

¹⁷ As regards electricity and natural gas, the obligation to ensure that final customers are offered a wide range of payment methods was already introduced in Annex 1(1d) to Directive 2009/72/EC and Annex 1(1d) to Directive 2009/73/EC. The Energy Efficiency Directive extends this rule to heating/cooling and domestic hot water supplied from district heating/cooling.

52. This does not rule out energy companies giving final customers a discount or bonus for opting for electronic bills and billing information.
53. Under Article 11(2) Member States must ensure that the distribution of costs and billing information for individual consumption of cooling and heating in multi-apartment and multi-purpose buildings, must be carried out on a non-profit basis. In that case, costs incurred by assigning this task to a third party can be passed onto the final customers occupying such buildings to the extent that such costs are reasonable. In such situations, billing information issued for example by a district heating company to an owner of a multi-apartment building would need to be provided free of charge. However, for billing and billing information, the costs related to contracting a service related to accurate measuring, allocating and accounting for individual consumption for different apartments or units in such buildings (sub-billing), may be passed on to the end-users occupying these apartments/units.
54. The task to define the conditions under which the costs referred to in Article 11(2) are 'reasonable' lies with the Member States.
55. In Article 11(2), the term '*heating and cooling*', especially in case of buildings with an own common heating and hot water source, comprises also domestic hot water where heating is a prerequisite for warm water preparation.

G. OBLIGATIONS TO ENFORCE IMPLEMENTATION OF ARTICLES 9, 10 AND 11

56. In accordance with Article 13, Member States are required to lay down rules on effective, proportionate and dissuasive penalties applicable in case of non-compliance with the national provisions adopted pursuant to Articles 9 to 11 and must take the necessary measures to ensure that they are implemented.

ANNEX. RELEVANT PROVISIONS (RECITALS, ARTICLES 2, 9, 10, 11, AND ANNEX VII)

Recitals

...

(26) When designing energy efficiency improvement measures, account should be taken of efficiency gains and savings obtained through the widespread application of cost-effective technological innovations such as smart meters. Where smart meters have been installed, they should not be used by companies for unjustified back billing.

(27) In relation to electricity, and in accordance with Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity (1), where the roll-out of smart meters is assessed positively, at least 80 % of consumers should be equipped with intelligent metering systems by 2020. In relation to gas, and in accordance with Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas (2), where the roll-out of intelligent metering systems is assessed positively, Member States or any competent authority they designate, should prepare a timetable for the implementation of intelligent metering systems.

(28) Use of individual meters or heat cost allocators for measuring individual consumption of heating in multi-apartment buildings supplied by district heating or common central heating is beneficial when final customers have a means to control their own individual consumption. Therefore, their use makes sense only in buildings where radiators are equipped with thermostatic radiator valves.

(29) In some multi-apartment buildings supplied by district heating or common central heating, the use of accurate individual heat meters would be technically complicated and costly due to the fact that the hot water used for heating enters and leaves the apartments at several points. It can be assumed that individual metering of heat consumption in multi-apartment buildings is, nevertheless, technically possible when the installation of individual meters would not require changing the existing in-house piping for hot water heating in the building. In such buildings, measurements of individual heat consumption can then be carried out by means of individual heat cost allocators installed on each radiator.

(30) Directive 2006/32/EC requires Member States to ensure that final customers are provided with competitively priced individual meters that accurately reflect their actual energy consumption and provide information on actual time of use. In most cases, this requirement is subject to the conditions that it should be technically possible, financially reasonable, and proportionate in relation to the potential energy savings. When a connection is made in a new building or a building undergoes major renovations, as defined in Directive 2010/31/EU, such individual meters should, however, always be provided. Directive 2006/32/EC also requires that clear billing based on actual consumption should be provided frequently enough to enable consumers to regulate their own energy use.

31) Directives 2009/72/EC and 2009/73/EC require Member States to ensure the implementation of intelligent metering systems to assist the active participation of consumers in the electricity and gas supply markets. As regards electricity, where the roll-out of smart meters is found to be cost-effective, at least 80 % of consumers must be equipped with intelligent metering systems by 2020. As regards natural gas, no deadline is given but the

preparation of a timetable is required. Those Directives also state that final customers must be properly informed of actual electricity/gas consumption and costs frequently enough to enable them to regulate their own consumption.

(32) The impact of the provisions on metering and billing in Directives 2006/32/EC, 2009/72/EC and 2009/73/EC on energy saving has been limited. In many parts of the Union, these provisions have not led to customers receiving up-to-date information about their energy consumption, or billing based on actual consumption at a frequency which studies show is needed to enable customers to regulate their energy use. In the sectors of space heating and hot water in multi-apartment buildings the insufficient clarity of these provisions has also led to numerous complaints from citizens.

