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⁽¹⁾ Text with EEA relevance.

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Acts whose titles are printed in light type are those relating to day-to-day management of agricultural matters, and are generally valid for a limited period.

The titles of all other acts are printed in bold type and preceded by an asterisk.

I

(Acts whose publication is obligatory)

**REGULATION (EC) No 629/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 5 April 2006**

amending Council Regulation (EEC) No 1408/71 on the application of social security schemes to employed persons, to self-employed persons and to members of their families moving within the Community and Council Regulation (EEC) No 574/72 laying down the procedure for implementing Regulation (EEC) No 1408/71

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Articles 42 and 308 thereof,

Having regard to the proposal from the Commission,

Having regard to the Opinion of the European Economic and Social Committee ⁽¹⁾,

Acting in accordance with the procedure laid down in Article 251 of the Treaty ⁽²⁾,

Whereas:

(1) With the entry into force of Regulation (EC) No 631/2004 of the European Parliament and of the Council of 31 March 2004 amending Council Regulation (EEC) No 1408/71 and Council Regulation (EEC) No 574/72, in respect of the alignment of rights and the simplification of procedures ⁽³⁾, procedures for obtaining access to sickness benefits in kind during a temporary stay in another Member State were simplified. It is appropriate to extend the simplified procedures to the provisions on benefits in respect of accidents at work and occupational diseases contained in Regulations (EEC) No 1408/71 ⁽⁴⁾ and (EEC) No 574/72 ⁽⁵⁾.

(2) In order to take account of changes in the legislation of certain Member States, in particular in the new Member States since the end of accession negotiations, the Annexes to Regulation (EEC) No 1408/71 need to be adapted.

(3) Regulations (EEC) No 1408/71 and (EEC) No 574/72 should therefore be amended accordingly.

(4) In order to ensure legal certainty and to protect the legitimate expectations of persons affected, it is necessary to provide that certain provisions modifying Annex III to Regulation (EEC) No 1408/71 take effect retroactively from 1 May 2004.

(5) The Treaty does not provide powers other than those under Article 308 to take appropriate measures within the field of social security for persons other than employed persons,

HAVE ADOPTED THIS REGULATION:

Article 1

Annexes I, II, IIa, III, IV and VI to Regulation (EEC) No 1408/71 shall be amended in accordance with the Annex to this Regulation.

Article 2

Regulation (EEC) No 574/72 is hereby amended as follows:

1. in Article 60, paragraphs 5 and 6 shall be deleted;

⁽¹⁾ OJ C 24, 31.1.2006, p. 25.

⁽²⁾ Opinion of the European Parliament of 15 November 2005 (not yet published in the Official Journal) and Council Decision of 10 March 2006.

⁽³⁾ OJ L 100, 6.4.2004, p. 1.

⁽⁴⁾ OJ L 149, 5.7.1971, p. 2. Regulation as last amended by Regulation (EC) No 647/2005 of the European Parliament and of the Council (OJ L 117, 4.5.2005, p. 1).

⁽⁵⁾ OJ L 74, 27.3.1972, p. 1. Regulation as last amended by Commission Regulation (EC) No 207/2006 (OJ L 36, 8.2.2006, p. 3).

2. Article 62 shall be replaced by the following:

'Article 62

Benefits in kind in the case of a stay in a Member State other than the competent State

1. In order to receive benefits in kind under Article 55 (1)(a)(i) of the Regulation, an employed or self-employed person shall submit to the care provider a document issued by the competent institution certifying that he is entitled to benefits in kind. That document shall be drawn up in accordance with Article 2. If the person concerned is not able to submit that document, he shall contact the institution of the place of stay which shall request from the competent institution a certified statement testifying that the person concerned is entitled to benefits in kind.

A document issued by the competent institution for entitlement to benefits in accordance with Article 55(1) (a)(i) of the Regulation, in each individual case concerned, shall have the same effect with regard to the care provider as national evidence of the entitlements of the persons insured with the institution of the place of stay.

2. Article 60(9) of the implementing Regulation shall apply *mutatis mutandis*;

3. Article 63(2) shall be replaced by the following:

'2. Article 60(9) of the implementing Regulation shall apply mutatis mutandis.'

4. in Article 66(1), 'in Articles 20 and 21' shall be replaced by 'in Article 21';

5. in Article 93(1), '22b' shall be deleted and '34a or 34b' shall be replaced by 'or 34a'.

Article 3

This Regulation shall enter into force on the day following its publication in the *Official Journal of the European Union*.

Point 5(a)(ii) to (ix) and point 5(b)(ii) and (iv) of the Annex shall apply from 1 May 2004.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Strasbourg, 5 April 2006.

For the European Parliament

The President

J. BORRELL FONTELLES

For the Council

The President

H. WINKLER

ANNEX

The Annexes to Regulation (EEC) No 1408/71 are amended as follows:

1. in Annex I, section II, point 'V. SLOVAKIA' is replaced by the following:

'V. SLOVAKIA

For the purpose of determining entitlement to benefits in kind pursuant to the provisions of Chapter 1 of title III of the Regulation, "member of the family" means a spouse and/or a dependent child as defined by the Act on Child Allowance';

2. in Annex II, section I, point 'H. FRANCE' is replaced by the following:

'H. FRANCE

1. Supplementary benefit schemes for self-employed persons in craft-trade, industrial or commercial occupations or the liberal professions, supplementary old-age insurance schemes for self-employed persons in the liberal professions, supplementary insurance schemes for self-employed persons in the liberal professions covering invalidity or death, and supplementary old-age benefit schemes for contracted medical practitioners and auxiliaries, as referred to respectively in Articles L.615-20, L.644-1, L.644-2, L.645-1 and L.723-14 of the Social Security Code.
2. Supplementary sickness and maternity insurance schemes for self-employed workers in agriculture, as referred to in Article L.727-1 of the Rural Code.;

3. Annex II, section II is amended as follows:

- (a) point 'E. ESTONIA' is replaced by the following:

'E. ESTONIA

- (a) Childbirth allowance;
- (b) Adoption allowance';

- (b) point 'L. LATVIA' is replaced by the following:

'L. LATVIA

- (a) Childbirth grant;
- (b) Adoption allowance';

- (c) point 'S. POLAND' is replaced by the following:

'S. POLAND

Childbirth supplement (Act of 28 November 2003 on family benefits);

4. Annex IIa is amended as follows:

- (a) in point 'D. GERMANY', 'None' is replaced by:

'Benefits to cover subsistence costs under the basic provision for jobseekers unless, with respect to these benefits, the eligibility requirements for a temporary supplement following receipt of unemployment benefit (Article 24(1) of Book II of the Social Code) are fulfilled';

- (b) point 'L. LATVIA' is replaced by the following:

'L. LATVIA

- (a) State Social Security Benefit (Law on State Social Benefits of 1 January 2003);

- (b) Allowance for the compensation of transportation expenses for disabled persons with restricted mobility (Law on State Social Benefits of 1 January 2003);

- (c) point 'S. POLAND' is replaced by the following:

'S. POLAND

Social pension (Act of 27 June 2003 on social pensions);

- (d) point 'V. SLOVAKIA' is replaced by the following:

'V. SLOVAKIA

Adjustment awarded before 1 January 2004 to pensions constituting the sole source of income.';

5. Annex III is amended as follows:

- (a) part A is amended as follows:

- (i) the following points are deleted:

points 1, 4, 10, 11, 12, 14, 15, 18, 20, 21, 25, 27, 28, 29, 30, 31, 32, 34, 35, 37, 38, 39, 41, 42, 43, 45, 46, 47, 49, 55, 56, 57, 59, 60, 63, 65, 66, 70, 76, 77, 78, 81, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 115, 116, 117, 119, 120, 123, 125, 126, 133, 134, 135, 137, 138, 141, 143, 144, 150, 151, 152, 154, 155, 158, 160, 161, 166, 167, 168, 170, 171, 174, 176, 177, 181, 182, 183, 185, 186, 189, 192, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 239, 241, 246, 247, 249, 250, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 266, 268, 269, 280, 281, 282, 283, 284, 285, 286, 287, 291, 292, 293, 294, 295, 296, 297;

- (ii) the numbering is changed as follows:

BELGIUM-GERMANY, from '3' to '1',

CZECH REPUBLIC-GERMANY, from '26' to '2',

CZECH REPUBLIC-CYPRUS, from '33' to '3',

CZECH REPUBLIC-LUXEMBOURG, from '36' to '4',

CZECH REPUBLIC-AUSTRIA, from '40' to '5',
CZECH REPUBLIC-SLOVAKIA, from '44' to '6',
DENMARK-FINLAND, from '67' to '7',
DENMARK-SWEDEN, from '68' to '8',
GERMANY-GREECE, from '71' to '9',
GERMANY-SPAIN, from '72' to '10',
GERMANY-FRANCE, from '73' to '11',
GERMANY-LUXEMBOURG, from '79' to '12',
GERMANY-HUNGARY, from '80' to '13',
GERMANY-NETHERLANDS, from '82' to '14',
GERMANY-AUSTRIA, from '83' to '15',
GERMANY-POLAND, from '84' to '16',
GERMANY-SLOVENIA, from '86' to '17',
GERMANY-SLOVAKIA, from '87' to '18',
GERMANY-UNITED KINGDOM, from '90' to '19',
SPAIN-PORTUGAL, from '142' to '20',
IRELAND-UNITED KINGDOM, from '180' to '21',
ITALY-SLOVENIA, from '191' to '22',
LUXEMBOURG-SLOVAKIA, from '242' to '23',
HUNGARY-AUSTRIA, from '248' to '24',
HUNGARY-SLOVENIA, from '251' to '25',
NETHERLANDS-PORTUGAL, from '267' to '26',
AUSTRIA-POLAND, from '273' to '27',
AUSTRIA-SLOVENIA, from '275' to '28',
AUSTRIA-SLOVAKIA, from '276' to '29',
PORTUGAL-UNITED KINGDOM, from '290' to '30' and
FINLAND-SWEDEN, from '298' to '31';

(iii) in point '2. CZECH REPUBLIC–GERMANY', 'No convention' is replaced by the following:

'Article 39(1)(b) and (c) of the Agreement on Social Security of 27 July 2001;

point 14 of the Final Protocol to the Agreement on Social Security of 27 July 2001';

- (iv) in point '3. CZECH REPUBLIC-CYPRUS', 'No convention' is replaced by the following:

'Article 32(4) of the Agreement on Social Security of 19 January 1999';

- (v) in point '4. CZECH REPUBLIC-LUXEMBOURG', 'None' is replaced by the following:

'Article 52 (8), of the Agreement of 17 November 2000';

- (vi) point '6. CZECH REPUBLIC-SLOVAKIA' is replaced by the following:

'6. CZECH REPUBLIC-SLOVAKIA

Articles 12, 20 and 33 of the Agreement on Social Security of 29 October 1992';

- (vii) in point '18. GERMANY-SLOVAKIA', 'No convention' is replaced by the following:

'Article 29(1)(2) and 3 of the Agreement of 12 September 2002; paragraph 9 of the Final Protocol to the Agreement of 12 September 2002';

- (viii) in point '23. LUXEMBOURG-SLOVAKIA', 'No convention' is replaced by the following:

'Article 50(5) of the Treaty on Social Security of 23 May 2002';

- (ix) in point '29. AUSTRIA-SLOVAKIA', 'No convention' is replaced by the following:

'Article 34(3) of the Agreement of 21 December 2001 on Social Security';

- (b) part B is amended as follows:

- (i) the following points are deleted:

points 1, 4, 10, 11, 12, 14, 15, 18, 20, 21, 25, 26, 27, 28, 29, 30, 31, 32, 34, 35, 36, 37, 38, 39, 41, 42, 43, 44, 45, 46, 47, 49, 55, 56, 57, 59, 60, 63, 65, 66, 70, 76, 77, 78, 81, 84, 87, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 115, 116, 117, 119, 120, 123, 125, 126, 133, 134, 135, 137, 138, 141, 143, 144, 150, 151, 152, 154, 155, 158, 160, 161, 166, 167, 168, 170, 171, 174, 176, 177, 181, 182, 183, 185, 186, 189, 192, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 239, 241, 242, 246, 247, 249, 250, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 266, 268, 269, 280, 281, 282, 283, 284, 285, 286, 287, 291, 292, 293, 294, 295, 296, 297;

- (ii) the numbering is changed as follows:

CZECH REPUBLIC-CYPRUS, from '33' to '1',

CZECH REPUBLIC-AUSTRIA, from '40' to '2',

GERMANY-HUNGARY, from '80' to '3',

GERMANY-SLOVENIA, from '86' to '4',

ITALY-SLOVENIA, from '191' to '5',

HUNGARY-AUSTRIA, from '248' to '6',

HUNGARY-SLOVENIA, from '251' to '7',

AUSTRIA-POLAND, from '273' to '8',

AUSTRIA-SLOVENIA, from '275' to '9' and

AUSTRIA-SLOVAKIA, from '276' to '10'

- (iii) in point '1. CZECH REPUBLIC-CYPRUS', 'None' is replaced by the following:

'Article 32(4) of the Agreement on Social Security of 19 January 1999';

- (iv) in point '10. AUSTRIA-SLOVAKIA', 'No convention' is replaced by the following:

'Article 34(3) of the Agreement of 21 December 2001 on Social Security';

6. Annex IV is amended as follows:

- (a) part A is amended as follows,

- (i) in point 'B. CZECH REPUBLIC', 'None' is replaced by the following:

'Full disability pension for persons whose total disability arose before reaching eighteen years of age and who were not insured for the required period (Section 42 of the Pension Insurance Act No 155/1995 Coll.);

- (ii) in point 'X. SWEDEN', 'None' is replaced by the following:

'The legislation on earnings-related benefits for long-term incapacity for work (Chapter 8 of Law 1962: 381 on General Insurance, as amended);

- (b) part C is amended as follows:

- (i) point 'B. CZECH REPUBLIC' is replaced by the following:

'B. CZECH REPUBLIC

Invalidity (full and partial) and survivors' (widows', widowers' and orphans') pensions in cases where they are not derived from the old age pension to which the deceased would be entitled at the time of his death';

- (ii) in point 'E. ESTONIA', 'None' is replaced by the following:

'All applications for invalidity, old age and survivors' pensions for which

— periods of insurance in Estonia have been completed up to 31 December 1998;

— the applicant's individually registered social tax, paid in accordance with Estonian legislation, is at least equal to the average social tax for the relevant year of insurance';

- (c) in part D, point (2)(g) is replaced by the following:

'(g) Slovak invalidity pension and survivors' pension derived therefrom';

7. Annex VI, point 'Q. THE NETHERLANDS' is amended as follows:

(a) point 4 (b) is replaced by the following:

'(b) If, pursuant to subparagraph (a), the person concerned is entitled to a Dutch invalidity benefit, the benefits as referred to in Article 46(2) of the Regulation shall be calculated:

(i) in accordance with the provisions laid down in the WAO if, before the occurrence of the incapacity for work, the person concerned was last engaged in work as an employed person within the meaning of Article 1(a) of the Regulation;

(ii) in accordance with the provisions laid down in the Invalidity Insurance (Self-Employed Persons) Act (WAZ) if, before the occurrence of the incapacity for work, the person concerned was last engaged in work in a capacity other than that of an employed person within the meaning of Article 1(a) of the Regulation.';

(b) point 7 is replaced by the following:

'7. For the purposes of applying Title II of the Regulation, a person regarded as an employed person within the meaning of the 1964 Wage Tax Act and who is insured on this basis for national insurance, is considered to be pursuing activities in paid employment'.

DIRECTIVE 2006/12/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 5 April 2006
on waste
(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 175 thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Economic and Social Committee ⁽¹⁾,

After consulting the Committee of the Regions,

Acting in accordance with the procedure laid down in Article 251 of the Treaty ⁽²⁾,

Whereas:

(1) Council Directive 75/442/EEC of 15 July 1975 on waste ⁽³⁾ has been significantly amended on several occasions ⁽⁴⁾. In order to clarify matters, a codification of the provisions in question should be drawn up.

(2) The essential objective of all provisions relating to waste management should be the protection of human health and the environment against harmful effects caused by the collection, transport, treatment, storage and tipping of waste.

(3) Common terminology and a definition of waste are needed in order to improve the efficiency of waste management in the Community.

(4) Effective and consistent rules on waste disposal and recovery should be applied, subject to certain exceptions, to movable property which the holder discards or intends or is required to discard.

(5) The recovery of waste and the use of recovered materials as raw materials should be encouraged in order to conserve natural resources. It may be necessary to adopt specific rules for re-usable waste.

(6) In order to achieve a high level of environmental protection, Member States should, in addition to taking responsible action to ensure the disposal and recovery of waste, take measures to restrict the production of waste particularly by promoting clean technologies and products which can be recycled and re-used, taking into consideration existing or potential market opportunities for recovered waste.

(7) Moreover, discrepancies between Member States' legislation with regard to waste disposal and recovery may affect the quality of the environment and the smooth operation of the internal market.

(8) It is important for the Community as a whole to become self-sufficient in waste disposal and desirable for Member States individually to aim at such self-sufficiency.

(9) In order to achieve those objectives, waste management plans should be drawn up in the Member States.

(10) Movements of waste should be reduced and Member States may take the necessary measures to that end in their management plans.

(11) To ensure a high level of protection and effective control, it is necessary to provide for authorisation and inspection of undertakings which carry out waste disposal and recovery.

⁽¹⁾ OJ C 112, 30.4.2004, p. 46.

⁽²⁾ Opinion of the European Parliament of 9 March 2004 (OJ C 102 E, 28.4.2004, p. 106) and Council Decision of 30 January 2006.

⁽³⁾ OJ L 194, 25.7.1975, p. 39. Directive as last amended by Regulation (EC) No 1882/2003 of the European Parliament and of the Council (OJ L 284, 31.10.2003, p. 1).

⁽⁴⁾ See Part A of Annex III.

