

<b>Title of the measure:</b>	<i>EU2 Voluntary labelling of electric motors (CEMEP/EU Agreement)</i>
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### General description

The European motor manufacturers, CEMEP (European Committee of Manufacturers of Electrical Machines and Power Electronics, [www.cemep.org](http://www.cemep.org)) and the European Commission have agreed in 1999 to a joint classification system that will enable all Original Equipment Manufacturers (OEMs) and other customers and users of electric motors to have an appreciation of the efficiency of this component. The Voluntary Agreement (VA) was signed by 36 companies (as of August 2003), in order to label their standard motors with efficiency logos and in order to reduce their joint share of EFF3-motors by 50%. All 36 participants have submitted their statistical information in different ways to the CEMEP secretariat. The agreement comprises the following elements:

- Target: Voluntary target of participants to reduce the market penetration of eff 3 motors (4-pol) in their joint sales by 30 % by 31/12/2001 and by 50 % by 31/12/2003 (compared to the base year 1998). In the case of 2-pol-motors the market penetration of eff3 motors in the joint sales of the participants shall be reduced by 30 % by 31/12/2002 and by 50 % by 31/12/2003.
- Classification as eff3, eff2 or eff1, all motors covered by the following definition: three phase A.C. squirrel cage induction motors 1.1 to 90 kW, 400 V (low voltage) with 2- or 4-poles (compared to the base year 1998).
- Efficiency classes eff3, eff2 and eff1 are defined in Table 1 below

Table 1: Class definition for 4-pole motors and 2-pole motors

kW	Class definition for 4-pole motors			Class definition for 2-pole motors		
	<i>eff3</i>	<i>eff2</i>	<i>eff1</i>	<i>eff3</i>	<i>eff2</i>	<i>eff1</i>
	$\eta_N$			$\eta_N$		
1.1	< 76.2	>= 76.2	>= 83.8	< 76.2	>= 76.2	>= 82.8
1.5	< 78.5	>= 78.5	>= 85.0	< 78.5	>= 78.5	>= 84.1
2.2	< 81.0	>= 81.0	>= 86.4	< 81.0	>= 81.0	>= 85.6
3	< 82.6	>= 82.6	>= 87.4	< 82.6	>= 82.6	>= 86.7
4	< 84.2	>= 84.2	>= 88.3	< 84.2	>= 84.2	>= 87.6
5.5	< 85.7	>= 85.7	>= 89.2	< 85.7	>= 85.7	>= 88.6
7.5	< 87.0	>= 87.0	>= 90.1	< 87.0	>= 87.0	>= 89.5
11	< 88.4	>= 88.4	>= 91.0	< 88.4	>= 88.4	>= 90.5
15	< 89.4	>= 89.4	>= 91.8	< 89.4	>= 89.4	>= 91.3
18.5	< 90.0	>= 90.0	>= 92.2	< 90.0	>= 90.0	>= 91.8
22	< 90.5	>= 90.5	>= 92.6	< 90.5	>= 90.5	>= 92.2
30	< 91.4	>= 91.4	>= 93.2	< 91.4	>= 91.4	>= 92.9
37	< 92,0	>= 92,0	>= 93,6	< 92.0	>= 92.0	>= 93.3
45	< 92,5	>= 92,5	>= 93,9	< 92.5	>= 92.5	>= 93.7
55	< 93,0	>= 93,0	>= 94,2	< 93.0	>= 93.0	>= 94.0
75	< 93,6	>= 93,6	>= 94,7	< 93.6	>= 93.6	>= 94.6
90	< 93,9	>= 93,9	>= 95,0	< 93.9	>= 93.9	>= 95.0

Note:  $\eta_N$  in accordance to existing IEC 34, summation of losses method.

The values of efficiency, expressed as percentages, for full load  $\eta_N$  and for three quarters load  $\eta_{(3/4\text{-load})}$  and the classification code eff1, eff2 or eff3 should be specified in the motor catalogues. The catalogues had to be adapted by the participants for 4-pole motors by June 2000 at the latest and for 2-pole motors by the end of December 2000 at the latest.

**Label design:** Designation in catalogues and on rating plates may be based upon the following logos:



**Monitoring:** A statistical secretariat of CEMEP monitors on an annual basis the market penetration of eff3, eff2 and eff1-motors (units produced/sold, weighted by efficiency class). CEMEP establishes a list of participants and keeps it updated. Participants are responsible for the accuracy of the information given to the statistical secretariat or to the national member associations of CEMEP. Efficiency classifications stated by the participants must be based on test data that are in accordance with the currently valid European standards (EN60034-2 +A1:1996+A2:1996, summation of losses method). The publication of results includes no total figures, but indices and percentage shares.

**Reporting:** The monitoring report should

- indicate the percentage of the market covered jointly by the participants.
- publish the share of eff1-, eff2- and eff3-motors for the power range of 2- and 4-pole motors each.

- include a list of participating manufacturers supplying data

- include a list of participating manufacturers not supplying data.

- the Commission will be informed confidentially about the improvements of the single participants. These data may not be published.

**Verification:** Each participant will regularly check its products to ensure that the declared efficiencies and efficiency classes in the catalogue, and on the nameplate of its product, are correct as required by this agreement (self-verification).

**Non – Compliance:** If a participant does not provide the required data in time, the national association or CEMEP will immediately issue a written statement of non compliance to the manufacturers concerned. The supply of the required data will be requested within one month after receipt of the statement. If the manufacturer has still not provided the required data in time, the name of this manufacturer will be published in the annual report, as being in non compliance to the signed agreement.

**Accompanying measures:** CEMEP creates additional information material for the public and promotes the classification scheme at European exhibitions. The participants provide motor data and support the EuroDEEM database on high-efficiency motors.

This agreement will be revised in the year 2004/2005 on the basis of the experience since 1999.

### **References**

CEMEP website for the voluntary agreement ([www.cemep.org/cemep/organization/lvac.html](http://www.cemep.org/cemep/organization/lvac.html))

Text of the CEMEP Agreement (same web site)

CEMEP 2003: Monitoring Report 2002 (same website)

### **Impact Assessment**

According to SEC(2009)1013, voluntary agreement supported by CEMEP and the European Commission was established and signed in 1999 by 36 motor manufacturers, representing 80% of the European production of standard motors. The agreement supported the removal, which might have happened anyway due to the inefficiency of these motors, of most low efficient<sup>17</sup> motors (called 'EFF3' in SEMEP agreement) from the EU induction motor market. As a consequence, today European markets are still

dominated by low efficiency IE1 motors (EFF2 in SEMEP agreement) representing 85% of motor sales. The penetration of standard efficiency IE2 motors (EFF1 in CEMEP agreement) is still very small (12% of motors sold) and the high efficiency IE3 motor market is practically inexistent (this level does not exist in CEMEP agreement). Simultaneously, many third countries have achieved better results by the implementation of mandatory standards introducing minimum efficiency levels at IE2 and IE3 levels.

### ***References***

- CEMEP website for the voluntary agreement ([www.cemep.org/cemep/organization/lvac.html](http://www.cemep.org/cemep/organization/lvac.html))
- Text of the CEMEP Agreement (same web site)
- CEMEP 2003: Monitoring Report 2002 (same website)
- [http://ec.europa.eu/smart-regulation/impact/ia\\_carried\\_out/docs/ia\\_2009/sec\\_2009\\_1013\\_en.pdf](http://ec.europa.eu/smart-regulation/impact/ia_carried_out/docs/ia_2009/sec_2009_1013_en.pdf)