(33) In order to strengthen the empowerment of final customers as regards access to information from the metering and billing of their individual energy consumption, bearing in mind the opportunities associated with the process of the implementation of intelligent metering systems and the roll out of smart meters in the Member States, it is important that the requirements of Union law in this area be made clearer. This should help reduce the costs of the implementation of intelligent metering systems equipped with functions enhancing energy saving and support the development of markets for energy services and demand management. Implementation of intelligent metering systems enables frequent billing based on actual consumption. However, there is also a need to clarify the requirements for access to information and fair and accurate billing based on actual consumption in cases where smart meters will not be available by 2020, including in relation to metering and billing of individual consumption of heating, cooling and hot water in multi-unit buildings supplied by district heating/ cooling or own common heating system installed in such buildings.

Article 2

Definitions

...

(23) 'final customer' means a natural or legal person who purchases energy for own end use;

(24) 'energy service provider' means a natural or legal person who delivers energy services or other energy efficiency improvement measures in a final customer's facility or premises;
'useful heat' means heat produced in a cogeneration process to satisfy economically justifiable demand for heating or cooling;

...

(28) 'smart metering system' or 'intelligent metering system' means an electronic system that can measure energy consumption, providing more information than a conventional meter, and can transmit and receive data using a form of electronic communication;

Article 9

Metering

1. Member States shall ensure that, in so far as it is technically possible, financially reasonable and proportionate in relation to the potential energy savings, final customers for electricity, natural gas, district heating, district cooling and domestic hot water are provided with competitively priced individual meters that accurately reflect the final customer's actual energy consumption and that provide information on actual time of use.

Such a competitively priced individual meter shall always be provided when:

- (a) an existing meter is replaced, unless this is technically impossible or not cost-effective in relation to the estimated potential savings in the long term;
- (b) a new connection is made in a new building or a building undergoes major renovations, as set out in Directive 2010/31/EU.

2. Where, and to the extent that, Member States implement intelligent metering systems and roll out smart meters for natural gas and/or electricity in accordance with Directives 2009/72/EC and 2009/73/EC:

- (a) they shall ensure that the metering systems provide to final customers information on actual time of use and that the objectives of energy efficiency and benefits for final customers are fully taken into account when establishing the minimum functionalities of the meters and the obligations imposed on market participants;
- (b) they shall ensure the security of the smart meters and data communication, and the privacy of final customers, in compliance with relevant Union data protection and privacy legislation;
- (c) in the case of electricity and at the request of the final customer, they shall require meter operators to ensure that the meter or meters can account for electricity put into the grid from the final customer's premises;
- (d) they shall ensure that if final customers request it, metering data on their electricity input and off-take is made available to them or to a third party acting on behalf of the final customer in an easily understandable format that they can use to compare deals on a like-for-like basis;
- (e) they shall require that appropriate advice and information be given to customers at the time of installation of smart meters, in particular about their full potential with regard to meter reading management and the monitoring of energy consumption.

3. Where heating and cooling or hot water are supplied to a building from a district heating network or from a central source servicing multiple buildings, a heat or hot water meter shall be installed at the heating exchanger or point of delivery.

In multi-apartment and multi-purpose buildings with a central heating/cooling source or supplied from a district heating network or from a central source serving multiple buildings, individual consumption meters shall also be installed by 31 December 2016 to measure the consumption of heat or cooling or hot water for each unit where technically feasible and cost-efficient. Where the use of individual meters is not technically feasible or not cost-efficient, to measure heating, individual heat cost allocators shall be used for measuring heat consumption at each radiator, unless it is shown by the Member State in question that the installation of such heat cost allocators would not be cost-efficient. In those cases, alternative cost-efficient methods of heat consumption measurement may be considered.

Where multi-apartment buildings are supplied from district heating or cooling, or where own common heating or cooling systems for such buildings are prevalent, Member States may

introduce transparent rules on the allocation of the cost of thermal or hot water consumption in such buildings to ensure transparency and accuracy of accounting for individual consumption. Where appropriate, such rules shall include guidelines on the way to allocate costs for heat and/or hot water that is used as follows:

- (a) hot water for domestic needs;
- (b) heat radiated from the building installation and for the purpose of heating the common areas (where staircases and corridors are equipped with radiators);
- (c) for the purpose of heating apartments.