- (12) Subject to certain conditions, and provided that they comply with environmental protection requirements, some establishments which process their waste themselves or carry out waste recovery may be exempted from permit requirements. Such establishments should be subject to registration.
- (13) In order that waste can be monitored from its production to its final disposal, other undertakings involved with waste, such as waste collectors, carriers and brokers should also be subject to authorisation or registration and appropriate inspection.
- (14) That proportion of the costs not covered by the proceeds of treating the waste must be defrayed in accordance with the 'polluter pays' principle.
- (15) The measures necessary for the implementation of this Directive should be adopted in accordance with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission ⁽¹⁾.
- (16) This Directive should be without prejudice to the obligations of the Member States relating to the time-limits for transposition into national law of the Directives listed in Part B of Annex III,

HAVE ADOPTED THIS DIRECTIVE:

Article 1

1. For the purposes of this Directive:

- (a) 'waste' shall mean any substance or object in the categories set out in Annex I which the holder discards or intends or is required to discard;
- (b) 'producer' shall mean anyone whose activities produce waste ('original producer') and/or anyone who carries out pre-processing, mixing or other operations resulting in a change in the nature or composition of this waste;
- (c) 'holder' shall mean the producer of the waste or the natural or legal person who is in possession of it;
- (d) 'management' shall mean the collection, transport, recovery and disposal of waste, including the supervision of such operations and after-care of disposal sites;

- (e) 'disposal' shall mean any of the operations provided for in Annex II A;
- (f) 'recovery' shall mean any of the operations provided for in Annex II B;
- (g) 'collection' shall mean the gathering, sorting and/or mixing of waste for the purpose of transport.

2. For the purposes of paragraph 1, point (a), the Commission, acting in accordance with the procedure referred to in Article 18(3), shall draw up a list of waste belonging to the categories listed in Annex I. This list shall be periodically reviewed and, if necessary, revised in accordance with the same procedure.

Article 2

1. The following shall be excluded from the scope of this Directive:

- (a) gaseous effluents emitted into the atmosphere;
- (b) where they are already covered by other legislation:
- (i) radioactive waste;
- (ii) waste resulting from prospecting, extraction, treatment and storage of mineral resources and the working of quarries;
- (iii) animal carcasses and the following agricultural waste: faecal matter and other natural, non-dangerous substances used in farming;
- (iv) waste waters, with the exception of waste in liquid form;
- (v) decommissioned explosives.

2. Specific rules for particular instances, or supplementing those of this Directive, on the management of particular categories of waste, may be laid down by means of individual Directives.

⁽¹⁾ OJ L 184, 17.7.1999, p. 23.

Article 3

1. Member States shall take appropriate measures to encourage:

- (a) first, the prevention or reduction of waste production and its harmfulness, in particular by:
 - (i) the development of clean technologies more sparing in their use of natural resources;
 - (ii) the technical development and marketing of products designed so as to make no contribution or to make the smallest possible contribution, by the nature of their manufacture, use or disposal, to increasing the amount or harmfulness of waste and pollution hazards;
 - (iii) the development of appropriate techniques for the final disposal of dangerous substances contained in waste destined for recovery;
- (b) second:
 - (i) the recovery of waste by means of recycling, re-use or reclamation or any other process with a view to extracting secondary raw materials; or
 - (ii) the use of waste as a source of energy.

2. Except where Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations ⁽¹⁾ applies, Member States shall inform the Commission of any measures they intend to take to achieve the aims set out in paragraph 1. The Commission shall inform the other Member States and the Committee referred to in Article 18(1) of such measures.

Article 4

1. Member States shall take the necessary measures to ensure that waste is recovered or disposed of without endangering human health and without using processes or methods which could harm the environment, and in particular:

- (a) without risk to water, air or soil, or to plants or animals;
- (b) without causing a nuisance through noise or odours;

- (c) without adversely affecting the countryside or places of special interest.

2. Member States shall take the necessary measures to prohibit the abandonment, dumping or uncontrolled disposal of waste.

Article 5

1. Member States shall take appropriate measures, in cooperation with other Member States where this is necessary or advisable, to establish an integrated and adequate network of disposal installations, taking account of the best available technology not involving excessive costs. The network must enable the Community as a whole to become self-sufficient in waste disposal and the Member States to move towards that aim individually, taking into account geographical circumstances or the need for specialised installations for certain types of waste.

2. The network referred to in paragraph 1 must enable waste to be disposed of in one of the nearest appropriate installations, by means of the most appropriate methods and technologies in order to ensure a high level of protection for the environment and public health.

Article 6

Member States shall establish or designate the competent authority or authorities to be responsible for implementing this Directive.

Article 7

1. In order to attain the objectives referred to in Articles 3, 4 and 5, the competent authority or authorities referred to in Article 6 shall be required to draw up as soon as possible one or more waste management plans. Such plans shall relate in particular to:

- (a) the type, quantity and origin of waste to be recovered or disposed of;
- (b) general technical requirements;
- (c) any special arrangements for particular wastes;
- (d) suitable disposal sites or installations.

⁽¹⁾ OJ L 204, 21.7.1998, p. 37. Directive as last amended by the 2003 Act of Accession.

2. The plans referred to in paragraph 1 may, for example, cover:

- (a) the natural or legal persons empowered to carry out waste management;
- (b) the estimated costs of the recovery and disposal operations;
- (c) appropriate measures to encourage rationalisation of the collection, sorting and treatment of waste.

3. Member States shall cooperate as appropriate with the other Member States and the Commission to draw up such plans. They shall notify Commission of them.

4. Member States may take the measures necessary to prevent movements of waste which do not comply with their waste management plans. They shall inform the Commission and the Member States of any such measures.

Article 8

Member States shall take the necessary measures to ensure that any holder of waste:

- (a) has it handled by a private or public waste collector or by an undertaking which carries out the operations listed in Annex II A or II B; or
- (b) recovers or disposes of it himself in accordance with the provisions of this Directive.

Article 9

1. For the purposes of implementing Articles 4, 5 and 7, any establishment or undertaking which carries out the operations specified in Annex II A shall obtain a permit from the competent authority referred to in Article 6.

Such permit shall cover:

- (a) the types and quantities of waste;
- (b) the technical requirements;
- (c) the safety precautions to be taken;
- (d) the disposal site;
- (e) the treatment method.

2. Permits may be granted for a specified period, they may be renewable, they may be subject to conditions and obligations, or, notably, if the intended method of disposal is unacceptable from the point of view of environmental protection, they may be refused.

Article 10

For the purposes of applying Article 4, any establishment or undertaking which carries out the operations referred to in Annex II B shall obtain a permit.

Article 11

1. Without prejudice to Council Directive 91/689/EEC of 12 December 1991 on hazardous waste ⁽¹⁾, the following may be exempted from the permit requirement laid down in Article 9 or Article 10:

- (a) establishments or undertakings carrying out their own waste disposal at the place of production; and
- (b) establishments or undertakings that carry out waste recovery.

2. The exemption referred to in paragraph 1 may apply only:

- (a) if the competent authorities have adopted general rules for each type of activity, laying down the types and quantities of waste and the conditions under which the activity in question may be exempted from the permit requirement; and
- (b) if the types or quantities of waste and methods of disposal or recovery are such that the conditions laid down in Article 4 are complied with.

3. The establishments or undertakings referred to in paragraph 1 shall be registered with the competent authorities.

4. Member States shall inform the Commission of the general rules adopted pursuant to paragraph 2, point (a).

⁽¹⁾ OJ L 377, 31.12.1991, p. 20. Directive as amended by Directive 94/31/EC (OJ L 168, 2.7.1994, p. 28).

Article 12

Establishments or undertakings which collect or transport waste on a professional basis or which arrange for the disposal or recovery of waste on behalf of others (dealers or brokers) shall, where they are not subject to authorisation, be registered with the competent authorities.

Article 13

Establishments or undertakings which carry out the operations referred to in Articles 9 to 12 shall be subject to appropriate periodic inspections by the competent authorities.

Article 14

1. All establishments or undertakings referred to in Articles 9 and 10 shall:

- (a) keep a record of the quantity, nature, origin and, where relevant, the destination, frequency of collection, mode of transport and treatment method in respect of the waste referred to in Annex I and the operations referred to in Annex II A or II B;
- (b) make this information available, on request, to the competent authorities referred to in Article 6.

2. Member States may also require producers to comply with the provisions of paragraph 1.

Article 15

In accordance with the 'polluter pays' principle, the cost of disposing of waste must be borne by:

- (a) the holder who has waste handled by a waste collector or by an undertaking as referred to in Article 9; and/or
- (b) the previous holders or the producer of the product from which the waste came.

Article 16

At intervals of three years Member States shall send information to the Commission on the implementation of this Directive, in the form of a sectoral report which shall also cover other pertinent Community Directives. The report shall be drawn up on the basis of a questionnaire or outline drafted by the Commission in accordance with the procedure referred to in Article 18(2). The questionnaire or outline shall be sent to the Member States six months before the start of the period covered by the report. The report shall be made to the Commission within nine months of the end of the three-year period covered by it.

The Commission shall publish a Community report on the implementation of the Directive within nine months of receiving the reports from the Member States.

Article 17

The amendments necessary for adapting the Annexes to scientific and technical progress shall be adopted in accordance with the procedure referred to in Article 18(3).

Article 18

- 1. The Commission shall be assisted by a committee.
- 2. Where reference is made to this paragraph, Articles 4 and 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.

The period laid down in Article 4(3) of Decision 1999/468/EC shall be set at one month.

- 3. Where reference is made to this paragraph, Articles 5 and 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.

The period laid down in Article 5(6) of Decision 1999/468/EC shall be set at three months.

- 4. The Committee shall adopt its rules of procedure.

Article 19

Member States shall communicate to the Commission the texts of the main provisions of national law which they adopt in the field covered by this Directive.

Article 20

Directive 75/442/EEC is hereby repealed, without prejudice to Member States' obligations relating to the time-limits for transposition into national law set out in Annex III, Part B.

References made to the repealed Directive shall be construed as being made to this Directive and should be read in accordance with the correlation table in Annex IV.

Article 21

This Directive shall enter into force on the 20th day following its publication in the *Official Journal of the European Union*.

Article 22

This Directive is addressed to the Member States.

Done at Strasbourg, 5 April 2006.

For the European Parliament

The President

J. BORRELL FONTELLES

For the Council

The President

H. WINKLER

ANNEX I

CATEGORIES OF WASTE

- Q1 Production or consumption residues not otherwise specified below
 - Q2 Off-specification products
 - Q3 Products whose date for appropriate use has expired
 - Q4 Materials spilled, lost or having undergone other mishap, including any materials, equipment, etc., contaminated as a result of the mishap
 - Q5 Materials contaminated or soiled as a result of planned actions (e.g. residues from cleaning operations, packing materials, containers, etc.)
 - Q6 Unusable parts (e.g. reject batteries, exhausted catalysts, etc.)
 - Q7 Substances which no longer perform satisfactorily (e.g. contaminated acids, contaminated solvents, exhausted tempering salts, etc.)
 - Q8 Residues of industrial processes (e.g. slags, still bottoms, etc.)
 - Q9 Residues from pollution abatement processes (e.g. scrubber sludges, baghouse dusts, spent filters, etc.)
 - Q10 Machining/finishing residues (e.g. lathe turnings, mill scales, etc.)
 - Q11 Residues from raw materials extraction and processing (e.g. mining residues, oil field slops, etc.)
 - Q12 Adulterated materials (e.g. oils contaminated with PCBs, etc.)
 - Q13 Any materials, substances or products the use of which has been banned by law
 - Q14 Products for which the holder has no further use (e.g. agricultural, household, office, commercial and shop discards, etc.)
 - Q15 Contaminated materials, substances or products resulting from remedial action with respect to land
 - Q16 Any materials, substances or products which are not contained in the abovementioned categories.
-

ANNEX II A

DISPOSAL OPERATIONS

- NB:** This Annex is intended to list disposal operations such as they occur in practice. In accordance with Article 4, waste must be disposed of without endangering human health and without the use of processes or methods likely to harm the environment.
- D 1 Deposit into or on to land (e.g. landfill, etc.)
- D 2 Land treatment (e.g. biodegradation of liquid or sludgy discards in soils, etc.)
- D 3 Deep injection (e.g. injection of pumpable discards into wells, salt domes or naturally occurring repositories, etc.)
- D 4 Surface impoundment (e.g. placement of liquid or sludgy discards into pits, ponds or lagoons, etc.)
- D 5 Specially engineered landfill (e.g. placement into lined discrete cells which are capped and isolated from one another and the environment, etc.)
- D 6 Release into a water body except seas/oceans
- D 7 Release into seas/oceans including sea-bed insertion
- D 8 Biological treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations numbered D 1 to D 7 and D 9 to D 12
- D 9 Physico-chemical treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations numbered D 1 to D 8 and D 10 to D 12 (e.g. evaporation, drying, calcination, etc.)
- D 10 Incineration on land
- D 11 Incineration at sea
- D 12 Permanent storage (e.g. emplacement of containers in a mine, etc.)
- D 13 Blending or mixing prior to submission to any of the operations numbered D 1 to D 12
- D 14 Repackaging prior to submission to any of the operations numbered D 1 to D 13
- D 15 Storage pending any of the operations numbered D 1 to D 14 (excluding temporary storage, pending collection, on the site where it is produced)
-

ANNEX II B

RECOVERY OPERATIONS

- NB: This Annex is intended to list recovery operations as they occur in practice. In accordance with Article 4, waste must be recovered without endangering human health and without the use of processes or methods likely to harm the environment.
- R 1 Use principally as a fuel or other means to generate energy
- R 2 Solvent reclamation/regeneration
- R 3 Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes)
- R 4 Recycling/reclamation of metals and metal compounds
- R 5 Recycling/reclamation of other inorganic materials
- R 6 Regeneration of acids or bases
- R 7 Recovery of components used for pollution abatement
- R 8 Recovery of components from catalysts
- R 9 Oil re-refining or other reuses of oil
- R 10 Land treatment resulting in benefit to agriculture or ecological improvement
- R 11 Use of wastes obtained from any of the operations numbered R 1 to R 10
- R 12 Exchange of wastes for submission to any of the operations numbered R 1 to R 11
- R 13 Storage of wastes pending any of the operations numbered R 1 to R 12 (excluding temporary storage, pending collection, on the site where it is produced)
-

ANNEX III

PART A

REPEALED DIRECTIVE WITH ITS SUCCESSIVE AMENDMENTS

(referred to in Article 20)

Council Directive 75/442/EEC (OJ L 194, 25.7.1975, p. 39)	
Council Directive 91/156/EEC (OJ L 78, 26.3.1991, p. 32)	
Council Directive 91/692/EEC (OJ L 377, 31.12.1991, p. 48)	only as regards the reference to Directive 75/442/EEC in Annex VI
Commission Decision 96/350/EC (OJ L 135, 6.6.1996, p. 32)	
Regulation (EC) No 1882/2003 of the European Parliament and of the Council (OJ L 284, 31.10.2003, p. 1)	Annex III, point 1 only

PART B

LIST OF TIME-LIMITS FOR TRANSPOSITION INTO NATIONAL LAW

(referred to in Article 20)

Directive	Time-limit for transposition
75/442/EEC	17 July 1977
91/156/EEC	1 April 1993
91/692/EEC	1 January 1995

ANNEX IV

CORRELATION TABLE

Directive 75/442/EEC	This Directive
Article 1, introductory words	Article 1(1) introductory words
Article 1(a) first subparagraph	Article 1(1)(a)
Article 1(a) second subparagraph	Article 1(2)
Article 1(b) — (g)	Article 1(1)(b) — (g)
Article 2	Article 2
Article 3(1) introductory words	Article 3(1) introductory words
Article 3(1)(a) introductory words	Article 3(1)(a) introductory words
Article 3(1)(a) first indent	Article 3(1)(a)(i)
Article 3(1)(a) second indent	Article 3(1)(a)(ii)
Article 3(1)(a) third indent	Article 3(1)(a)(iii)
Article 3(1)(b), introductory words	Article 3(1)(b) introductory words
Article 3(1)(b) first indent	Article 3(1)(b)(i)
Article 3(1)(b) second indent	Article 3(1)(b)(ii)
Article 3(2)	Article 3(2)
Article 4, first paragraph, introductory words	Article 4(1), introductory words
Article 4, first paragraph, first indent	Article 4(1)(a)
Article 4, first paragraph, second indent	Article 4(1)(b)
Article 4, first paragraph, third indent	Article 4(1)(c)
Article 4, second paragraph	Article 4(2)
Article 5	Article 5
Article 6	Article 6
Article 7(1), first subparagraph, introductory words	Article 7(1), introductory words
Article 7(1), first subparagraph, first indent	Article 7(1)(a)
Article 7(1), first subparagraph, second indent	Article 7(1)(b)
Article 7(1), first subparagraph, third indent	Article 7(1)(c)
Article 7(1), first subparagraph, fourth indent	Article 7(1)(d)
Article 7(1), second subparagraph, introductory words	Article 7(2), introductory words
Article 7(1), second subparagraph, first indent	Article 7(2)(a)
Article 7(1), second subparagraph, second indent	Article 7(2)(b)
Article 7(1), second subparagraph, third indent	Article 7(2)(c)
Article 7(2)	Article 7(3)
Article 7(3)	Article 7(4)
Article 8, introductory words	Article 8, introductory words

Directive 75/442/EEC	This Directive
Article 8, first indent	Article 8(a)
Article 8, second indent	Article 8(b)
Article 9(1), first subparagraph	Article 9(1), first subparagraph
Article 9(1), second subparagraph, introductory words	Article 9(1), second subparagraph, introductory words
Article 9(1), second subparagraph, first indent	Article 9(1), second subparagraph, (a)
Article 9(1), second subparagraph, second indent	Article 9(1), second subparagraph, (b)
Article 9(1), second subparagraph, third indent	Article 9(1), second subparagraph, (c)
Article 9(1), second subparagraph, fourth indent	Article 9(1), second subparagraph, (d)
Article 9(1), second subparagraph, fifth indent	Article 9(1), second subparagraph, (e)
Article 9(2)	Article 9(2)
Article 10	Article 10
Article 11(1), first subparagraph	Article 11(1)
Article 11(1), second subparagraph, introductory words	Article 11(2), introductory words
Article 11(1), second subparagraph, first indent	Article 11(2)(a)
Article 11(1), second subparagraph, second indent	Article 11(2)(b)
Article 11(2)	Article 11(3)
Article 11(3)	Article 11(4)
Article 12	Article 12
Article 13	Article 13
Article 14, first paragraph, introductory words	Article 14(1), introductory words
Article 14, first paragraph, first indent	Article 14(1)(a)
Article 14, first paragraph, second indent	Article 14(1)(b)
Article 14, second subparagraph	Article 14(2)
Article 15, introductory words	Article 15, introductory words
Article 15, first indent	Article 15(a)
Article 15, second indent	Article 15(b)
Article 16, first paragraph	Article 16, first paragraph and Article 18(2)
Article 16, second paragraph	—
Article 16, third paragraph	Article 16, second paragraph
Article 17	Article 17
Article 18(1)	Article 18(1)
Article 18(2)	Article 18(3)
Article 18(3)	Article 18(4)
Article 19	—

Directive 75/442/EEC	This Directive
Article 20	Article 19
—	Article 20
—	Article 21
Article 21	Article 22
Annex I	Annex I
Annex II A	Annex II A
Annex II B	Annex II B
—	Annex III
—	Annex IV

DIRECTIVE 2006/23/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**of 5 April 2006****on a Community air traffic controller licence****(Text with EEA relevance)**

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 80(2) thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Economic and Social Committee ⁽¹⁾,

After consulting the Committee of the Regions,

Acting in accordance with the procedure laid down in Article 251 of the Treaty ⁽²⁾,

Whereas:

- (1) Implementation of the Single European Sky legislation requires the establishment of more detailed legislation, in particular concerning the licensing of air traffic controllers, in order to ensure the highest standards of responsibility and competence, to improve the availability of air traffic controllers and to promote the mutual recognition of licences, as envisaged in Article 5 of Regulation (EC) No 550/2004 of the European Parliament and of the Council of 10 March 2004 on the provision of air navigation services in the single European sky ⁽³⁾, while pursuing the objective of an overall improvement in air traffic safety and competence of personnel.
- (2) The introduction of a Community licence is a means of recognising the specific role which air traffic controllers play in the safe provision of air traffic control. The establishment of Community competence standards will also reduce fragmentation in this field, making for more

efficient organisation of work in the framework of growing regional collaboration between air navigation service providers. This Directive is therefore an essential part of the Single European Sky legislation.

