Article 1
Definitions

1.1 For the purpose of interpreting and applying the provisions contained in the present order the definitions contained in Article 1 of Annex A to Authority for Electricity and Gas (hereafter: Authority) Order 5/04 of 30 January 2004 (hereafter: Electricity Tariff Code) as supplemented and amended shall be used, as well as additional definitions as follows:

- "**AMM control centre**" shall mean the information system governing the remote management of electronic meters pursuant to the present provision;
- "**circuit breaker**" shall mean a device that interrupts the supply to an electricity withdrawal point on a low-voltage distribution network;
- "**contractual parameters**" shall mean the personalised information comprising the terms of a contract for the purchase of electricity by the customer related to the withdrawal point and which is relevant to the operation of electronic meters pursuant to the present provision;
- "**maximum active power withdrawn on a quarter-hourly basis**" shall mean the maximum value of active power withdrawn on a quarter-hourly basis between two consecutive bills;
- "**incremental totaliser register**" shall mean a register containing the incremental amount resulting from the measurement of the one-direction flow of electricity through a connection point to the distribution network;
- "**Order 168/03**" shall mean Authority Order 168 of 30 December 2003, as supplemented and amended;
- "**switching**" shall mean a change of dispatching user for the withdrawal point pursuant to Article 5 of Order 168/03;
- "**remote management**" shall mean the set of IT tools and functions that enable the set-up, start-up, and operation, using information and communications technologies (ICT), of electronic meters installed at electricity withdrawal points.

Article 2
Aims

2.1 The Authority's aims in issuing the present provision are:

a) to help ensure competitiveness in the supply of electricity to residential and non-residential customers, of which the former will have eligible status with effect from 1 July 2007, with electricity withdrawal points on low-voltage distribution networks;
b) to establish the functional and technological conditions to make it possible to extend hourly metering to low-voltage withdrawal points also;

c) to improve the quality of the electricity metering, supply and distribution services for low-voltage consumers and ensure the same functional and performance levels both for customers entitled to enjoy the universal service and those exercising the right to choose a new retailer.

Article 3
Purpose

3.1 The present provision makes it obligatory to all metering service operators, through plans implemented over a gradual timescale, to install at all low-voltage withdrawal points electronic meters set up to be operated, programmed and functionally up-graded and to make the relevant metering data available to entitled parties using ICT instruments.

Article 4
Single-phase low-voltage electronic meters

4.1 This Article establishes the minimum functional requirements with which single phase electronic meters at low-voltage withdrawal points must comply.

4.2 Single-phase electronic meters at low-voltage withdrawal points must:

a) be equipped with a clock/calendar function with resolution to the second and, for those not equipped with Global Positioning System (GPS) instruments with a synchronisation function, be capable of synchronisation by the electricity metering service operator with a unique reference at least once a day or with frequency such as to allow a maximum drift in a month not higher than ±60 seconds;
b) enable the active electricity withdrawn at the withdrawal point to be metered and this measurement to be recorded inside the device in a single incremental totaliser register;
c) enable the withdrawn active electricity measurement to be recorded inside the device in four separate incremental totaliser registers that can be activated alternately in up to five time-bands, the first of which starting at 00:00 hours and the last ending at 24:00 hours of the same day; the hourly activation table for the separate totaliser logs must able to be broken down in at least seven co-existing ways corresponding to:
    i. differentiated working days, including Saturdays;
    ii. Sundays and holidays, including local Patron Saints' days.

    and must be up-datable in the electronic meters at least twice each calendar year;
d) know the totaliser register information referred to at letter (c) on which to compute the active electricity withdrawn in the event that the time reference referred to at letter (a) is lost;

e) make it possible for the measurement of the active electricity withdrawn each hour to be recorded inside the device itself and logged for at least 36 days;

f) be equipped with a circuit breaker that is able to disconnect the withdrawal point if the threshold power limits are exceeded, in the following way:

   i. by enabling, for an indefinite period, an excess of up to 10% of contracted power in compliance with Interministerial Committee on Prices (CIP) Resolution 42/86. In the event of an instantaneous power withdrawal that exceeds the contractual power by more than 10% the meters must have a tolerance band that enables customers to withdraw electricity for the limited time needed for them to reduce the withdrawal before the circuit breaker trips. This tolerance band operates inversely to timing in that higher values of average withdrawn or instantaneous power correspond to more rapid circuit breaker tripping times; before each trip of the circuit breaker an alarm message must be sent to and shown on the meter display pursuant to letter (j) for a period long enough for the customer to see it;

g) enable, where necessary or applicable and as an alternative or in addition to the provisions set forth at letter (f) above, the maximum active power withdrawn to be recorded on a quarter-hourly basis for each totaliser log as referred to at letter (c), in the time interval between two consecutive bills;