Article 10

Billing information

1. Where final customers do not have smart meters as referred to in Directives 2009/72/EC and 2009/73/EC, Member States shall ensure, by 31 December 2014, that billing information is accurate and based on actual consumption, in accordance with point 1.1 of Annex VII, for all the sectors covered by this Directive, including energy distributors, distribution system operators and retail energy sales companies, where this is technically possible and economically justified.

This obligation may be fulfilled by a system of regular self-reading by the final customers whereby they communicate readings from their meter to the energy supplier. Only when the final customer has not provided a meter reading for a given billing interval shall billing be based on estimated consumption or a flat rate.

2. Meters installed in accordance with Directives 2009/72/EC and 2009/73/EC shall enable accurate billing information based on actual consumption. Member States shall ensure that final customers have the possibility of easy access to complementary information on historical consumption allowing detailed self-checks.

Complementary information on historical consumption shall include:

- (a) cumulative data for at least the three previous years or the period since the start of the supply contract if this is shorter. The data shall correspond to the intervals for which frequent billing information has been produced; and
 - (b) detailed data according to the time of use for any day, week, month and year. These data shall be made available to the final customer via the internet or the meter interface for the period of at least the previous 24 months or the period since the start of the supply contract if this is shorter.
3. Independently of whether smart meters have been installed or not, Member States:
- (a) shall require that, to the extent that information on the energy billing and historical consumption of final customers is available, it be made available, at the request of the final customer, to an energy service provider designated by the final customer;
 - (b) shall ensure that final customers are offered the option of electronic billing information and bills and that they receive, on request, a clear and understandable

explanation of how their bill was derived, especially where bills are not based on actual consumption;

(c) shall ensure that appropriate information is made available with the bill to provide final customers with a comprehensive account of current energy costs, in accordance with Annex VII;

(d) may lay down that, at the request of the final customer, the information contained in these bills shall not be considered to constitute a request for payment. In such cases, Member States shall ensure that suppliers of energy sources offer flexible arrangements for actual payments;

(e) shall require that information and estimates for energy costs are provided to consumers on demand in a timely manner and in an easily understandable format enabling consumers to compare deals on a like-for-like basis.

Article 11

Cost of access to metering and billing information

1. Member States shall ensure that final customers receive all their bills and billing information for energy consumption free of charge and that final customers also have access to their consumption data in an appropriate way and free of charge.

2. Notwithstanding paragraph 1, the distribution of costs of billing information for the individual consumption of heating and cooling in multi-apartment and multi-purpose buildings pursuant to Article 9(3) shall be carried out on a non-profit basis. Costs resulting from the assignment of this task to a third party, such as a service provider or the local energy supplier, covering the measuring, allocation and accounting for actual individual consumption in such buildings, may be passed onto the final customers to the extent that such costs are reasonable.

ANNEX VII

Minimum requirements for billing and billing information based on actual consumption

1. Minimum requirements for billing
- 1.1. Billing based on actual consumption

In order to enable final customers to regulate their own energy consumption, billing should take place on the basis of actual consumption at least once a year, and billing information should be made available at least quarterly, on request or where the consumers have opted to receive electronic billing or else twice yearly. Gas used only for cooking purposes may be exempted from this requirement.

- 1.2. Minimum information contained in the bill

Member States shall ensure that, where appropriate, the following information is made available to final customers in clear and understandable terms in or with their bills, contracts, transactions, and receipts at distribution stations:

- (a) current actual prices and actual consumption of energy;

- (b) comparisons of the final customer's current energy consumption with consumption for the same period in the previous year, preferably in graphic form;
- (c) contact information for final customers' organisations, energy agencies or similar bodies, including website addresses, from which information may be obtained on available energy efficiency improvement measures, comparative end-user profiles and objective technical specifications for energy-using equipment.

In addition, wherever possible and useful, Member States shall ensure that comparisons with an average normalised or benchmarked final customer in the same user category are made available to final customers in clear and understandable terms, in, with or signposted to within, their bills, contracts, transactions, and receipts at distribution stations.

1.3. Advice on energy efficiency accompanying bills and other feedback to final customers

When sending contracts and contract changes, and in the bills customers receive or through websites addressing individual customers, energy distributors, distribution system operators and retail energy sales companies shall inform their customers in a clear and understandable manner of contact information for independent consumer advice centres, energy agencies or similar institutions, including their internet addresses, where they can obtain advice on available energy efficiency measures, benchmark profiles for their energy consumption and technical specifications of energy using appliances that can serve to reduce the consumption of these appliances.