- (3) A Directive is the most suitable instrument to set competence standards, thus leaving to the Member States to decide on the ways to achieve such standards.
- (4) This Directive should build on existing international standards. The International Civil Aviation Organisation (ICAO) has adopted provisions on air traffic controller licensing, including linguistic requirements. The European Organisation for the Safety of Air Navigation (Eurocontrol) set up by the International Convention of 13 December 1960 relating to Cooperation for the Safety of Air Navigation has adopted Eurocontrol Safety Regulatory Requirements. In accordance with Article 4 of Regulation (EC) No 550/2004 this Directive transposes the requirements laid down in Eurocontrol Safety Regulatory Requirement No 5 (ESARR 5) relevant to air traffic controllers.
- (5) The particular characteristics of Community air traffic call for the introduction and effective application of Community competence standards for air traffic controllers employed by air navigation service providers primarily involved in general air traffic. Member States may also apply the national provisions taken pursuant to this Directive to student air traffic controllers and air traffic controllers exercising their functions under the responsibility of air navigation service providers offering their services primarily to aircraft movements other than general air traffic.
- (6) Where Member States take action to ensure compliance with Community requirements, the authorities performing supervision and verification of compliance should be sufficiently independent of air navigation service providers and training providers. The authorities must also remain capable of performing their tasks efficiently. The national supervisory authority nominated or established under this Directive may be the same body or bodies nominated or established in accordance with Article 4 of Regulation (EC) No 549/2004 of the European Parliament and of the Council of 10 March 2004 laying down the framework for the creation of the single European sky ⁽⁴⁾.

⁽¹⁾ OJ C 234, 22.9.2005, p. 17.

⁽²⁾ Opinion of the European Parliament of 8 March 2005 (OJ C 320 E, 15.12.2005, p. 50), Council Common Position of 14 November 2005 (OJ C 316 E, 13.12.2005, p. 1) and Position of the European Parliament of 15 February 2006 (not yet published in the Official Journal).

⁽³⁾ OJ L 96, 31.3.2004, p. 10.

⁽⁴⁾ OJ L 96, 31.3.2004, p. 1.

- (7) The provision of air navigation services requires highly skilled personnel whose competence can be demonstrated by several means. For air traffic control the appropriate means is the introduction of a Community licence, to be seen as a kind of diploma, for each individual air traffic controller. The rating on a licence indicates the type of air traffic service an air traffic controller is competent to provide. At the same time, the endorsements included on the licence reflect both the specific skills of the controller and the authorisation of the supervisory authorities to provide services for a particular sector or group of sectors. That is why the authorities must be in a position to evaluate the competence of air traffic controllers when issuing licences or extending the validity of the endorsements. The authorities must also be in a position to suspend a licence, ratings or endorsements when competence is in doubt. In an effort to promote the reporting of incidents (just culture), this Directive should not establish an automatic link between an incident and the suspension of a licence, rating or endorsement. Revocation of a licence should be considered as the last resort for extreme cases.
- (8) In order to build the confidence of Member States in each other's licensing systems, Community rules on obtaining and maintaining licences are indispensable. It is therefore important, with a view to ensuring the highest level of safety, to harmonise the requirements as regards qualifications, competence and access to the profession of air traffic controller. This should lead to the provision of safe, high-quality air traffic control services and the recognition of licences throughout the Community, thereby increasing freedom of movement and improving the availability of air traffic controllers.
- (9) Member States should ensure that implementation of this Directive does not lead to circumvention of existing national provisions governing the rights and obligations applicable to the employment relationship between an employer and applicant air traffic controllers.
- (10) In order to make skills comparable throughout the Community, they need to become structured in a clear and generally accepted way. This will help to guarantee safety not only within the airspace under the control of one air navigation service provider, but especially at the interface between different service providers.
- (11) In many incidents and accidents, communication plays a significant role. ICAO has therefore adopted language knowledge requirements. This Directive develops these requirements and provides a means of enforcing these internationally accepted standards. There is a need for observance of the principles of non-discrimination, transparency and proportionality in language requirements, so as to encourage free movement while ensuring safety.
- (12) The objectives of initial training are described in the guidance material developed at the request of the members of Eurocontrol and are considered the appropriate standards. For unit training the lack of generally accepted standards needs to be offset by a range of measures, including the approval of examiners, which should guarantee high standards of competence. This is all the more important as unit training is very costly and decisive in terms of safety.
- (13) Medical requirements have been developed at the request of Eurocontrol Member States and are considered an acceptable means of compliance with this Directive.
- (14) The certification of training provision should be regarded, in terms of safety, as one of the decisive factors contributing to the quality of training. Training should be seen as a service similar to air navigation services, also subject to a certification process. This Directive should make it possible to certify training by type of training, by package of training services or by package of training and air navigation services, without losing sight of the particular characteristics of training.
- (15) This Directive confirms long-standing case-law of the Court of Justice of the European Communities in the field of mutual recognition of diplomas and freedom of movement of workers. The principle of proportionality, reasoned justifications for the imposition of compensation measures and the provision of appropriate appeal procedures constitute basic principles which need to become applicable to the air traffic management sector in a more visible manner. Member States should be entitled to refuse to recognise licences not issued in accordance with this Directive; Member States should also be entitled to recognise such licences after undertaking the appropriate equivalence assessment. Since this Directive is aimed at facilitating the mutual recognition of licences, it does not regulate the conditions concerning access to employment.
- (16) The profession of air traffic controller is subject to technical innovations which call for such controllers' skills to be regularly updated. This Directive should allow such adaptations to technical developments and scientific progress through the use of the committee procedure.
- (17) This Directive may have an impact on the daily working practices of air traffic controllers. The social partners should be informed and consulted in an appropriate way on all measures having significant social implications.

Therefore, the Sectoral Dialogue Committee set up under Commission Decision 98/500/EC of 20 May 1998 on the establishment of Sectoral Dialogue Committees promoting the Dialogue between the social partners at European level ⁽¹⁾ has been consulted and should be consulted on further implementing measures taken by the Commission.

HAVE ADOPTED THIS DIRECTIVE:

Article 1

Objective and scope

1. The objective of this Directive is to increase safety standards and to improve the operation of the Community air traffic control system through the issuing of a Community air traffic controller licence.

2. This Directive shall apply to:

— student air traffic controllers, and

— air traffic controllers

exercising their functions under the responsibility of air navigation service providers which offer their services primarily to aircraft movements of general air traffic.

3. Subject to Articles 1(2) and 13 of Regulation (EC) No 549/2004, in cases where regular and planned air traffic control services are provided to general air traffic under the responsibility of air navigation service providers which offer their services primarily to aircraft movements other than general air traffic, Member States shall ensure that the level of safety and quality of the services to general air traffic is at least equivalent to the level resulting from the application of the provisions of this Directive.

Article 2

Definitions

For the purposes of this Directive, the following definitions shall apply:

1. 'air traffic control service' means a service provided for the purpose of preventing collisions between aircraft, and, on the manoeuvring area, between aircraft and obstructions, and expediting and maintaining an orderly flow of air traffic;

2. 'air navigation service providers' means any public or private entity providing air navigation services for general air traffic;

3. 'general air traffic' means all movements of civil aircraft, as well as all movements of State aircraft (including military, customs and police aircraft) when these movements are carried out in conformity with the procedures of the ICAO;

(18) Member States should lay down rules on the penalties applicable to infringements of the national provisions adopted pursuant to this Directive and take all measures necessary to ensure that they are implemented. Those penalties should be effective, proportionate and dissuasive.

(19) The measures necessary for the implementation of this Directive should be adopted in accordance with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission ⁽²⁾.

(20) A two-year transposition period is considered sufficient for establishing a Community licensing framework and assimilating within that framework the licences of current licence holders, in accordance with the provisions concerning the conditions for maintaining ratings and keeping endorsements valid, as the requirements laid down in those provisions are in line with existing international obligations. Furthermore, an additional transposition period of two years should be granted for the application of the linguistic requirements.

(21) The general conditions for obtaining a licence, insofar as they relate to age, educational requirements and initial training, should not affect the holders of existing licences.

(22) In accordance with point 34 of the Interinstitutional agreement on better law-making ⁽³⁾, Member States are encouraged to draw up, for themselves and in the interests of the Community, their own tables illustrating, as far as possible, the correlation between this Directive and the transposition measures, and to make them public,

⁽¹⁾ OJ L 225, 12.8.1998, p. 27. Decision as amended by the 2003 Act of Accession.

⁽²⁾ OJ L 184, 17.7.1999, p. 23.

⁽³⁾ OJ C 321, 31.12.2003, p. 1.

4. 'licence' means a certificate, by whatever name it may be known, issued and endorsed in accordance with this Directive and entitling its lawful holder to provide air traffic control services in accordance with the ratings and endorsements contained therein;
 5. 'rating' means the authorisation entered on or associated with a licence and forming part thereof, stating specific conditions, privileges or limitations pertaining to such licence; the ratings on a licence are at least one of the following:
 - (a) aerodrome control visual;
 - (b) aerodrome control instrument;
 - (c) approach control procedural;
 - (d) approach control surveillance;
 - (e) area control procedural;
 - (f) area control surveillance;
 6. 'rating endorsement' means the authorisation entered on and forming part of a licence, indicating the specific conditions, privileges or limitations pertaining to the relevant rating;
 7. 'unit endorsement' means the authorisation entered on and forming part of a licence, indicating the ICAO location indicator and the sectors and/or working positions where the holder of the licence is competent to work;
 8. 'language endorsement' means the authorisation entered on and forming part of a licence, indicating the language proficiency of the holder;
 9. 'instructor endorsement' means the authorisation entered on and forming part of a licence, indicating the competence of the holder to give on-the-job training instruction;
 10. 'ICAO location indicator' means the four-letter code group formulated in accordance with rules prescribed by ICAO in its manual DOC 7910 and assigned to the location of an aeronautical fixed station;
 11. 'sector' means a part of a control area and/or part of a flight information region/upper region;
 12. 'training' is the entirety of theoretical courses, practical exercises, including simulation, and on-the-job training required in order to acquire and maintain the skills to deliver safe, high quality air traffic control services; it consists of:
 - (a) initial training, providing basic and rating training, leading to the grant of a student licence;
 - (b) unit training, including transitional training prior to on-the-job training and on-the-job training, leading to the grant of an air traffic controller licence;
 - (c) continuation training, keeping the endorsements of the licence valid;
 - (d) training of on-the-job training instructors, leading to the grant of the instructor endorsement;
 - (e) training of examiners and/or assessors;
 13. 'training provider' is an organisation which has been certified by the relevant national supervisory authority to provide one or more types of training;
 14. 'Unit Competence Scheme' is an approved scheme indicating the method by which the unit maintains the competence of its licence holders;
 15. 'Unit Training Plan' is an approved plan detailing the processes and timing required to allow the unit procedures to be applied to the local area under the supervision of an on-the-job-training instructor.
- Article 3*
- National supervisory authorities**
1. Member States shall nominate or establish a body or bodies as their national supervisory authority in order to assume the tasks assigned to such authority under this Directive.
 2. The national supervisory authorities shall be independent of air navigation service providers and training providers. This independence shall be achieved through adequate separation, at the functional level at least, between the national supervisory authorities and such providers. Member States shall ensure that national supervisory authorities exercise their powers impartially and transparently.
 3. Member States shall notify the Commission of the names and addresses of the national supervisory authorities, as well as any changes thereof, and of the measures taken to ensure compliance with paragraph 2.

*Article 4***Licensing principles**

1. Without prejudice to Article 1(3), Member States shall ensure that air traffic control services within the scope of Article 1(2) are only provided by air traffic controllers licensed in accordance with this Directive.

2. Applicants for a licence shall prove that they are competent to act as air traffic controllers or as student air traffic controllers. The evidence demonstrating their competence shall relate to knowledge, experience, skills and linguistic proficiency.

3. The licence shall remain the property of the person to whom it is granted and who shall sign it.

4. In accordance with Article 14(1):

(a) a licence, ratings or endorsements may be suspended when the competence of the air traffic controller is in doubt or in cases of misconduct;

(b) a licence may be revoked in cases of gross negligence or abuse.

5. The student air traffic controller licence shall authorise the holder to provide air traffic control services under the supervision of an on-the-job-training instructor.

6. The licence shall include the items set out in Annex I.

7. When a licence is issued in a language other than English, it shall include an English translation of the items set out in Annex I.

8. Member States shall ensure that air traffic controllers are sufficiently trained in safety, security and crisis management.

*Article 5***Conditions for obtaining a licence**

1. Student air traffic controller licences shall be granted to applicants who:

(a) are at least 18 years old and are holders of at least a secondary education diploma or a diploma granting access to university or equivalent.

Member States may provide that the national supervisory authority evaluate the educational standard of applicants who do not fulfil this educational requirement. If this evaluation demonstrates that an applicant has experience and education which gives him/her a reasonable prospect of completing air traffic controller training, this shall be regarded as sufficient;

(b) have successfully completed approved initial training relevant to the rating, and rating endorsement if applicable, as set out in Part A of Annex II;

(c) hold a valid medical certificate; and

(d) have demonstrated an adequate level of linguistic proficiency in accordance with the requirements set out in Annex III.

The licence shall contain at least one rating and one rating endorsement, if applicable.

2. Air traffic controller licences shall be granted to applicants who:

(a) are at least 21 years old. However, Member States may provide for a lower age limit in duly justified cases;

(b) are holders of a student licence and have completed an approved unit training plan and successfully passed the appropriate examinations or assessments in accordance with the requirements set out in Part B of Annex II;

(c) hold a valid medical certificate; and

(d) have demonstrated an adequate level of linguistic proficiency in accordance with the requirements set out in Annex III.

The licence shall be validated by the inclusion of one or more ratings and the relevant rating, unit and language endorsements for which training was successfully completed.

3. The instructor endorsement shall be granted to holders of an air traffic controller licence who:

(a) have provided air traffic control services for an immediately preceding period of at least one year, or such longer duration as is fixed by the national supervisory authority having regard to the ratings and endorsements for which instruction is given; and

- (b) have successfully completed an approved on-the-job training instructor course during which the required knowledge and pedagogical skills were assessed through appropriate examinations.

Article 7

Rating endorsements

Article 6

Air traffic controller ratings

Licences shall contain one or more of the following ratings in order to indicate the type of service which the licence holder may provide:

- (a) the Aerodrome Control Visual rating (ADV), which shall indicate that the holder of the licence is competent to provide an air traffic control service to aerodrome traffic at an aerodrome that has no published instrument approach or departure procedures;
- (b) the Aerodrome Control Instrument rating (ADI), which shall indicate that the holder of the licence is competent to provide an air traffic control service to aerodrome traffic at an aerodrome that has published instrument approach or departure procedures and shall be accompanied by at least one of the rating endorsements described in Article 7(1);
- (c) the Approach Control Procedural rating (APP), which shall indicate that the holder of the licence is competent to provide an air traffic control service to arriving, departing or transiting aircraft without the use of surveillance equipment;
- (d) the Approach Control Surveillance rating (APS), which shall indicate that the holder of the licence is competent to provide an air traffic control service to arriving, departing or transiting aircraft with the use of surveillance equipment and shall be accompanied by at least one of the rating endorsements described in Article 7(2);
- (e) the Area Control Procedural rating (ACP), which shall indicate that the holder of the licence is competent to provide an air traffic control service to aircraft without the use of surveillance equipment;
- (f) the Area Control Surveillance rating (ACS), which shall indicate that the holder of the licence is competent to provide an air traffic control service to aircraft with the use of surveillance equipment and shall be accompanied by at least one of the rating endorsements described in Article 7(3).

1. The Aerodrome Control Instrument rating (ADI) shall bear at least one of the following endorsements:

- (a) the Tower Control endorsement (TWR), which shall indicate that the holder is competent to provide control services where aerodrome control is provided from one working position;
- (b) the Ground Movement Control endorsement (GMC), which shall indicate that the holder of the licence is competent to provide ground movement control;
- (c) the Ground Movement Surveillance endorsement (GMS), granted in addition to the Ground Movement Control endorsement or Tower Control endorsement, which shall indicate that the holder is competent to provide ground movement control with the help of aerodrome surface movement guidance systems;
- (d) The Air Control endorsement (AIR), which shall indicate that the holder of the licence is competent to provide air control;
- (e) The Aerodrome Radar Control endorsement (RAD), granted in addition to the Air Control endorsement or Tower Control endorsement, which shall indicate that the holder of the licence is competent to provide aerodrome control with the help of surveillance radar equipment.