h) provide for the functionalities referred to at letters (f) and (g) to be remotely enabled and disabled using ICT instruments;

i) have the capacity to make the values recorded in the totaliser registers referred to at letters (b) and (c) and if applicable the power register referred to at letter (g) available at the relevant times for billing consumption purposes, switching and contractual changes as referred to at letter (m), first three points of clause (iv); while at the same time they keep on recording the electricity withdrawn in the registers referred to at letters (b), (c), (e) and, if applicable, (g), in accordance with the hourly table referred to at letter (c);

j) be equipped with a display that automatically or through push-bottom displays at least the totaliser registers of withdrawn active electricity pursuant to letters (b) and (c) and if applicable the power register referred to at letter (g), shows the running totaliser register at the time of the display, the date and time, the instantaneous power withdrawn and the memorised values of the registers referred to at point (i). The meters must be able to display messages generated automatically inside the devices themselves, for example for alarm situations, or sent by the AMM control centre;

k) be equipped with systems to protect and monitor the reliability of the registers as referred to at letters (b), (c) and if applicable (g); in the event that the values of these registers are corrupted and they cannot be recovered from back-up copies, the meters should log the alarm and make it available to the remote management centre; they must also be equipped with protection and monitoring mechanisms

for the communication protocols used to communicate with the AMM control centre;

l) be able to promptly transmit up to the AMM control centre a status word reporting hardware and functional abnormalities;

m) be set up to manage the following remote transactions:

i. synchronisation with the meters' clocks, for those not equipped with GPS instrumentation;

ii. periodic readings of the totaliser registers referred to at letters (b), (c), (e) and if applicable (g);

iii. constant remote monitoring of their good functioning in accordance with the provisions of letter (l);

iv. in the contract management context:

- the activation and disactivation of the meter itself, as well as any changes needed to the contractual parameters following transfers (with or without disactivating the supply at the withdrawal point) with respect to the validity of the transport contract;
- changes to contractual power;
- changes to the hourly table as referred to at letter (c);
- interruption and subsequent reactivation of supply at the withdrawal point;
- changes in available power;

v. changes to the meter's parameters;

vi. transmission of information messages on the meter display;

vii. reading of summary information concerning the minimum and maximum values recorded over the week and the percentage of samples recorded in the time interval +10% / -10% of the rms voltage value.

Electronic meters must be set up to carry out the above remote transactions with immediate effect on initial installation and must be able to be activated once the AMM control centre is installed without any need for further action by personnel on site.

n) be equipped for the programme software to be upgraded remotely. During upgrade operations the meter must hold the values of the registers referred to at letters (b), (c) and (g) and the contractual parameters stored in the meter itself and at the same time keep on reading and measuring the electricity withdrawn in the registers referred to at letters (b), (c) and if applicable (g), in accordance with the current hourly table as referred to at letter (c), while keep on operating the clock/calendar function referred to at letter (a). If, during the upgrade, the meters

lose the ability to set up the separate totaliser registers correctly, they shall bring into play the functional methods referred to at letter (d); the method used to perform programme software upgrades using ICT instruments must comply with European directive 2004/22/EC and subsequent transposition provisions.

o) measure the rms voltage value in compliance with the IEC EN 50160 standard.

Article 5

Low-voltage bi-directional single-phase electronic meters

5.1 In addition to complying with the requirements of Article 4, bi-directional single-phase electronic meters for low-voltage withdrawal points must be capable of measuring active electricity injected into the network at the same point through which active electricity is withdrawn and, for the electricity injected into the network, provide for the application of similar functionalities to those referred to in Article 4.2 letters (b), (c), (d), (e), (i), (k) and (m)(ii), and letters (j) and (n) where applicable.

Article 6

Low-voltage three-phase electronic meters

6.1 Three-phase electronic meters for low-voltage withdrawal points equipped with circuit breaker shall comply with the requirements referred to at Article 4.2, with the exception of those which do not have the circuit breaker for which compliance with Article 4.2 (f) and (m)(iv) is not required, where this prerequisite requires the presence or operation of the circuit breaker.

6.2 Both types of three-phase meter must also:

a) enable the reactive electricity withdrawn at the withdrawal point to be measured and this measurement to be recorded inside the device itself in a single incremental totaliser register;
b) enable the withdrawn reactive electricity reading to be recorded in totaliser registers inside the device itself in a similar manner to that envisaged at Article 4.2 (c);
c) enable, for the withdrawn reactive electricity, similar functions to those referred to at Article 4.2 letters (d), (e), (i), (k), and (m)(ii) and letters (j) and (n) where applicable.