2. The Approach Control Surveillance rating (APS) shall bear at least one of the following endorsements:

- (a) the Radar endorsement (RAD), which shall indicate that the holder of the licence is competent to provide an approach control service with the use of primary and/or secondary radar equipment;
- (b) the Precision Approach Radar endorsement (PAR), granted in addition to the Radar endorsement, which shall indicate that the holder of the licence is competent to provide ground-controlled precision approaches with the use of precision approach radar equipment to aircraft on the final approach to the runway;
- (c) the Surveillance Radar Approach endorsement (SRA), granted in addition to the Radar endorsement, which shall indicate that the holder is competent to provide ground-controlled non-precision approaches with the use of surveillance equipment to aircraft on the final approach to the runway;

- (d) the Automatic Dependent Surveillance endorsement (ADS), which shall indicate that the holder is competent to provide an approach control service with the use of automatic dependent surveillance;
- (e) the Terminal Control endorsement (TCL), granted in addition to the Radar or Automatic Dependent Surveillance endorsements, which shall indicate that the holder is competent to provide air traffic control services with the use of any surveillance equipment to aircraft operating in a specified terminal area and/or adjacent sectors.
3. The Area Control Surveillance rating (ACS) shall bear at least one of the following endorsements:
- (a) the Radar endorsement (RAD), which shall indicate that the holder is competent to provide area control services with the use of surveillance radar equipment;
- (b) the Automatic Dependent Surveillance endorsement (ADS), which shall indicate that the holder is competent to provide area control services with the use of automatic dependent surveillance;
- (c) the Terminal Control endorsement (TCL), granted in addition to the Radar or Automatic Dependent Surveillance endorsements, which shall indicate that the holder is competent to provide air traffic control services with the use of any surveillance equipment to aircraft operating in a specified terminal area and/or adjacent sectors;
- (d) the Oceanic Control (OCN) endorsement, which shall indicate that the holder is competent to provide air traffic control services to aircraft operating in an Oceanic Control Area.
4. Without prejudice to paragraphs 1, 2 and 3, Member States may, in exceptional cases which only arise due to particular characteristics of the air traffic in the airspace under their responsibility, develop national endorsements. Such endorsements shall not affect the overall freedom of movement of air traffic controllers.

Article 8

Language endorsements

1. Member States shall ensure that air traffic controllers can demonstrate the ability to speak and understand English to a satisfactory standard. Their proficiency shall be determined in accordance with the language proficiency rating scale set out in Annex III.

2. Member States may impose local language requirements when deemed necessary for reasons of safety.

3. The level required in application of paragraphs 1 and 2 shall be level 4 of the language proficiency rating scale set out in Annex III.

4. Notwithstanding paragraph 3, Member States may require level five of the language proficiency rating scale set out in Annex III in application of paragraphs 1 and/or 2 where the operational circumstances of the particular rating or endorsement warrant a higher level for imperative reasons of safety. Such a requirement shall be objectively justified, non-discriminatory, proportionate and transparent.

5. Proficiency shall be demonstrated by a certificate issued after a transparent and objective assessment procedure approved by the national supervisory authority.

Article 9

Instructor endorsements

The instructor endorsement shall indicate that the holder of the licence is competent to provide training and supervision at a working position for areas covered by a valid rating.

Article 10

Unit endorsements

The unit endorsement shall indicate that the licence holder is competent to provide air traffic control services for a particular sector, group of sectors or working positions under the responsibility of an air traffic services unit.

Member States may, when deemed necessary for reasons of safety, provide that the privileges of a unit endorsement are only exercised by licence holders below a given age.

Article 11

Conditions for maintaining ratings and keeping endorsements valid

1. Unit endorsements shall be valid for an initial period of 12 months. The validity of such endorsements shall be extended for the following 12 months if the air navigation service provider demonstrates that:

- (a) the applicant has been exercising the privileges of the licence for a minimum number of hours, as indicated in the approved unit competence scheme, throughout the previous 12 months;

- (b) the applicant's competence has been assessed in accordance with Part C of Annex II; and
- (c) the applicant holds a valid medical certificate.

The minimum number of working hours, leaving aside instruction tasks, required to maintain the validity of the unit endorsement may be reduced for on-the-job training instructors in proportion to the time spent instructing trainees on the working positions for which the extension is applied.

2. Where unit endorsements cease to be valid, a unit training plan must be successfully completed so as to revalidate the endorsement.

3. The holder of a rating or rating endorsement who has not been providing air traffic control services associated with that rating or rating endorsement for any period of four consecutive years may only commence unit training in that rating or rating endorsement after appropriate assessment as to whether he/she continues to satisfy the conditions of that rating or rating endorsement, and after satisfying any training requirements that result from this assessment.

4. The language proficiency of the applicant shall be formally evaluated at regular intervals, except in the case of applicants who have demonstrated proficiency level six.

This interval shall be no longer than three years for applicants who demonstrate proficiency level four and no longer than six years for applicants who demonstrate proficiency level five.

5. The instructor endorsement shall be valid for a renewable period of 36 months.

Article 12

Medical certificates

1. Medical certificates shall be issued by a competent medical body of the national supervisory authority or by medical examiners approved by the national supervisory authority.

2. The issuing of medical certificates shall be consistent with the provisions of Annex I to the Chicago Convention on International Civil Aviation and the Requirements for European Class 3 Medical Certification of Air Traffic Controllers laid down by Eurocontrol.

3. Medical certificates shall be valid from the date of the medical examination and for 24 months thereafter for air traffic controllers up to the age of 40 years and for 12 months above that age. The medical certificate may be revoked at any time if the medical condition of the holder so requires.

4. Member States shall ensure that effective review or appeal procedures are put in place with the appropriate involvement of independent medical advisors.

5. Member States shall ensure that procedures are established to deal with cases of reduced medical fitness and to enable licence holders to notify their employers that they are becoming aware of any decrease in medical fitness or are under the influence of any psychoactive substance or medicines which might render them unable to exercise the privileges of the licence safely and properly.

Article 13

Certification of Training Providers

1. The provision of training to air traffic controllers, including related assessment procedures, shall be subject to certification by the national supervisory authorities.

2. The requirements for certification shall relate to technical and operational competence and suitability to organise training courses as set out in point 1 of Annex IV.

3. Applications for certification shall be submitted to the national supervisory authorities of the Member State where the applicant has its principal place of operation and, if any, its registered office.

National supervisory authorities shall issue certificates when the applicant training provider fulfils the requirements laid down in point 1 of Annex IV.

Certificates may be issued for each type of training or in combination with other air navigation services, whereby the type of training and the type of air navigation service shall be certified as a package of services.

4. Certificates shall specify the information referred to in point 2 of Annex IV.

5. National supervisory authorities shall monitor compliance with the requirements and conditions attached to the certificates. If a national supervisory authority finds that the holder of a certificate no longer satisfies such requirements or conditions, it shall take appropriate measures, which may include withdrawal of the certificate.

6. A Member State shall recognise certificates issued in another Member State.

Article 14

Guarantee of compliance with competence standards

1. In order to ensure the levels of competence indispensable for air traffic controllers in order for them to perform their work to high safety standards, the Member States shall ensure that national supervisory authorities supervise and monitor their training.

Their tasks shall include:

- (a) the issuing and revocation of licences, ratings and endorsements for which the relevant training and assessment was completed under the area of responsibility of the national supervisory authority;
- (b) the maintenance and suspension of ratings and endorsements, the privileges of which are exercised under the responsibility of the national supervisory authority;
- (c) the certification of training providers;
- (d) the approval of training courses, unit training plans and unit competence schemes;
- (e) the approval of competence examiners or competence assessors;
- (f) the monitoring and auditing of training systems;
- (g) the establishment of appropriate appeal and notification mechanisms.

2. National supervisory authorities shall provide appropriate information and mutual assistance to the national supervisory authorities of other Member States so as to ensure the effective application of this Directive, particularly in cases involving the free movement of air traffic controllers within the Community.

3. The national supervisory authorities shall ensure that a data base is maintained listing the competencies of all licence holders under their responsibility and the validity dates of their endorsements. To this end, operational units within air navigation service providers shall keep records of the hours effectively worked in the sectors, group of sectors or in the working positions for every licence holder working in the unit and shall provide this data to the national supervisory authorities on request.

4. The national supervisory authorities shall approve the licence holders who are entitled to act as competence examiners or competence assessors for unit and continuation training. Approval shall be valid for a renewable period of three years.

5. The national supervisory authorities shall audit the training providers on a regular basis with a view to guaranteeing effective compliance with the standards laid down in this Directive.

In addition to the regular audit, the national supervisory authorities may make on-the-spot visits to check the effective implementation of this Directive and compliance with the standards contained therein.

6. National supervisory authorities may decide to delegate in full or in part the auditing functions and inspections mentioned in paragraph 5 of this Article to recognised organisations in accordance with Article 3 of Regulation (EC) No 550/2004.

7. Member States shall submit to the Commission a report on the application of this Directive by 17 May 2011 and at three-yearly intervals thereafter.

Article 15

Mutual recognition of air traffic controller licences

1. Subject to Article 8, each Member State shall recognise licences and their associated ratings, rating endorsements and language endorsements issued by the national supervisory authority of another Member State in accordance with the provisions of this Directive, as well as the accompanying medical certificates. However, a Member State may decide only to recognise licences of holders who have reached the minimum age limit of 21 as envisaged in Article 5(2)(a).

2. In cases where a licence holder exercises the privileges of the licence in a Member State other than that in which the licence was issued, the licence holder shall have the right to exchange his or her licence for a licence issued in the Member State where the privileges are exercised, without additional conditions being imposed.

3. In order to grant a unit endorsement, the national supervisory authorities shall require the applicant to fulfil the particular conditions associated with this endorsement, specifying the unit, sector or working position. When establishing the unit training plan, the training provider shall take due account of the acquired competencies and the experience of the applicant.

4. The national supervisory authorities shall approve and give a reasoned decision on the unit training plan containing the proposed training for the applicant not later than six weeks after presentation of the evidence, without prejudice to the delay resulting from any appeal that may be made. In their decisions, the national supervisory authorities shall ensure that the principles of non-discrimination and proportionality are respected.

Article 16

Adaptation to technical or scientific progress

In the light of technical or scientific progress, the Commission may adopt, in accordance with the procedure referred to in Article 17(2), amendments to the ratings in Article 6, the rating endorsements in Article 7, the provisions on medical certificates in Article 12(3) and the Annexes.

Article 17

Committee

1. The Commission shall be assisted by the Single Sky Committee instituted by Article 5 of Regulation (EC) No 549/2004.

2. Where reference is made to this paragraph, Articles 5 and 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.

The period laid down in Article 5(6) of Decision 1999/468/EC shall be set at one month.

3. The Committee shall adopt its rules of procedure.

Article 18

Penalties

The Member States shall lay down the rules on penalties applicable to infringements of the national provisions adopted pursuant to this Directive and shall take all measures necessary to ensure that they are implemented. The penalties provided for must be effective, proportionate and dissuasive. The Member States shall notify those provisions to the Commission by 17 May 2008 and shall notify it without delay of any subsequent amendment affecting them.

Article 19

Transitional arrangements

Article 5(2)(a) and (b) shall not apply to holders of air traffic controller licences issued by Member States before 17 May 2008.

Article 20

Transposition

Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 17 May 2008 at the latest, with the exception of Article 8, for which the deadline shall be 17 May 2010. They shall forthwith communicate to the Commission the text of those provisions.

When Member States adopt these measures, they shall contain a reference to this Directive or shall be accompanied by such reference on the occasion of their official publication. The methods of making such reference shall be laid down by Member States.

Article 21

Entry into force

This Directive shall enter into force on the 20th day following its publication in the *Official Journal of the European Union*.

Article 22

Addressees

This Directive is addressed to the Member States.

Done at Strasbourg, 5 April 2006.

For the European Parliament

The President

J. BORRELL FONTELLES

For the Council

The President

H. WINKLER

ANNEX I

SPECIFICATIONS FOR LICENCES

Licences issued by a Member State in accordance with this Directive must conform to the following specifications:

1. Details

1.1. The following details must appear on the licence, an asterisk indicating those items which must be translated into English:

- (a) *name of State or Authority issuing the licence (in bold type);
- (b) *title of licence (in very bold type);
- (c) serial number of the licence, in arabic numerals, given by the authority issuing the licence;
- (d) name of holder in full (in roman alphabet also if script of national language is other than roman);
- (e) date of birth;
- (f) nationality of holder;
- (g) signature of holder;
- (h) *Certification concerning validity and authorisation for holder to exercise privileges appropriate to the licence, indicating:
 - (i) the ratings, rating endorsements, language endorsements, instructor endorsements and unit endorsements,
 - (ii) the dates when they were first issued,
 - (iii) the dates on which their validity expires;
- (i) Signature of officer issuing the licence and the date of such issue;
- (j) Seal or stamp of authority issuing the licence.

1.2. The licence must be accompanied by a valid medical certificate.

2. Material

First quality paper or other suitable material must be used and the items mentioned under point 1 must appear clearly thereon.

3. Colour

3.1. Where the same coloured material is used for all aviation-related licences issued by a Member State, that colour must be white.

3.2. Where aviation-related licences issued by a Member State carry a distinguishing colour marking, the colour of the air traffic controller licence must be yellow.

ANNEX II

TRAINING REQUIREMENTS

PART A

Initial training requirements for air traffic controllers

The initial training will ensure that student air traffic controllers satisfy at least the objectives for basic and rating training, as described in Eurocontrol's 'Guidelines for air traffic controller Common Core Content Initial Training', edition of 10 December 2004, so that air traffic controllers are capable of handling air traffic in a safe, quick and efficient way.

Initial training will cover the following subjects: aviation law, air traffic management, including procedures for civil-military cooperation, meteorology, navigation, aircraft and principles of flight, including an understanding between air traffic controller and pilot, human factors, equipment and systems, professional environment, safety and safety culture, safety management systems, unusual/emergency situations, degraded systems and linguistic knowledge, including radiotelephony phraseology.

The subjects will be taught in such a way that they prepare the applicants for the different types of air traffic services and highlight safety aspects. The initial training will consist of theoretical and practical courses, including simulation, and its duration will be determined in the approved initial training plans. Acquired skills must ensure that the candidate can be considered competent to handle complex and dense traffic situations, facilitating the transition to unit training. The competence of the candidate after initial training will be assessed through appropriate examinations or a system of continuous assessment.

PART B

Unit training requirements for air traffic controllers

Unit training plans will detail the processes and timing required to allow the application of the unit procedures to the local area under the supervision of an on-the-job training instructor. The approved plan will include indications of all elements of the competence assessment system, including work arrangements, progress assessment and examination, together with procedures for notifying the national supervisory authority. Unit training may contain certain elements of the initial training which are specific to national conditions.

The duration of unit training will be determined in the unit training plan. The required skills will be assessed through appropriate examinations or a system of continuous assessment, by approved competence examiners or assessors who will be neutral and objective in their judgment. To this end, the national supervisory authorities will put in place appeal mechanisms to ensure fair treatment of candidates.

PART C

Continuation training requirements for air traffic controllers

Rating and unit endorsements on air traffic controllers' licences will be kept valid through approved continuation training, which consists of training to maintain the skills of air traffic controllers, refresher courses, emergency training and, where appropriate, linguistic training.

Continuation training will consist of theoretical and practical courses, together with simulation. For this purpose, the training provider will establish unit competence schemes detailing the processes, manning and timing necessary to provide for the appropriate continuation training and to demonstrate competence. These schemes will be reviewed and approved at least every three years. The duration of the continuation training will be decided in accordance with the functional needs of the air traffic controllers working in the unit, in particular in the light of changes or planned changes in procedures or equipment, or in the light of the overall safety management requirements. The competence of each air traffic controller will be appropriately assessed at least every three years. The air navigation service provider will ensure that mechanisms are applied to guarantee fair treatment of licence holders where the validity of their endorsements cannot be extended.

*ANNEX III***REQUIREMENTS FOR PROFICIENCY IN LANGUAGES**

The language proficiency requirements laid down in Article 8 are applicable to the use of both phraseologies and plain language. To meet the language proficiency requirements an applicant for a licence or a licence holder will be assessed and must demonstrate compliance with at least the operational level (level four) of the language proficiency rating scale set out in this Annex.

Proficient speakers must:

- (a) communicate effectively in voice-only (telephone/radiotelephone) and in face-to-face situations;
- (b) communicate on common, concrete and work-related topics with accuracy and clarity;
- (c) use appropriate communicative strategies to exchange messages and to recognise and resolve misunderstandings (e.g. to check, confirm or clarify information) in a general or work-related context;
- (d) handle successfully and with relative ease the linguistic challenges presented by a complication or unexpected turn of events that occurs within the context of a routine work situation or communicative task with which they are otherwise familiar; and
- (e) use a dialect or accent which is intelligible to the aeronautical community.

Language proficiency rating scale: expert, extended and operational levels

Level	Pronunciation	Structure	Vocabulary	Fluency	Comprehension	Interactions
Expert 6	Uses a dialect and/or accent intelligible to the aeronautical community.	Relevant grammatical structures and sentence patterns are determined by language functions appropriate to the task.	Vocabulary range and accuracy are sufficient to communicate effectively on a wide variety of familiar and unfamiliar topics. Vocabulary is idiomatic, nuanced, and sensitive to register.	Able to speak at length with a natural, effortless flow. Varies speech flow for stylistic effect, e.g. to emphasise a point. Uses appropriate discourse markers and connectors spontaneously.	Comprehension is consistently accurate in nearly all contexts and includes comprehension of linguistic and cultural subtleties.	Interacts with ease in nearly all situations. Is sensitive to verbal and non-verbal cues, and responds to them appropriately.
Extended 5	Pronunciation, stress, rhythm and intonation, though possibly influenced by the first language or regional variation, almost never interfere with ease of understanding.	Both basic and complex grammatical structures and sentence patterns are consistently well controlled.	Vocabulary range and accuracy are sufficient to communicate effectively on common, concrete, and work-related topics. Paragraphs consistently and successfully. Vocabulary is sometimes idiomatic.	Able to speak at length with relative ease on familiar topics, but may not vary speech flow as a stylistic device. Can make use of appropriate discourse markers or connectors.	Comprehension is accurate on common, concrete, and work-related topics and mostly accurate when the speaker is confronted with a linguistic or situational complication or an unexpected turn of events. Is able to comprehend a range of speech varieties (dialect and/or accent) or registers.	Responses are immediate, appropriate, and informative. Manages the speaker/listener relationship effectively.
Operational 4	Pronunciation, stress, rhythm and intonation are influenced by the first language or regional variation but only sometimes interfere with ease of understanding.	Basic grammatical structures and sentence patterns are used creatively and are usually well controlled. Errors may occur, particularly in unusual or unexpected circumstances, but rarely interfere with meaning.	Vocabulary range and accuracy are usually sufficient to communicate effectively on common, concrete, and work-related topics. Can often paraphrase successfully when lacking vocabulary in unusual or unexpected circumstances.	Produces stretches of language at an appropriate tempo. There may be occasional loss of fluency on transition from rehearsed or formulaic speech to spontaneous interaction, but this does not prevent effective communication. Can make limited use of discourse markers or connectors. Fillers are not distracting.	Comprehension is mostly accurate on common, concrete, and work-related topics when the accent or variety used is sufficiently intelligible for an international community of users. When the speaker is confronted with a linguistic or situational complication or an unexpected turn of events, comprehension may be slower or require clarification strategies.	Responses are usually immediate, appropriate, and informative. Initiates and maintains exchanges even when dealing with an unexpected turn of events. Deals adequately with apparent misunderstandings by checking, confirming, or clarifying.

Language proficiency rating scale: pre-operational, elementary and pre-elementary levels.

[illegible]

ANNEX IV

REQUIREMENTS TO BE ATTACHED TO CERTIFICATES AWARDED TO TRAINING PROVIDERS

1. Compliance with the requirements referred to in Article 13 must be demonstrated by evidence that training providers are adequately staffed and equipped and operate in an environment suitable for the provision of the training necessary to obtain or maintain student air traffic controller licences and air traffic controller licences. In particular training providers must:
 - (a) have an efficient management structure and sufficient staff with adequate qualifications and experience to provide training according to the standards set out in this Directive;
 - (b) have available the necessary facilities, equipment and accommodation appropriate for the type of training offered;
 - (c) provide the methodology they will use to establish details of the content, organisation and duration of training courses, unit training plans and unit competence schemes; this will include the way examinations or assessments will be organised. For examinations related to initial training, including simulation training, the qualifications of the examiners must be indicated in detail;
 - (d) furnish proof of the quality management system in place to monitor compliance with and the adequacy of the systems and procedures which ensure that the training services provided satisfy the standards set out in this Directive;
 - (e) demonstrate that sufficient funding is available to conduct the training according to the standards set out in this Directive and that the activities have sufficient insurance cover in accordance with the nature of the training provided.
2. Certificates must specify:
 - (a) the national supervisory authority issuing the certificate;
 - (b) the applicant (name and address);
 - (c) the type of services which are certified;
 - (d) a statement of the applicant's conformity with the requirements defined in point 1;
 - (e) the date of issue and the period of validity of the certificate.

DIRECTIVE 2006/25/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**of 5 April 2006****on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation) (19th individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC)**

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 137(2) thereof,

Having regard to the proposal from the Commission ⁽¹⁾, presented after consultation with the Advisory Committee on Safety and Health at Work,

Having regard to the opinion of the European Economic and Social Committee ⁽²⁾,

After consulting the Committee of the Regions,

Acting in accordance with the procedure laid down in Article 251 of the Treaty ⁽³⁾, in the light of the joint text approved by the Conciliation Committee on 31 January 2006,

Whereas:

(1) Under the Treaty the Council may, by means of directives, adopt minimum requirements for encouraging improvements, especially in the working environment, to guarantee a better level of protection of the health and safety of workers. Such directives are to avoid imposing administrative, financial and legal constraints in a way which would hold back the creation and development of small and medium-sized enterprises (SMEs).

(2) The communication from the Commission concerning its action programme relating to the implementation of the Community Charter of the Fundamental Social Rights of Workers provides for the introduction of minimum health and safety requirements regarding the exposure of workers to the risks caused by physical agents. In September 1990 the European Parliament adopted a Resolution concerning this action programme ⁽⁴⁾, inviting the Commission in particular to draw up a specific directive on the risks caused by noise, vibration and any other physical agents at the workplace.

(3) As a first step, the European Parliament and the Council adopted Directive 2002/44/EC of 25 June 2002 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (vibration) (16th individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC) ⁽⁵⁾. Next, on 6 February 2003 the European Parliament and the Council adopted Directive 2003/10/EC on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (noise) (17th individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC) ⁽⁶⁾. Thereafter, on 29 April 2004, the European Parliament and the Council adopted Directive 2004/40/EC on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields) (18th individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC) ⁽⁷⁾.

(4) It is now considered necessary to introduce measures protecting workers from the risks associated with optical radiation, owing to its effects on the health and safety of workers, in particular damage to the eyes and to the skin. These measures are intended not only to ensure the health and safety of each worker on an individual basis, but also to create a minimum basis of protection for all Community workers, in order to avoid possible distortions of competition.

(5) One of the aims of this Directive is the timely detection of adverse health effects resulting from exposure to optical radiation.

⁽¹⁾ OJ C 77, 18.3.1993, p. 12 and OJ C 230, 19.8.1994, p. 3.

⁽²⁾ OJ C 249, 13.9.1993, p. 28.

⁽³⁾ Opinion of the European Parliament of 20 April 1994 (OJ C 128, 9.5.1994, p. 146) confirmed on 16 September 1999 (OJ C 54, 25.2.2000, p. 75), Council Common Position of 18 April 2005 (OJ C 172 E, 12.7.2005, p. 26) and Position of the European Parliament of 16 November 2005 (not yet published in the Official Journal), European Parliament Legislative Resolution of 14 February 2006 (not yet published in the Official Journal) and Decision of the Council of 23 February 2006.

⁽⁴⁾ OJ C 260, 15.10.1990, p. 167.

⁽⁵⁾ OJ L 177, 6.7.2002, p. 13.

⁽⁶⁾ OJ L 42, 15.2.2003, p. 38.

⁽⁷⁾ OJ L 159, 30.4.2004, p. 1. Directive as corrected in OJ L 184, 24.5.2004, p. 1.

- (6) This Directive lays down minimum requirements, thus giving Member States the option of maintaining or adopting more stringent provisions for the protection of workers, in particular the fixing of lower exposure limit values. The implementation of this Directive must not serve to justify any deterioration in the situation which already prevails in each Member State.
- (7) A system of protection against the hazards of optical radiation should limit itself to a definition, free of excessive detail, of the objectives to be attained, the principles to be observed and the basic values to be applied, in order to enable Member States to apply the minimum requirements in an equivalent manner.
- (8) The level of exposure to optical radiation can be more effectively reduced by incorporating preventive measures into the design of workstations and by selecting work equipment, procedures and methods so as to give priority to reducing the risks at source. Provisions relating to work equipment and methods thus contribute to the protection of the workers involved. In accordance with the general principles of prevention as laid down in Article 6(2) of Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work⁽¹⁾, collective protection measures have priority over individual protection measures.
- (9) Employers should make adjustments in the light of technical progress and scientific knowledge regarding risks related to exposure to optical radiation, with a view to improving the safety and health protection of workers.
- (10) Since this Directive is an individual directive within the meaning of Article 16(1) of Directive 89/391/EEC, that Directive applies to the exposure of workers to optical radiation, without prejudice to more stringent and/or specific provisions contained in this Directive.
- (11) This Directive constitutes a practical step towards creating the social dimension of the internal market.
- (12) A complementary approach that both promotes the principle of better regulation and ensures a high level of protection can be achieved where the products made by the manufacturers of optical radiation sources and associated equipment comply with harmonised standards devised to protect the health and safety of users from the hazards inherent in such products; accordingly, it is not necessary for employers to repeat the measurements or calculations already undertaken by the manufacturer to determine compliance with the essential safety requirements of such equipment as specified in the applicable Community Directives, provided that the equipment has been properly and regularly maintained.
- (13) The measures necessary for the implementation of this Directive should be adopted in accordance with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission⁽²⁾.
- (14) Adherence to the exposure limit values should provide a high level of protection as regards the health effects that may result from exposure to optical radiation.
- (15) The Commission should draw up a practical guide to help employers, in particular managers of SMEs, better to understand the technical provisions of this Directive. The Commission should strive to complete this guide as quickly as possible so as to facilitate adoption by the Member States of the measures necessary to implement this Directive.
- (16) In accordance with paragraph 34 of the Interinstitutional Agreement on better law-making⁽³⁾, Member States are encouraged to draw up, for themselves and in the interests of the Community, their own tables illustrating, as far as possible, the correlation between this Directive and the transposition measures, and to make them public.

HAVE ADOPTED THIS DIRECTIVE:

SECTION I

GENERAL PROVISIONS

Article 1

Aim and scope

1. This Directive, which is the 19th individual Directive within the meaning of Article 16(l) of Directive 89/391/EEC, lays down minimum requirements for the protection of workers from risks to their health and safety arising or likely to arise from exposure to artificial optical radiation during their work.
2. This Directive refers to the risk to the health and safety of workers due to adverse effects caused by exposure to artificial optical radiation to the eyes and to the skin.

⁽¹⁾ OJ L 183, 29.6.1989, p. 1. Directive as amended by Regulation (EC) No 1882/2003 of the European Parliament and of the Council (OJ L 284, 31.10.2003, p. 1).

⁽²⁾ OJ L 184, 17.7.1999, p. 23.

⁽³⁾ OJ C 321, 31.12.2003, p. 1.

3. Directive 89/391/EEC shall apply fully to the whole area referred to in paragraph 1, without prejudice to more stringent and/or more specific provisions contained in this Directive.

Article 2

Definitions

For the purposes of this Directive, the following definitions shall apply:

- (a) optical radiation: any electromagnetic radiation in the wavelength range between 100 nm and 1 mm. The spectrum of optical radiation is divided into ultraviolet radiation, visible radiation and infrared radiation:
 - (i) ultraviolet radiation: optical radiation of wavelength range between 100 nm and 400 nm. The ultraviolet region is divided into UVA (315-400 nm), UVB (280-315 nm) and UVC (100-280 nm);
 - (ii) visible radiation: optical radiation of wavelength range between 380 nm and 780 nm;
 - (iii) infrared radiation: optical radiation of wavelength range between 780 nm and 1 mm. The infrared region is divided into IRA (780-1 400 nm), IRB (1 400-3 000 nm) and IRC (3 000 nm-1 mm);
- (b) laser (light amplification by stimulated emission of radiation): any device which can be made to produce or amplify electromagnetic radiation in the optical radiation wavelength range primarily by the process of controlled stimulated emission;
- (c) laser radiation: optical radiation from a laser;
- (d) non-coherent radiation: any optical radiation other than laser radiation;
- (e) exposure limit values: limits on exposure to optical radiation which are based directly on established health effects and biological considerations. Compliance with these limits will ensure that workers exposed to artificial sources of optical radiation are protected against all known adverse health effects;
- (f) irradiance (E) or power density: the radiant power incident per unit area upon a surface expressed in watts per square metre (W m^{-2});

- (g) radiant exposure (H): the time integral of the irradiance, expressed in joules per square metre (J m^{-2});
- (h) radiance (L): the radiant flux or power output per unit solid angle per unit area, expressed in watts per square metre per steradian ($\text{W m}^{-2} \text{sr}^{-1}$);
- (i) level: the combination of irradiance, radiant exposure and radiance to which a worker is exposed.

Article 3

Exposure limit values

1. The exposure limit values for non-coherent radiation, other than that emitted by natural sources of optical radiation, are as set out in Annex I.
2. The exposure limit values for laser radiation are as set out in Annex II.

SECTION II

OBLIGATIONS OF EMPLOYERS

Article 4

Determination of exposure and assessment of risks

1. In carrying out the obligations laid down in Articles 6(3) and 9(1) of Directive 89/391/EEC, the employer, in the case of workers exposed to artificial sources of optical radiation, shall assess and, if necessary, measure and/or calculate the levels of exposure to optical radiation to which workers are likely to be exposed so that the measures needed to restrict exposure to the applicable limits can be identified and put into effect. The methodology applied in assessment, measurement and/or calculations shall follow the standards of the International Electrotechnical Commission (IEC) in respect of laser radiation and the recommendations of the International Commission on Illumination (CIE) and the European Committee for Standardisation (CEN) in respect of non-coherent radiation. In exposure situations which are not covered by these standards and recommendations, and until appropriate EU standards or recommendations become available, assessment, measurement and/or calculations shall be carried out using available national or international science-based guidelines. In both exposure situations, the assessment may take account of data provided by the manufacturers of the equipment when it is covered by relevant Community Directives.

2. The assessment, measurement and/or calculations referred to in paragraph 1 shall be planned and carried out by competent services or persons at suitable intervals, taking particular account of the provisions of Articles 7 and 11 of Directive 89/391/EEC concerning the necessary competent services or persons and the consultation and participation of workers. The data obtained from the assessment, including those obtained from the measurement and/or calculation of the level of exposure referred to in paragraph 1 shall be preserved in a suitable form so as to permit their consultation at a later stage.

3. Pursuant to Article 6(3) of Directive 89/391/EEC, the employer shall give particular attention, when carrying out the risk assessment, to the following:

- (a) the level, wavelength range and duration of exposure to artificial sources of optical radiation;
- (b) the exposure limit values referred to in Article 3 of this Directive;
- (c) any effects concerning the health and safety of workers belonging to particularly sensitive risk groups;
- (d) any possible effects on workers' health and safety resulting from workplace interactions between optical radiation and photosensitising chemical substances;
- (e) any indirect effects such as temporary blinding, explosion or fire;
- (f) the existence of replacement equipment designed to reduce the levels of exposure to artificial optical radiation;
- (g) appropriate information obtained from health surveillance, including published information, as far as possible;
- (h) multiple sources of exposure to artificial optical radiation;
- (i) a classification applied to a laser as defined in accordance with the relevant IEC standard and, in relation to any artificial source likely to cause damage similar to that of a laser of class 3B or 4, any similar classification;
- (j) information provided by the manufacturers of optical radiation sources and associated work equipment in accordance with the relevant Community Directives.

4. The employer shall be in possession of an assessment of the risk in accordance with Article 9(1)(a) of Directive 89/391/EEC and shall identify which measures must be taken in accordance with Articles 5 and 6 of this Directive. The risk assessment shall be recorded on a suitable medium, according to national law and practice; it may include a justification by the employer that the nature and extent of the risks related to optical radiation make a further, detailed risk assessment unnecessary. The risk assessment shall be updated on a regular basis, particularly if there have been significant changes which could render it out of date, or if the results of health surveillance show it to be necessary.

Article 5

Provisions aimed at avoiding or reducing risks

1. Taking account of technical progress and of the availability of measures to control the risk at source, the risks arising from exposure to artificial optical radiation shall be eliminated or reduced to a minimum.

The reduction of risks arising from exposure to artificial optical radiation shall be based on the general principles of prevention set out in Directive 89/391/EEC.

2. Where the risk assessment carried out in accordance with Article 4(1) for workers exposed to artificial sources of optical radiation indicates any possibility that the exposure limit values may be exceeded, the employer shall devise and implement an action plan comprising technical and/or organisational measures designed to prevent the exposure exceeding the limit values, taking into account in particular:

- (a) other working methods that reduce the risk from optical radiation;
- (b) the choice of equipment emitting less optical radiation, taking account of the work to be done;
- (c) technical measures to reduce the emission of optical radiation including, where necessary, the use of interlocks, shielding or similar health protection mechanisms;
- (d) appropriate maintenance programmes for work equipment, workplaces and workstation systems;
- (e) the design and layout of workplaces and workstations;
- (f) limitation of the duration and level of the exposure;
- (g) the availability of appropriate personal protective equipment;
- (h) the instructions of the manufacturer of the equipment where it is covered by relevant Community Directives.

3. On the basis of the risk assessment carried out in accordance with Article 4, workplaces where workers could be exposed to levels of optical radiation from artificial sources exceeding the exposure limit values shall be indicated by appropriate signs in accordance with Council Directive 92/58/EEC of 24 June 1992 on the minimum requirements for the provision of safety and/or health signs at work (9th individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC) ⁽¹⁾. The areas in question shall be identified, and access to them limited where this is technically possible and where there is a risk that the exposure limit values could be exceeded.

4. Workers shall not be exposed above the exposure limit values. In any event, if, despite the measures taken by the employer to comply with this Directive in respect of artificial sources of optical radiation, the exposure limit values are exceeded, the employer shall take immediate action to reduce exposure below the exposure limit values. The employer shall identify the reasons why the exposure limit values have been exceeded and shall adapt the protection and prevention measures accordingly in order to prevent them being exceeded again.

5. Pursuant to Article 15 of Directive 89/391/EEC, the employer shall adapt the measures referred to in this Article to the requirements of workers belonging to particularly sensitive risk groups.

Article 6

Worker information and training

Without prejudice to Articles 10 and 12 of Directive 89/391/EEC, the employer shall ensure that workers who are exposed to risks from artificial optical radiation at work and/or their representatives receive any necessary information and training relating to the outcome of the risk assessment provided for in Article 4 of this Directive, concerning in particular:

- (a) measures taken to implement this Directive;
- (b) the exposure limit values and the associated potential risks;
- (c) the results of the assessment, measurement and/or calculations of the levels of exposure to artificial optical radiation carried out in accordance with Article 4 of this Directive together with an explanation of their significance and potential risks;
- (d) how to detect adverse health effects of exposure and how to report them;
- (e) the circumstances in which workers are entitled to health surveillance;

- (f) safe working practices to minimise risks from exposure;
- (g) proper use of appropriate personal protective equipment.

Article 7

Consultation and participation of workers

Consultation and participation of workers and/or of their representatives shall take place in accordance with Article 11 of Directive 89/391/EEC on the matters covered by this Directive.