Article 7

Low-voltage bi-directional three-phase electronic meters

7.1 In addition to being compliant with the requirements of Article 6, two-way three-phase electronic meters for low-voltage withdrawal points must be capable of measuring active electricity injected to the network at the same point through which

active electricity is withdrawn and, for the electricity injected into the network, provide for the application of similar functionalities to those referred to in Article 4.2 letters (b), (c), (d), (e), (i), (k), and (m)(ii) and letters (j) and (n) where applicable.

Article 8

Obligatory installation requirements for single-phase and three-phase electronic meters

8.1 Each metering service operator shall install electronic meters that meet the requirements set forth at Articles 4 and 6 at low-voltage withdrawal points, in accordance at least with the following timescale:

a) with reference to withdrawal points with available power of less than or equal to 55 kW:

i. 25% of the total number of withdrawal points by 31 December 2008;

ii. 65% of the total number of withdrawal points by 31 December 2009;

iii. 90% of the total number of withdrawal points by 31 December 2010;

iv. 95% of the total number of withdrawal points by 31 December 2011;

b) with reference to withdrawal points with available power of more than 55 kW:

i. 100% of the total number of withdrawal points by 31 December 2008;

8.2 With effect from 1 January 2008, for each low voltage connection point through which the injection of active electricity into the network is activated subsequent to that date, or the potential injection of active electricity into the network, due to the presence of a generation plant inside the customer plant, each metering service operator shall install one single electronic meter that satisfies the requirements:

a) as set forth at Article 5 for single-phase applications;

b) as set forth at Article 7 for three-phase applications.

Article 8bis

Obligatory commissioning requirements for single-phase and three-phase electronic meters

8bis.1 Each metering service operator shall commission and make available to remote management, using ICT instruments, functions of Article 4.2, letter (m), as subsequently quoted (the letter m) at Articles 5, 6 and 7, electronic meters of Article 8.1, letters (a) and (b), within 30 June of each year following that indicated for the installation, in the same percentages.

Article 9

Provisions for low-voltage withdrawal points equipped with hourly meters at the date of the present provision

9.1 For low-voltage withdrawal points which at the date of publication of the present provision were already equipped with meters with features equivalent to those referred to at Article 36.2 and 36.3 of the electricity tariff code, or for which the metering service operators already hold stocks or have already issued procurement orders and will be equipped with such meters by the dates set forth at Article 8, there is no obligatory requirement to install electronic meters pursuant to the present provision.

Article 9bis

Performance indicators for the AMM system

9bis.1 The following performance indicators for the AMM system are defined:

a) annual percentage of remote transactions referred to at Article 4.2, letter (m)(iv and v), ended with success within 24 hours, considering as start-time the instant the request of execution of the transaction has been received by the AMM system, from the commercial IT system or from an operator of the AMM system, and as end-time the notice instant to the commercial IT system or to the operator of the AMM system that the transaction has been completed with success;

b) annual percentage of remote transactions referred to at Article 4.2, letter (m)(iv and v), ended with success within 48 hours, considering the start-time and the end-time as defined to at letter (a);

c) annual number of electronic meters that, in compliance with Article 4.2, letters (l) and (m)(iii) have reported at least once hardware and functional abnormalities;

d) with reference to Table 1:
   (i) annual number of electronic meters, already working (commissioned) at 1 January, with reading frequency of data referred to at Article 4.2, letter (m)(ii), as specified in Table 1;
   (ii) annual number of electronic meters referred to at letter (i) with number of readings ended with success, even following more than one attempt, lower or equal to threshold S;
   (iii) annual number of electronic meters referred to at letter (i) with number of readings ended with success, even following more than one attempt, equal to zero.

Article 9ter

Indicators of the level of utilization of the electronic meters and the AMM system

9ter.1 The following indicators of the level of utilization of the electronic meters and the AMM system are defined:

a) annual number of transactions referred to at Article 4.2, letter (m)(iv and v), ended with success through the AMM system;

b) annual number of transactions referred to at Article 4.2, letter (m)(iv and v) not ended with success through the AMM system and that required the intervention on site of personnel of the metering service operator;

c) annual number of transactions referred to at Article 4.2, letter (m)(iv and v) not included among those of letter (b) performed on electronic meters without the utilization of the AMM system;

d) annual number of transactions similar to those referred to at Article 4.2, letter (m)(iv and v) performed on electromechanical meters.

Article 10

Obligatory requirements for notifications to the Authority

10.1 By 31 July of each year with effect from 2009, each metering service operator shall notify the Authority, with reference to the previous year, of:

a) the total number of low-voltage withdrawal points with transport contracts active at 31 December and the number of such points equipped with electronic meters that comply at 31 December with the requirements set forth at Article 4 or Article 6, separately for customers with available power of less than or equal to 55 kW and customers with available power of more than 55 kW;

b) ~~t~~he total number of low-voltage connection points through which active electricity is also being injected into the network at 31 December and the number of such points equipped with electronic meters that satisfy the requirements of Article 5 or Article 7 at 31 December, separately for points with only injection, for customers with available power of less than or equal to 55 kW and customers with available power of more than 55 kW;

c) the total number of points referred to at letters (a) and (b) equipped with electronic meters actually commissioned according to Article 8bis.