SECTION III

MISCELLANEOUS PROVISIONS

Article 8

Health surveillance

1. With the objectives of the prevention and timely detection of any adverse health effects, as well as the prevention of any long-term health risks and any risk of chronic diseases, resulting from exposure to optical radiation, Member States shall adopt provisions to ensure appropriate health surveillance of workers pursuant to Article 14 of Directive 89/391/EEC.

2. Member States shall ensure that health surveillance is carried out by a doctor, an occupational health professional or a medical authority responsible for health surveillance in accordance with national law and practice.

3. Member States shall establish arrangements to ensure that, for each worker who undergoes health surveillance in accordance with paragraph 1, individual health records are made and kept up to date. Health records shall contain a summary of the results of the health surveillance carried out. They shall be kept in a suitable form so as to permit consultation at a later date, taking into account any confidentiality. Copies of the appropriate records shall be supplied to the competent authority on request, taking into account any confidentiality. The employer shall take appropriate measures to ensure that the doctor, the occupational health professional or the medical authority responsible for the health surveillance, as determined by Member States as appropriate, has access to the results of the risk assessment referred to in Article 4 where such results may be relevant to the health surveillance. Individual workers shall, at their request, have access to their own personal health records.

⁽¹⁾ OJ L 245, 26.8.1992, p. 23.

4. In any event, where exposure above the limit values is detected, a medical examination shall be made available to the worker(s) concerned in accordance with national law and practice. This medical examination shall also be carried out where, as a result of health surveillance, a worker is found to have an identifiable disease or adverse health effect which is considered by a doctor or occupational health professional to be the result of exposure to artificial optical radiation at work. In both cases, when limit values are exceeded or adverse health effects (including diseases) are identified:

- (a) the worker shall be informed by the doctor or other suitably qualified person of the result which relates to him personally. He shall, in particular, receive information and advice regarding any health surveillance which he should undergo following the end of exposure;
- (b) the employer shall be informed of any significant findings of the health surveillance, taking into account any medical confidentiality;
- (c) the employer shall:
 - review the risk assessment carried out pursuant to Article 4,
 - review the measures provided for to eliminate or reduce risks pursuant to Article 5,
 - take into account the advice of the occupational health professional or other suitably qualified person or the competent authority in implementing any measure required to eliminate or reduce risk in accordance with Article 5, and
 - arrange continued health surveillance and provide for a review of the health status of any other worker who has been similarly exposed. In such cases, the competent doctor or occupational health professional or the competent authority may propose that the exposed persons undergo a medical examination.

Article 9

Penalties

Member States shall provide for adequate penalties to be applicable in the event of infringement of the national legislation adopted pursuant to this Directive. These penalties must be effective, proportionate and dissuasive.

Article 10

Technical amendments

1. Any modification of the exposure limit values set out in the Annexes shall be adopted by the European Parliament and the Council in accordance with the procedure laid down in Article 137(2) of the Treaty.

2. Amendments to the Annexes of a strictly technical nature in line with:

- (a) the adoption of Directives in the field of technical harmonisation and standardisation with regard to the design, building, manufacture or construction of work equipment and/or workplaces;
- (b) technical progress, changes in the most relevant harmonised European standards or international specifications, and new scientific findings concerning occupational exposure to optical radiation,

shall be adopted in accordance with the procedure laid down in Article 11(2).

Article 11

Committee

1. The Commission shall be assisted by the Committee referred to in Article 17 of Directive 89/391/EEC.

2. Where reference is made to this paragraph, Articles 5 and 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.

The period laid down in Article 5(6) of Decision 1999/468/EC shall be set at three months.

3. The Committee shall adopt its rules of procedure.

SECTION IV

FINAL PROVISIONS

Article 12

Reports

Every five years Member States shall provide the Commission with a report on the practical implementation of this Directive, indicating the points of view of the social partners.

Every five years the Commission shall inform the European Parliament, the Council, the European Economic and Social Committee and the Advisory Committee on Safety and Health at Work of the content of these reports, of its assessment of these reports, of developments in the field in question and of any action that may be warranted in the light of new scientific knowledge.

*Article 13***Practical guide**

In order to facilitate implementation of this Directive the Commission shall draw up a practical guide to the provisions of Articles 4 and 5 and Annexes I and II.

*Article 14***Transposition**

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 27 April 2010. They shall forthwith inform the Commission thereof.

When Member States adopt these measures, they shall contain a reference to this Directive or shall be accompanied by such reference on the occasion of their official publication. The methods of making such reference shall be laid down by Member States.

2. Member States shall communicate to the Commission the text of the provisions of national law which they adopt or have already adopted in the field covered by this Directive.

*Article 15***Entry into force**

This Directive shall enter into force on the day of its publication in the *Official Journal of the European Union*.

*Article 16***Addressees**

This Directive is addressed to the Member States.

Done at Strasbourg, 5 April 2006.

For the European Parliament

The President

J. BORRELL FONTELLES

For the Council

The President

H. WINKLER

ANNEX I

Non-coherent optical radiation

The biophysically relevant exposure values to optical radiation can be determined with the formulae below. The formulae to be used depend on the range of radiation emitted by the source and the results should be compared with the corresponding exposure limit values indicated in Table 1.1. More than one exposure value and corresponding exposure limit can be relevant for a given source of optical radiation.

Numbering (a) to (o) refers to corresponding rows of Table 1.1.

$$(a) \quad H_{\text{eff}} = \int_0^t \int_{\lambda=180 \text{ nm}}^{\lambda=400 \text{ nm}} E_{\lambda}(\lambda, t) \cdot S(\lambda) \cdot d\lambda \cdot dt \quad (H_{\text{eff}} \text{ is only relevant in the range 180 to 400 nm})$$

$$(b) \quad H_{\text{UVA}} = \int_0^t \int_{\lambda=315 \text{ nm}}^{\lambda=400 \text{ nm}} E_{\lambda}(\lambda, t) \cdot d\lambda \cdot dt \quad (H_{\text{UVA}} \text{ is only relevant in the range 315 to 400 nm})$$

$$(c), (d) \quad L_B = \int_{\lambda=300 \text{ nm}}^{\lambda=700 \text{ nm}} L_{\lambda}(\lambda) \cdot B(\lambda) \cdot d\lambda \quad (L_B \text{ is only relevant in the range 300 to 700 nm})$$

$$(e), (f) \quad E_B = \int_{\lambda=300 \text{ nm}}^{\lambda=700 \text{ nm}} E_{\lambda}(\lambda) \cdot B(\lambda) \cdot d\lambda \quad (E_B \text{ is only relevant in the range 300 to 700 nm})$$

$$(g) \text{ to } (l) \quad L_R = \int_{\lambda_1}^{\lambda_2} L_{\lambda}(\lambda) \cdot R(\lambda) \cdot d\lambda \quad (\text{See Table 1.1 for appropriate values of } \lambda_1 \text{ and } \lambda_2)$$

$$(m), (n) \quad E_{\text{IR}} = \int_{\lambda=780 \text{ nm}}^{\lambda=3000 \text{ nm}} E_{\lambda}(\lambda) \cdot d\lambda \quad (E_{\text{IR}} \text{ is only relevant in the range 780 to 3 000 nm})$$

$$(o) \quad H_{\text{skin}} = \int_0^t \int_{\lambda=380 \text{ nm}}^{\lambda=3000 \text{ nm}} E_{\lambda}(\lambda, t) \cdot d\lambda \cdot dt \quad (H_{\text{skin}} \text{ is only relevant in the range 380 to 3 000 nm})$$

For the purposes of this Directive, the formulae above can be replaced by the following expressions and the use of discrete values as set out in the following tables:

$$(a) \quad E_{\text{eff}} = \sum_{\lambda=180 \text{ nm}}^{\lambda=400 \text{ nm}} E_{\lambda} \cdot S(\lambda) \cdot \Delta\lambda \quad \text{and } H_{\text{eff}} = E_{\text{eff}} \cdot \Delta t$$

$$(b) \quad E_{\text{UVA}} = \sum_{\lambda=315 \text{ nm}}^{\lambda=400 \text{ nm}} E_{\lambda} \cdot \Delta\lambda \quad \text{and } H_{\text{UVA}} = E_{\text{UVA}} \cdot \Delta t$$

$$(c), (d) \quad L_B = \sum_{\lambda=300 \text{ nm}}^{\lambda=700 \text{ nm}} L_{\lambda} \cdot B(\lambda) \cdot \Delta\lambda$$

$$(e), (f) \quad E_B = \sum_{\lambda=300 \text{ nm}}^{\lambda=700 \text{ nm}} E_{\lambda} \cdot B(\lambda) \cdot \Delta\lambda$$

$$(g) \text{ to } (l) \quad L_R = \sum_{\lambda_1}^{\lambda_2} L_{\lambda} \cdot R(\lambda) \cdot \Delta\lambda \quad (\text{See Table 1.1 for appropriate values of } \lambda_1 \text{ and } \lambda_2)$$

$$(m), (n) \quad E_{\text{IR}} = \sum_{\lambda=780 \text{ nm}}^{\lambda=3000 \text{ nm}} E_{\lambda} \cdot \Delta\lambda$$

$$(o) \quad E_{\text{skin}} = \sum_{\lambda=380 \text{ nm}}^{\lambda=3000 \text{ nm}} E_{\lambda} \cdot \Delta\lambda \quad \text{and} \quad H_{\text{skin}} = E_{\text{skin}} \cdot \Delta t$$

Notes:

- $E_{\lambda}(\lambda, t)$, E_{λ} *spectral irradiance or spectral power density*: the radiant power incident per unit area upon a surface, expressed in watts per square metre per nanometre [$\text{W m}^{-2} \text{nm}^{-1}$]; values of $E_{\lambda}(\lambda, t)$ and E_{λ} come from measurements or may be provided by the manufacturer of the equipment;
- E_{eff} *effective irradiance (UV range)*: calculated irradiance within the UV wavelength range 180 to 400 nm spectrally weighted by $S(\lambda)$, expressed in watts per square metre [W m^{-2}];
- H *radiant exposure*: the time integral of the irradiance, expressed in joules per square metre [J m^{-2}];
- H_{eff} *effective radiant exposure*: radiant exposure spectrally weighted by $S(\lambda)$, expressed in joules per square metre [J m^{-2}];
- E_{UVA} *total irradiance (UVA)*: calculated irradiance within the UVA wavelength range 315 to 400 nm, expressed in watts per square metre [W m^{-2}];
- H_{UVA} *radiant exposure*: the time and wavelength integral or sum of the irradiance within the UVA wavelength range 315 to 400 nm, expressed in joules per square metre [J m^{-2}];
- $S(\lambda)$ *spectral weighting* taking into account the wavelength dependence of the health effects of UV radiation on eye and skin, (Table 1.2) [dimensionless];
- $t, \Delta t$ *time, duration of the exposure*, expressed in seconds [s];
- λ *wavelength*, expressed in nanometres [nm];
- $\Delta\lambda$ *bandwidth*, expressed in nanometres [nm], of the calculation or measurement intervals;
- $L_{\lambda}(\lambda)$, L_{λ} *spectral radiance of the source* expressed in watts per square metre per steradian per nanometre [$\text{W m}^{-2} \text{sr}^{-1} \text{nm}^{-1}$];
- $R(\lambda)$ *spectral weighting* taking into account the wavelength dependence of the thermal injury caused to the eye by visible and IRA radiation (Table 1.3) [dimensionless];
- L_{R} *effective radiance (thermal injury)*: calculated radiance spectrally weighted by $R(\lambda)$ expressed in watts per square metre per steradian [$\text{W m}^{-2} \text{sr}^{-1}$];
- $B(\lambda)$ *spectral weighting* taking into account the wavelength dependence of the photochemical injury caused to the eye by blue light radiation (Table 1.3) [dimensionless];
- L_{B} *effective radiance (blue light)*: calculated radiance spectrally weighted by $B(\lambda)$, expressed in watts per square metre per steradian [$\text{W m}^{-2} \text{sr}^{-1}$];
- E_{B} *effective irradiance (blue light)*: calculated irradiance spectrally weighted by $B(\lambda)$ expressed in watts per square metre [W m^{-2}];
- E_{IR} *total irradiance (thermal injury)*: calculated irradiance within the infrared wavelength range 780 nm to 3 000 nm expressed in watts per square metre [W m^{-2}];
- E_{skin} *total irradiance (visible, IRA and IRB)*: calculated irradiance within the visible and infrared wavelength range 380 nm to 3 000 nm, expressed in watts per square metre [W m^{-2}];
- H_{skin} *radiant exposure*: the time and wavelength integral or sum of the irradiance within the visible and infrared wavelength range 380 to 3 000 nm, expressed in joules per square metre [J m^{-2}];
- α *angular subtense*: the angle subtended by an apparent source, as viewed at a point in space, expressed in milliradians (mrad). Apparent source is the real or virtual object that forms the smallest possible retinal image.

Table 1.1
Exposure limit values for non-coherent optical radiation

Index	Wavelength nm	Exposure limit value	Units	Comment	Part of the body	Hazard
a.	180-400 (UVA, UVB and UVC)	$H_{\text{eff}} = 30$ Daily value 8 hours	[J m ⁻²]		eye cornea conjunctiva lens skin	photokeratitis conjunctivitis cataractogenesis erythema elastosis skin cancer
b.	315-400 (UVA)	$H_{\text{UVA}} = 10^4$ Daily value 8 hours	[J m ⁻²]		eye lens	cataractogenesis
c.	300-700 (Blue light) see note 1	$L_B = \frac{10^6}{t}$ for $t \leq 10\,000$ s	L_B : [W m ⁻² sr ⁻¹] t: [seconds]	for $\alpha \geq 11$ mrad		
d.	300-700 (Blue light) see note 1	$L_B = 100$ for $t > 10\,000$ s	[W m ⁻² sr ⁻¹]			
e.	300-700 (Blue light) see note 1	$E_B = \frac{100}{t}$ for $t \leq 10\,000$ s	E_B : [W m ⁻²] t: [seconds]	for $\alpha < 11$ mrad see note 2	eye retina	photoreinitis
f.	300-700 (Blue light) see note 1	$E_B = 0,01$ t > 10 000 s	[W m ⁻²]			

Index	Wavelength nm	Exposure limit value	Units	Comment	Part of the body	Hazard
g.	380-1 400 (Visible and IRA)	$L_R = \frac{2,8 \cdot 10^7}{C_a}$ for $t > 10$ s	[W m ⁻² sr ⁻¹]	$C_a = 1,7$ for $\alpha \leq 1,7$ mrad $C_a = \alpha$ for $1,7 \leq \alpha \leq 100$ mrad $C_a = 100$ for $\alpha > 100$ mrad $\lambda_1 = 380; \lambda_2 = 1 400$	eye retina	retinal burn
			$L_R: [W m^{-2} sr^{-1}]$ t: [seconds]			
			[W m ⁻² sr ⁻¹]			
h.	380-1 400 (Visible and IRA)	$L_R = \frac{5 \cdot 10^7}{C_a t^{0,25}}$ for $10 \mu s \leq t \leq 10$ s				
i.	380-1 400 (Visible and IRA)	$L_R = \frac{8,89 \cdot 10^8}{C_a}$ for $t < 10 \mu s$				
j.	780-1 400 (IRA)	$L_R = \frac{6 \cdot 10^6}{C_a}$ for $t > 10$ s	[W m ⁻² sr ⁻¹]	$C_a = 11$ for $\alpha \leq 11$ mrad $C_a = \alpha$ for $11 \leq \alpha \leq 100$ mrad $C_a = 100$ for $\alpha > 100$ mrad (measurement field-of-view: 11 mrad) $\lambda_1 = 780; \lambda_2 = 1 400$	eye retina	retinal burn
			$L_R: [W m^{-2} sr^{-1}]$ t: [seconds]			
			[W m ⁻² sr ⁻¹]			
k.	780-1 400 (IRA)	$L_R = \frac{5 \cdot 10^7}{C_a t^{0,25}}$ for $10 \mu s \leq t \leq 10$ s				
l.	780-1 400 (IRA)	$L_R = \frac{8,89 \cdot 10^8}{C_a}$ for $t < 10 \mu s$				
m.	780-3 000 (IRA and IRB)	$E_{IR} = 18 000 t^{-0,75}$ for $t \leq 1 000$ s	E: [W m ⁻²] t: [seconds]		eye cornea lens	corneal burn cataractogenesis
n.	780-3 000 (IRA and IRB)	$E_{IR} = 100$ for $t > 1 000$ s	[W m ⁻²]			

Index	Wavelength nm	Exposure limit value	Units	Comment	Part of the body	Hazard
o.	380-3 000 (Visible, IRA and IRB)	$H_{skin} = 20\,000\,t^{0.25}$ for $t < 10\,s$	H: $[J\,m^{-2}]$ t: [seconds]		skin	burn

Note 1: The range of 300 to 700 nm covers parts of UVB, all UVA and most of visible radiation; however, the associated hazard is commonly referred to as 'blue light' hazard. Blue light strictly speaking covers only the range of approximately 400 to 490 nm.

Note 2: For steady fixation of very small sources with an angular subtense $< 11\,mrad$, L_B can be converted to E_B . This normally applies only for ophthalmic instruments or a stabilized eye during anaesthesia. The maximum 'stare time' is found by: $t_{max} = 100/E_B$ with E_B expressed in $W\,m^{-2}$. Due to eye movements during normal visual tasks this does not exceed 100 s.

Table 1.2

S (λ) [dimensionless], 180 nm to 400 nm

λ in nm	S (λ)	λ in nm	S (λ)	λ in nm	S (λ)	λ in nm	S (λ)	λ in nm	S (λ)
180	0,0120	228	0,1737	276	0,9434	324	0,000520	372	0,000086
181	0,0126	229	0,1819	277	0,9272	325	0,000500	373	0,000083
182	0,0132	230	0,1900	278	0,9112	326	0,000479	374	0,000080
183	0,0138	231	0,1995	279	0,8954	327	0,000459	375	0,000077
184	0,0144	232	0,2089	280	0,8800	328	0,000440	376	0,000074
185	0,0151	233	0,2188	281	0,8568	329	0,000425	377	0,000072
186	0,0158	234	0,2292	282	0,8342	330	0,000410	378	0,000069
187	0,0166	235	0,2400	283	0,8122	331	0,000396	379	0,000066
188	0,0173	236	0,2510	284	0,7908	332	0,000383	380	0,000064
189	0,0181	237	0,2624	285	0,7700	333	0,000370	381	0,000062
190	0,0190	238	0,2744	286	0,7420	334	0,000355	382	0,000059
191	0,0199	239	0,2869	287	0,7151	335	0,000340	383	0,000057
192	0,0208	240	0,3000	288	0,6891	336	0,000327	384	0,000055
193	0,0218	241	0,3111	289	0,6641	337	0,000315	385	0,000053
194	0,0228	242	0,3227	290	0,6400	338	0,000303	386	0,000051
195	0,0239	243	0,3347	291	0,6186	339	0,000291	387	0,000049
196	0,0250	244	0,3471	292	0,5980	340	0,000280	388	0,000047
197	0,0262	245	0,3600	293	0,5780	341	0,000271	389	0,000046
198	0,0274	246	0,3730	294	0,5587	342	0,000263	390	0,000044
199	0,0287	247	0,3865	295	0,5400	343	0,000255	391	0,000042
200	0,0300	248	0,4005	296	0,4984	344	0,000248	392	0,000041
201	0,0334	249	0,4150	297	0,4600	345	0,000240	393	0,000039
202	0,0371	250	0,4300	298	0,3989	346	0,000231	394	0,000037
203	0,0412	251	0,4465	299	0,3459	347	0,000223	395	0,000036
204	0,0459	252	0,4637	300	0,3000	348	0,000215	396	0,000035
205	0,0510	253	0,4815	301	0,2210	349	0,000207	397	0,000033
206	0,0551	254	0,5000	302	0,1629	350	0,000200	398	0,000032
207	0,0595	255	0,5200	303	0,1200	351	0,000191	399	0,000031
208	0,0643	256	0,5437	304	0,0849	352	0,000183	400	0,000030
209	0,0694	257	0,5685	305	0,0600	353	0,000175		
210	0,0750	258	0,5945	306	0,0454	354	0,000167		
211	0,0786	259	0,6216	307	0,0344	355	0,000160		
212	0,0824	260	0,6500	308	0,0260	356	0,000153		
213	0,0864	261	0,6792	309	0,0197	357	0,000147		
214	0,0906	262	0,7098	310	0,0150	358	0,000141		
215	0,0950	263	0,7417	311	0,0111	359	0,000136		
216	0,0995	264	0,7751	312	0,0081	360	0,000130		
217	0,1043	265	0,8100	313	0,0060	361	0,000126		
218	0,1093	266	0,8449	314	0,0042	362	0,000122		
219	0,1145	267	0,8812	315	0,0030	363	0,000118		
220	0,1200	268	0,9192	316	0,0024	364	0,000114		
221	0,1257	269	0,9587	317	0,0020	365	0,000110		
222	0,1316	270	1,0000	318	0,0016	366	0,000106		
223	0,1378	271	0,9919	319	0,0012	367	0,000103		
224	0,1444	272	0,9838	320	0,0010	368	0,000099		
225	0,1500	273	0,9758	321	0,000819	369	0,000096		
226	0,1583	274	0,9679	322	0,000670	370	0,000093		
227	0,1658	275	0,9600	323	0,000540	371	0,000090		

Table 1.3

B (λ), R (λ) [dimensionless], 380 nm to 1 400 nm

λ in nm	B (λ)	R (λ)
$300 \leq \lambda < 380$	0,01	—
380	0,01	0,1
385	0,013	0,13
390	0,025	0,25
395	0,05	0,5
400	0,1	1
405	0,2	2
410	0,4	4
415	0,8	8
420	0,9	9
425	0,95	9,5
430	0,98	9,8
435	1	10
440	1	10
445	0,97	9,7
450	0,94	9,4
455	0,9	9
460	0,8	8
465	0,7	7
470	0,62	6,2
475	0,55	5,5
480	0,45	4,5
485	0,32	3,2
490	0,22	2,2
495	0,16	1,6
500	0,1	1
$500 < \lambda \leq 600$	$10^{0,02 \cdot (450 - \lambda)}$	1
$600 < \lambda \leq 700$	0,001	1
$700 < \lambda \leq 1\,050$	—	$10^{0,002 \cdot (700 - \lambda)}$
$1\,050 < \lambda \leq 1\,150$	—	0,2
$1\,150 < \lambda \leq 1\,200$	—	$0,2 \cdot 10^{0,02 \cdot (1\,150 - \lambda)}$
$1\,200 < \lambda \leq 1\,400$	—	0,02

ANNEX II

Laser optical radiation

The biophysically relevant exposure values to optical radiation can be determined with the formulae below. The formulae to be used depend on the wavelength and duration of radiation emitted by the source and the results should be compared with the corresponding exposure limit values indicated in the Tables 2.2 to 2.4. More than one exposure value and corresponding exposure limit can be relevant for a given source of laser optical radiation.

Coefficients used as calculation tools within the Tables 2.2 to 2.4 are listed in Table 2.5 and corrections for repetitive exposure are listed in Table 2.6.

$$E = \frac{dP}{dA} \text{ [W m}^{-2}\text{]}$$

$$H = \int_0^t E(t) \cdot dt \text{ [J m}^{-2}\text{]}$$

Notes:

dP power expressed in watt [W];

dA surface expressed in square metres [m²];

E (t), E irradiance or power density: the radiant power incident per unit area upon a surface, generally expressed in watts per square metre [W m⁻²]. Values of E(t), E come from measurements or may be provided by the manufacturer of the equipment;

H radiant exposure: the time integral of the irradiance, expressed in joules per square metre [J m⁻²];

t time, duration of the exposure, expressed in seconds [s];

λ wavelength, expressed in nanometres [nm];

γ limiting cone angle of measurement field-of-view expressed in milliradians [mrad];

γ_m measurement field of view expressed in milliradians [mrad];

α angular subtense of a source expressed in milliradians [mrad];

limiting aperture: the circular area over which irradiance and radiant exposure are averaged;

G integrated radiance: the integral of the radiance over a given exposure time expressed as radiant energy per unit area of a radiating surface per unit solid angle of emission, in joules per square metre per steradian [J m⁻² sr⁻¹].

Table 2.1

Radiation hazards

Wavelength [nm] λ	Radiation range	Affected organ	Hazard	Exposure limit value table
180 to 400	UV	eye	photochemical damage and thermal damage	2.2, 2.3
180 to 400	UV	skin	erythema	2.4
400 to 700	visible	eye	retinal damage	2.2
400 to 600	visible	eye	photochemical damage	2.3
400 to 700	visible	skin	thermal damage	2.4
700 to 1 400	IRA	eye	thermal damage	2.2, 2.3
700 to 1 400	IRA	skin	thermal damage	2.4
1 400 to 2 600	IRB	eye	thermal damage	2.2
2 600 to 10^6	IRC	eye	thermal damage	2.2
1 400 to 10^6	IRB, IRC	eye	thermal damage	2.3
1 400 to 10^6	IRB, IRC	skin	thermal damage	2.4

Table 2.2
Exposure limit values for laser exposure to the eye — Short exposure duration < 10 s

Wavelength ^a [nm]		Aperture	Duration [s]					
			10 ⁻¹³ - 10 ⁻¹¹	10 ⁻¹¹ - 10 ⁻⁹	10 ⁻⁹ - 10 ⁻⁷	10 ⁻⁷ - 1,8 · 10 ⁻⁵	1,8 · 10 ⁻⁵ - 5 · 10 ⁻³	10 ⁻³ - 10 ¹
UVC	180 - 280	1 mm for t<0,3 s; 1,5 · t ^{0,375} for 0,3<t<10 s	E = 3 · 10 ¹⁰ · [W m ⁻²] See note ^c	H = 30 [J m ⁻²]				
	280 - 302			H = 40 [J m ⁻²];	if t < 2,6 · 10 ⁻⁹ then H = 5,6 · 10 ³ t ^{0,25} [J m ⁻²] see note ^d			
	303			H = 60 [J m ⁻²];	if t < 1,3 · 10 ⁻⁸ then H = 5,6 · 10 ³ t ^{0,25} [J m ⁻²] see note ^d			
	304			H = 100 [J m ⁻²];	if t < 1,0 · 10 ⁻⁷ then H = 5,6 · 10 ³ t ^{0,25} [J m ⁻²] see note ^d			
	305			H = 160 [J m ⁻²];	if t < 6,7 · 10 ⁻⁷ then H = 5,6 · 10 ³ t ^{0,25} [J m ⁻²] see note ^d			
	306			H = 250 [J m ⁻²];	if t < 4,0 · 10 ⁻⁶ then H = 5,6 · 10 ³ t ^{0,25} [J m ⁻²] see note ^d			
307	H = 400 [J m ⁻²];			if t < 2,6 · 10 ⁻⁵ then H = 5,6 · 10 ³ t ^{0,25} [J m ⁻²] see note ^d				
308	H = 630 [J m ⁻²];			if t < 1,6 · 10 ⁻⁴ then H = 5,6 · 10 ³ t ^{0,25} [J m ⁻²] see note ^d				
309	H = 10 ³ [J m ⁻²];			if t < 1,0 · 10 ⁻³ then H = 5,6 · 10 ³ t ^{0,25} [J m ⁻²] see note ^d				
310	H = 1,6 · 10 ³ [J m ⁻²];			if t < 6,7 · 10 ⁻³ then H = 5,6 · 10 ³ t ^{0,25} [J m ⁻²] see note ^d				
UVB	311			H = 2,5 · 10 ³ [J m ⁻²];	if t < 4,0 · 10 ⁻² then H = 5,6 · 10 ³ t ^{0,25} [J m ⁻²] see note ^d			
	312	H = 4,0 · 10 ³ [J m ⁻²];	if t < 2,6 · 10 ⁻¹ then H = 5,6 · 10 ³ t ^{0,25} [J m ⁻²] see note ^d					
	313	H = 6,3 · 10 ³ [J m ⁻²];	if t < 1,6 · 10 ⁰ then H = 5,6 · 10 ³ t ^{0,25} [J m ⁻²] see note ^d					
	314		H = 5,6 · 10 ³ t ^{0,25} [J m ⁻²]					
	315 - 400		H = 18 t ^{0,75} C _E [J m ⁻²]					
	400 - 700		H = 5 · 10 ⁻³ C _E [J m ⁻²]	H = 18 t ^{0,75} C _E [J m ⁻²]				
Visible& IRA	700 - 1 050		H = 5 · 10 ⁻³ C _A C _E [J m ⁻²]	H = 18 t ^{0,75} C _A C _E [J m ⁻²]				
	1 050- 1 400		H = 5 · 10 ⁻² C _C C _E [J m ⁻²]	H = 90 · t ^{0,75} C _C C _E [J m ⁻²]				
IRB & IRC	1 400 - 1 500	See note ^b	E = 10 ¹² [W m ⁻²] See note ^c	H = 10 ³ [J m ⁻²]		H = 5,6 · 10 ³ · t ^{0,25} [J m ⁻²]		
	1 500 - 1 800		E = 10 ¹³ [W m ⁻²] See note ^c		H = 10 ⁴ [J m ⁻²]			
	1 800 - 2 600		E = 10 ¹² [W m ⁻²] See note ^c		H = 10 ³ [J m ⁻²]			
	2 600 - 10 ⁶		E = 10 ¹¹ [W m ⁻²] See note ^c		H = 5,6 · 10 ³ · t ^{0,25} [J m ⁻²]			

^a If the wavelength of the laser is covered by two limits, then the more restrictive applies.
^b When 1 400 ≤ λ < 10⁵ nm : aperture diameter = 1 mm for t ≤ 0,3 s and 1,5 t^{0,375} mm for 0,3 s < t < 10 s; when 10⁵ ≤ λ < 10⁶ nm : aperture diameter = 11 mm.
^c Due to lack of data at these pulse lengths, ICNIRP recommends the use of the 1 ns irradiance limits.
^d The table states values for single laser pulses. In case of multiple laser pulses, then the laser pulse durations of pulses falling within an interval T_{min} (listed in table 2.6) must be added up and the resulting time value must be filled in for t in the formula:
5,6 · 10³ t^{0,25}.

Table 2.3

Exposure limit values for laser exposure to the eye — Long exposure duration ≥ 10 s

Wavelength ^a [nm]		Aperture	Duration [s]	
			10 ¹ - 10 ²	10 ³ - 10 ⁴
UVC	180 - 280	3,5 mm	H = 30 [J m ⁻²]	
	280 - 302		H = 40 [J m ⁻²]	
	303		H = 60 [J m ⁻²]	
	304		H = 100 [J m ⁻²]	
	305		H = 160 [J m ⁻²]	
	306		H = 250 [J m ⁻²]	
	307		H = 400 [J m ⁻²]	
	308		H = 630 [J m ⁻²]	
	309		H = 1,0 · 10 ³ [J m ⁻²]	
	310		H = 1,6 · 10 ³ [J m ⁻²]	
	311		H = 2,5 · 10 ³ [J m ⁻²]	
	312		H = 4,0 · 10 ³ [J m ⁻²]	
	313	H = 6,3 · 10 ³ [J m ⁻²]		
	314	H = 10 ⁴ [J m ⁻²]		
UVA	315 - 400			
Visible 400 - 700	400 - 600 Photochemical ^b Retinal damage	7 mm	H = 100 C _B [J m ⁻²] (γ = 11 mrad) ^d	E = 1 C _B [W m ⁻²] (γ = 1,1 t ^{0,5} mrad) ^d
	400 - 700 Thermal ^b Retinal damage		if α < 1,5 mrad then E = 10 [W m ⁻²] if α > 1,5 mrad and t ≤ T ₂ then H = 18 C _E t ^{0,75} [J m ⁻²] if α > 1,5 mrad and t > T ₂ then E = 18 C _E T ₂ ^{-0,25} [W m ⁻²]	
IRA	700 - 1 400	7 mm	if α < 1,5 mrad then E = 10 C _A C _C [W m ⁻²] if α > 1,5 mrad and t ≤ T ₂ then H = 18 C _A C _C t ^{0,75} [J m ⁻²] if α > 1,5 mrad and t > T ₂ then E = 18 C _A C _C T ₂ ^{-0,25} [W m ⁻²] (not to exceed 1 000 W m ⁻²)	
IRB & IRC	1 400 - 10 ⁶	See ^c	E = 1 000 [W m ⁻²]	

^a If the wavelength or another condition of the laser is covered by two limits, then the more restrictive applies.

^b For small sources subtending an angle of 1,5 mrad or less, the visible dual limits E from 400 nm to 600 nm reduce to the thermal limits for $10 \text{ s} \leq t < T_1$ and to photochemical limits for longer times. For T_1 and T_2 see Table 2.5. The photochemical retinal hazard limit may also be expressed as a time integrated radiance $G = 10^5 \text{ C}_{\text{B}} \text{ [J m}^{-2} \text{ sr}^{-1}\text{]} \text{ for } t > 10\,000 \text{ s}$ and $L = 100 \text{ C}_{\text{B}} \text{ [W m}^{-2} \text{ sr}^{-1}\text{]} \text{ for } t > 10\,000 \text{ s}$. For the measurement of G and L , γ_m must be used as averaging field of view. The official border between visible and infrared is 780 nm as defined by the CIE. The column with wavelength band names is only meant to provide better overview for the user. (The notation G is used by CIE; the notation L is used by IEC and CENELEC.)

^c For wavelength 1 400 - 10⁶ nm: aperture diameter = 3,5 mm; for wavelength 10⁵ - 10⁶ nm: aperture diameter = 11 mm.

^d For measurement of the exposure value the consideration of γ is defined as follows: if α (angular subtense of a source) $> \gamma$ (limiting cone angle, indicated in brackets in the corresponding column) then the measurement field of view γ_m should be the given value of γ . (If a larger measurement field of view is used, then the hazard would be overestimated).

If $\alpha < \gamma$ then the measurement field of view γ_m must be large enough to fully enclose the source but is otherwise not limited and may be larger than γ .

Table 2.4

Exposure limit values for laser exposure of skin

Wavelength ^a [nm]		Aperture	Duration [s]				
UV (A, B, C)	180-400	3,5mm	$< 10^{-9}$	$10^{-9} - 10^{-7}$	$10^{-7} - 10^{-3}$	$10^{-3} - 10^1$	$10^1 - 3 \cdot 10^4$
			$E = 3 \cdot 10^{10} \text{ [W m}^{-2}\text{]}$	Same as eye exposure limits			
Visible and IRA	400-700	3,5mm	$E = 2 \cdot 10^{11} \text{ [W m}^{-2}\text{]}$	$H = 200 C_A$	$H = 1,1 \cdot 10^4 C_A t^{0,25} \text{ [J m}^{-2}\text{]}$		$E = 2 \cdot 10^3 C_A \text{ [W m}^{-2}\text{]}$
	700-1 400		$E = 2 \cdot 10^{11} C_A \text{ [W m}^{-2}\text{]}$	$\text{[J m}^{-2}\text{]}$			
IRB and IRC	1 400-1 500	3,5mm	$E = 10^{12} \text{ [W m}^{-2}\text{]}$	Same as eye exposure limits			
	1 500-1 800		$E = 10^{13} \text{ [W m}^{-2}\text{]}$				
	1 800-2 600		$E = 10^{12} \text{ [W m}^{-2}\text{]}$				
	2 600-10 ⁶		$E = 10^{11} \text{ [W m}^{-2}\text{]}$				

a If the wavelength or another condition of the laser is covered by two limits, then the more restrictive applies.