10.2 Each metering service operator shall notify the Authority within thirty days of the date of publication of the present provision, separately for non-residential customers with available power of less than or equal to 55 kW and non-residential customers with available power of more than 55 kW, of the following:

a) the number of low-voltage withdrawal points equipped with meters with features equivalent to those referred to at Article 36.2 and 36.3 of the electricity tariff code at the date of the entry into force of the present provision;

b) the number of low-voltage withdrawal point meters with features equivalent to those referred to at Article 36.2 and 36.3 of the electricity tariff code that they already hold in stock;

c) the number of low-voltage withdrawal point meters with features equivalent to those referred to at Article 36.2 and 36.3 of the electricity tariff code for which they have already issued procurement orders.

10.3 Metering service operators keep separate accounting details with reference to investments and depreciation of low voltage electronic meters and AMM systems.

10.4 In notifying the Authority of the data referred to in the previous paragraphs the metering service operators shall be responsible for the accuracy of the information provided.

10.5 Indicators referred to at Articles 9bis and 9ter are notified to the Authority on the occasion of the notification referred to at Article 10.1 with effect from 2010 and with reference to the previous year. Metering service operators that in 2009 will notify a percentage of withdrawal points equipped with commissioned electronic meters, according to Article 8bis, higher than or equal to 50% at 30 June 2009, shall notify indicators referred to at Articles 9bis and 9ter with effect from 2009, with reference to 2008.

Article 11

Allowed costs for metering services for the regulatory period 2008-2011

11.1 In the period 2008-2011, metering service tariffs are set in order to guarantee the remuneration of investments in electronic meters and remote management systems for low-voltage users, only to metering service operators who really made such investments.

11.2 When defining the allowed revenue for metering service the Authority shall take into account installation obligations set in Article 8, especially in terms of allowed return on invested capital and depreciation. Penalties are also envisaged in the event of failure to achieve the obligatory installation targets set in Article 8.

11.3 Efficiency-gain targets for metering service in the period 2008-2011 shall take into account remote management systems' potential in cutting operating costs.

Article 12

Incentive for distribution companies using electronic meters to record low-voltage customers actually involved in interruptions to the electricity service

12.1 Each distribution company which intends to adopt a system that uses electronic meters to record low-voltage customers actually involved in interruptions to the electricity service in keeping with the system described in Article 14.3 (c) of Order 122/06, is entitled to an incentive *Ic* that equates to:

$$I_C = 50{,}000 + 1{,}000*(\text{Number of withdrawal points})^{1/2}\ [€]$$

up to a maximum of 15.00 euros per withdrawal point. For the purpose of this calculation the number of low-voltage withdrawal points with transport contracts active at 31 December 2009 and equipped with electronic meters that comply with the requirements of Articles 4 or 5 or 6 or 7 is taken, as long as this number is greater than 85% of the total number of low-voltage withdrawal points.

12.2 Incentive *Ic* shall be paid in 2010, with a specific order by the Authority following audits to ascertain that the function has been carried out in full. The incentive shall be paid through the "Continuity of supply costs" account pursuant to the electricity tariff code.

12.3 Distribution companies that intend to avail themselves of this incentive shall inform the Authority in writing no later than 31 March 2008. This written notification should be accompanied by the electronic meter installation plan they intend to implement to perform in full the function of recording low-voltage customers actually involved in interruptions to the electricity service with effect from 1 January 2010.

12.4 The incentive referred to at Article 12.1 shall be paid on condition that the percentage of electronic meters referred to at Article 12.1, equal to 85%, are actually commissioned.

Article 13

Transitional measures

13.1 Electronic meters already installed at low-voltage withdrawal points at the date of publication of the present provision, with the exception of those referred to at Article 9, must be made compliant with the requirements of Articles 4 and 6 respectively for single and three-phase meters and with the requirements of Articles 5 and 7 respectively for bi-directional single and three-phase meters no later than 1 January 2009.

Table 1

	Reading frequency	**No. of electronic meters already working (commissioned) at 1st January**	**Threshold (S)**	**No. of electronic meters with no. of successful readings equal to or below threshold S**	**No. of meters with no. of successful readings equal to 0**
1	**Once a month**		6		
2	**Every two months**		3		
3	**Every three or four months**		2		
4	**Every six months**		1		
5	**Annual**		0		