Table 2.5

Applied correction factors and other calculation parameters

Parameter as listed in ICNIRP	Valid spectral range (nm)	Value
C_A	$\lambda < 700$	$C_A = 1,0$
	700 — 1 050	$C_A = 10^{0,002(\lambda - 700)}$
	1 050 — 1 400	$C_A = 5,0$
C_B	400 — 450	$C_B = 1,0$
	450 — 700	$C_B = 10^{0,02(\lambda - 450)}$
C_C	700 — 1 150	$C_C = 1,0$
	1 150 — 1 200	$C_C = 10^{0,018(\lambda - 1\,150)}$
	1 200 — 1 400	$C_C = 8,0$
T_1	$\lambda < 450$	$T_1 = 10 \text{ s}$
	450 — 500	$T_1 = 10 \cdot [10^{0,02(\lambda - 450)}] \text{ s}$
	$\lambda > 500$	$T_1 = 100 \text{ s}$
Parameter as listed in ICNIRP	Valid for biological effect	Value
α_{\min}	all thermal effects	$\alpha_{\min} = 1,5 \text{ mrad}$
Parameter as listed in ICNIRP	Valid angular range (mrad)	Value
C_E	$\alpha < \alpha_{\min}$	$C_E = 1,0$
	$\alpha_{\min} < \alpha < 100$	$C_E = \alpha / \alpha_{\min}$
	$\alpha > 100$	$C_E = \alpha^2 / (\alpha_{\min} \cdot \alpha_{\max}) \text{ mrad}$ with $\alpha_{\max} = 100 \text{ mrad}$
T_2	$\alpha < 1,5$	$T_2 = 10 \text{ s}$
	$1,5 < \alpha < 100$	$T_2 = 10 \cdot [10^{(\alpha - 1,5) / 98,5}] \text{ s}$
	$\alpha > 100$	$T_2 = 100 \text{ s}$

Parameter as listed in ICNIRP	Valid exposure time range (s)	Value
γ	$t \leq 100$	$\gamma = 11$ [mrad]
	$100 < t < 10^4$	$\gamma = 1,1 t^{0,5}$ [mrad]
	$t > 10^4$	$\gamma = 110$ [mrad]

Table 2.6

Correction for repetitive exposure

Each of the following three general rules should be applied to all repetitive exposures as occur from repetitively pulsed or scanning laser systems:

1. The exposure from any single pulse in a train of pulses shall not exceed the exposure limit value for a single pulse of that pulse duration.
2. The exposure from any group of pulses (or sub-group of pulses in a train) delivered in time t shall not exceed the exposure limit value for time t .
3. The exposure from any single pulse within a group of pulses shall not exceed the single-pulse exposure limit value multiplied by a cumulative-thermal correction factor $C_p = N^{-0,25}$, where N is the number of pulses. This rule applies only to exposure limits to protect against thermal injury, where all pulses delivered in less than T_{\min} are treated as a single pulse.

Parameter	Valid spectral range (nm)	Value
T_{\min}	$315 < \lambda \leq 400$	$T_{\min} = 10^{-9}$ s (= 1 ns)
	$400 < \lambda \leq 1\,050$	$T_{\min} = 18 \cdot 10^{-6}$ s (= 18 μ s)
	$1\,050 < \lambda \leq 1\,400$	$T_{\min} = 50 \cdot 10^{-6}$ s (= 50 μ s)
	$1\,400 < \lambda \leq 1\,500$	$T_{\min} = 10^{-3}$ s (= 1 ms)
	$1\,500 < \lambda \leq 1\,800$	$T_{\min} = 10$ s
	$1\,800 < \lambda \leq 2\,600$	$T_{\min} = 10^{-3}$ s (= 1 ms)
	$2\,600 < \lambda \leq 10^6$	$T_{\min} = 10^{-7}$ s (= 100 ns)

STATEMENT BY THE COUNCIL**Statement by the Council on the use of the word 'penalties' in the English version of legal instruments of the European Community**

In the opinion of the Council, when the word 'penalties' is used in the English version of legal instruments of the European Community, this word is used in a neutral sense and does not relate specifically to criminal law sanctions, but could also include administrative and financial sanctions, as well as other types of sanction. When Member States are obliged under a Community act to introduce 'penalties', it is up to them to choose the appropriate type of sanction in conformity with the case law of the European Court of Justice.

In the Community language data base, the following translations are made of the word 'penalty' in some other languages:

in Spanish, '*sanciones*'; in Danish, '*sanktioner*'; in German, '*Sanktionen*'; in Hungarian, '*jogkövetkezmények*'; in Italian, '*sanzioni*'; in Latvian, '*sankcijas*'; in Lithuanian, '*sankcijos*'; in Dutch, '*sancties*'; in Portuguese, '*sanções*'; in Slovak, '*sankcie*'; and in Swedish, '*sanktioner*'.

If, in revised English versions of legal instruments where the word 'sanctions' has previously been used, this word is replaced with the word 'penalties', this does not constitute a substantive difference.

DIRECTIVE 2006/31/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**of 5 April 2006****amending directive 2004/39/EC on markets in financial instruments, as regards certain deadlines****(Text with EEA relevance)**

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 47(2) thereof,

Having regard to the proposal from the Commission,

After consulting the European Economic and Social Committee,

Having regard to the opinion of European Central Bank ⁽¹⁾,

Acting in accordance with the procedure laid down in Article 251 of the Treaty ⁽²⁾,

Whereas:

(1) Directive 2004/39/EC of the European Parliament and of the Council of 21 April 2004 on markets in financial instruments ⁽³⁾ introduces a comprehensive regulatory regime to ensure a high quality of execution of investor transactions.

(2) Directive 2004/39/EC provides that Member States are to adopt the laws, regulations and administrative provisions necessary to comply with it by 30 April 2006. In order to ensure uniform application in the Member States, a significant number of complex provisions of that Directive need to be supplemented by implementing measures, to be adopted by the Commission during the period for transposition by Member States. Because Member States cannot fully prepare and finalise their national laws until the content of the implementing measures is clear, they may have difficulty in meeting the current transposition deadline.

(3) In order to comply with the requirements of Directive 2004/39/EC and national implementing legislation, investment firms and other regulated entities may have to introduce new information technology systems, new organisational structures, and reporting and record-keeping procedures, or to make significant modifications to existing systems and practices. This can only be done once the contents of the implementing measures to be adopted by the Commission and of the national legislation transposing the Directive are settled.

(4) It is also necessary that Directive 2004/39/EC and its implementing measures be transposed into national law or apply directly in Member States simultaneously for the Directive to produce its full effect.

(5) It is therefore appropriate to extend the deadline for Member States to transpose Directive 2004/39/EC into national law. Similarly, the deadline for investment firms and credit institutions to comply with the new requirements should be postponed for a period after the transposition into national law has been completed by the Member States.

(6) Given the interaction between the different provisions of Directive 2004/39/EC, it is appropriate that any extension of those deadlines apply to all the provisions of that Directive. Any extension of the transposition and application deadlines should be proportionate to, and not exceed, the needs of the Member States and regulated entities. In order to avoid fragmentation that could hamper the functioning of the internal market in securities, Member States should apply the provisions of Directive 2004/39/EC at the same time.

(7) In its Resolution of 5 February 2002 on the implementation of financial services legislation ⁽⁴⁾, the European Parliament requested that it and the Council should have an equal role in supervising the way in which the Commission exercises its executive role in order to reflect the legislative powers of the European Parliament under Article 251 of the Treaty. In the solemn declaration made before the European Parliament the same day by its President, the Commission supported that request. On 11 December 2002, the Commission proposed amendments to Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission ⁽⁵⁾, and then submitted an amended proposal on 22 April 2004. The European Parliament does not consider that this proposal preserves its

⁽¹⁾ OJ C 323, 20.12.2005, p. 31.

⁽²⁾ Opinion of the European Parliament of 13 December 2005 (not yet published in the Official Journal) and Council Decision of 10 March 2006.

⁽³⁾ OJ L 145, 30.4.2004, p. 1.

⁽⁴⁾ OJ C 284 E, 21.11.2002, p. 115.

⁽⁵⁾ OJ L 184, 17.7.1999, p. 23.

legislative prerogatives. In the view of the European Parliament, it and the Council should have the opportunity of evaluating the conferral of implementing powers on the Commission within a determined period. It is therefore appropriate to limit the period during which the Commission may adopt implementing measures.

- (8) The European Parliament should be given a period of three months from the first transmission of draft amendments and implementing measures to allow it to examine them and to give its opinion. However, in urgent and duly justified cases, it should be possible to shorten that period. If, within that period, a resolution is adopted by the European Parliament, the Commission should re-examine the draft amendments or measures.
- (9) Further consequential amendments are necessary to postpone the dates for the repeal of Council Directive 93/22/EEC of 10 May 1993 on investment services in the securities field ⁽¹⁾ and for the transitional provisions laid down in Directive 2004/39/EC, and to extend the timetable for the Commission's reporting obligations.
- (10) Given the postponed deadline between the obligation for Member States to transpose Directive 2004/39/EC into national law and the deadline for investment firms and credit institutions to comply with the new requirements, the provisions of Directive 2004/39/EC will remain ineffective until 1 November 2007; it is therefore appropriate to repeal Directive 93/22/EEC with effect from 1 November 2007.
- (11) Directive 2004/39/EC should therefore be amended accordingly,

HAVE ADOPTED THIS DIRECTIVE:

Article 1

Directive 2004/39/EC is hereby amended as follows:

- (1) Recital 69 shall be replaced by the following:

‘(69) The European Parliament should be given a period of three months from the first transmission of draft amendments and implementing measures to allow it to examine them and to give its opinion. However, in urgent and duly justified cases, it should be possible to shorten that period. If, within that period, a resolution is adopted by the European Parliament, the Commission should re-examine the draft amendments or measures.’;

- (2) Article 64 shall be amended as follows:

- (a) the following paragraph shall be inserted:

‘2a. None of the implementing measures enacted may change the essential provisions of this Directive.’;

- (b) paragraph 3 shall be replaced by the following:

‘3. Without prejudice to the implementing measures already adopted, on 1 April 2008 at the latest, the application of this Directive's provisions requiring the adoption of technical rules, amendments and decisions in accordance with paragraph 2 shall be suspended. Acting on a proposal from the Commission, the European Parliament and the Council may renew the provisions concerned in accordance with the procedure laid down in Article 251 of the Treaty and, to that end, they shall review them prior to the date referred to above.’;

- (3) Article 65 shall be replaced by the following:

‘Article 65

Reports and review

1. By 31 October 2007, the Commission shall, on the basis of public consultation and in the light of discussions with competent authorities, report to the European Parliament and to the Council on the possible extension of the scope of the provisions of this Directive concerning pre and post-trade transparency obligations to transactions in classes of financial instruments other than shares.

2. By 31 October 2008, the Commission shall present the European Parliament and the Council with a report on the application of Article 27.

3. By 30 April 2008, the Commission shall, on the basis of public consultations and in the light of discussions with competent authorities, report to the European Parliament and to the Council on:

- (a) the continued appropriateness of the exemption provided for in Article 2(1)(k) for undertakings whose main business is dealing on own account in commodity derivatives;
- (b) the content and form of proportionate requirements for the authorisation and supervision of such undertakings as investment firms within the meaning of this Directive;

⁽¹⁾ OJ L 141, 11.6.1993, p. 27. Directive as last amended by Directive 2002/87/EC of the European Parliament and of the Council (OJ L 35, 11.2.2003, p. 1).

(c) the appropriateness of rules concerning the appointment of tied agents in performing investment services and/or activities, in particular with respect to the supervision of them;

(d) the continued appropriateness of the exemption provided for in Article 2(1)(i).

4. By 30 April 2008, the Commission shall present the European Parliament and the Council with a report on the state of the removal of the obstacles which may prevent the consolidation at European level of the information that trading venues are required to publish.

5. On the basis of the reports referred to in paragraphs 1 to 4, the Commission may submit proposals for related amendments to this Directive.

6. By 31 October 2006, the Commission shall, in the light of discussions with competent authorities, report to the European Parliament and to the Council on the continued appropriateness of the requirements for professional indemnity insurance imposed on intermediaries under Community law.;

(6) In Article 71, paragraphs 1 to 5 shall be replaced by the following:

‘1. Investment firms already authorised in their home Member State to provide investment services before 1 November 2007 shall be deemed to be so authorised for the purposes of this Directive if the laws of that Member State provide that to take up such activities they must comply with conditions comparable to those provided for in Articles 9 to 14.

2. A regulated market or a market operator already authorised in its home Member State before 1 November 2007 shall be deemed to be so authorised for the purposes of this Directive if the laws of that Member State provide that the regulated market or market operator, as the case may be, must comply with conditions comparable to those provided for in Title III.

3. Tied agents already entered in a public register before 1 November 2007 shall be deemed to be so registered for the purposes of this Directive if the laws of Member States concerned provide that tied agents must comply with conditions comparable to those provided for in Article 23.

(4) Article 69 shall be replaced by the following:

‘Article 69

Repeal of Directive 93/22/EEC

Directive 93/22/EEC shall be repealed with effect from 1 November 2007. References to Directive 93/22/EEC shall be construed as references to this Directive. References to terms defined in, or Articles of, Directive 93/22/EEC shall be construed as references to the equivalent term defined in, or Article of, this Directive.;

(5) in Article 70, the first subparagraph shall be replaced by the following:

‘Member States shall adopt the laws, regulations and administrative provisions necessary to comply with this Directive by 31 January 2007. They shall forthwith inform the Commission thereof.

They shall apply these measures from 1 November 2007.;

4. Information communicated before 1 November 2007 for the purposes of Articles 17, 18 or 30 of Directive 93/22/EEC shall be deemed to have been communicated for the purposes of Articles 31 and 32 of this Directive.

5. Any existing system falling under the definition of an MTF operated by a market operator of a regulated market shall, at the request of the market operator of the regulated market, be authorised as an MTF, provided that it complies with rules equivalent to those required by this Directive for the authorisation and operation of MTFs and that the request concerned is made within eighteen months following 1 November 2007.’.

Article 2

1. Member States shall adopt the laws, regulations and administrative provisions necessary to comply with this Directive by 31 January 2007. They shall forthwith inform the Commission thereof.

They shall apply these measures from 1 November 2007.

2. When Member States adopt these measures, they shall contain a reference to this Directive or shall be accompanied by such reference on the occasion of their official publication. The methods of making such reference shall be laid down by Member States.

Article 3

This Directive shall enter into force on the day following that of its publication in the *Official Journal of the European Union*.

Article 4

This Directive is addressed to the Member States.

Done at Strasbourg, 5 April 2006.

For the European Parliament

The President

J. BORRELL FONTELLES

For the Council

The President

H. WINKLER

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
(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 175(1) thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Economic and Social Committee ⁽¹⁾,

Having regard to the opinion of the Committee of the Regions ⁽²⁾,

Acting in accordance with the procedure laid down in Article 251 of the Treaty ⁽³⁾,

Whereas:

- (1) In the Community there is a need for improved energy end-use efficiency, managed demand for energy and promotion of the production of renewable energy, as there is relatively limited scope for any other influence on energy supply and distribution conditions in the short to medium term, either through the building of new capacity or through the improvement of transmission and distribution. This Directive thus contributes to improved security of supply.
- (2) Improved energy end-use efficiency will also contribute to the reduction of primary energy consumption, to the mitigation of CO₂ and other greenhouse gas emissions and thereby to the prevention of dangerous climate change. These emissions continue to increase, making it

more and more difficult to meet the Kyoto commitments. Human activities attributed to the energy sector cause as much as 78 % of the Community greenhouse gas emissions. The Sixth Community Environment Action Programme, laid down by Decision N° 1600/2002/EC of the European Parliament and of the Council ⁽⁴⁾, envisages that further reductions are required to achieve the United Nations Framework Convention on Climate Change long-term objective of stabilising greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Therefore, concrete policies and measures are necessary.

- (3) Improved energy end-use efficiency will make it possible to exploit potential cost-effective energy savings in an economically efficient way. Energy efficiency improvement measures could realise these energy savings and thus help the Community reduce its dependence on energy imports. Furthermore, a move towards more energy-efficient technologies can boost the Community's innovativeness and competitiveness as underlined in the Lisbon strategy.
- (4) The Communication from the Commission on the implementation of the first phase of the European Climate Change Programme listed a directive on energy demand management as one of the priority climate change measures to be taken at Community level.
- (5) This Directive is consistent with Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in electricity ⁽⁵⁾ and with Directive 2003/55/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in natural gas ⁽⁶⁾, which provide for the possibility of using energy efficiency and demand-side management as alternatives to new supply and for environmental protection, allowing Member State authorities, *inter alia*, to tender for new capacity or to opt for energy efficiency and demand-side measures, including systems for white certificates.

⁽¹⁾ OJ C 120, 20.5.2005, p. 115.

⁽²⁾ OJ C 318, 22.12.2004, p. 19.

⁽³⁾ Opinion of the European Parliament of 7 June 2005 (not yet published in the Official Journal), Council Common Position of 23 September 2005 (OJ C 275 E, 8.11.2005, p. 19) and Position of the European Parliament of 13 December 2005 (not yet published in the Official Journal), Council Decision of 14 March 2006.

⁽⁴⁾ OJ L 242, 10.9.2002, p. 1.

⁽⁵⁾ OJ L 176, 15.7.2003, p. 37. Directive as amended by Council Directive 2004/85/EC (OJ L 236, 7.7.2004, p. 10).

⁽⁶⁾ OJ L 176, 15.7.2003, p. 57.

- (6) This Directive is without prejudice to Article 3 of Directive 2003/54/EC, which requires that Member States ensure that all household customers and, where Member States deem it appropriate, small enterprises, enjoy universal service, that is the right to be supplied with electricity of a specified quality within their territory at reasonable, easily and clearly comparable, and transparent prices.
- (7) The aim of this Directive is not only to continue to promote the supply side of energy services, but also to create stronger incentives for the demand side. The public sector in each Member State should thus set a good example regarding investments, maintenance and other expenditure on energy-using equipment, energy services and other energy efficiency improvement measures. Therefore, the public sector should be encouraged to integrate energy efficiency improvement considerations into its investments, depreciation allowances and operating budgets. Furthermore, the public sector should endeavour to use energy efficiency criteria in tendering procedures for public procurement, a practice allowed under Directive 2004/17/EC of the European Parliament and of the Council of 31 March 2004 coordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors ⁽¹⁾, and Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts ⁽²⁾, the principle of which was confirmed by the judgment of 17 September 2002 of the Court of Justice in Case C-513/99 ⁽³⁾. In view of the fact that administrative structures vary widely between Member States, the different types of measures which the public sector may take should be taken at the appropriate national, regional and/or local level.
- (8) There is a large variety of ways in which the public sector can fulfil its exemplary role: besides the applicable measures listed in Annex III and VI, the public sector may, for example, initiate energy-efficiency pilot projects and stimulate energy-efficient behaviour of employees. In order to achieve the desired multiplier effect, a number of such actions should be communicated in an effective way to individual citizens and/or to companies, whilst emphasising the cost benefits.
- (9) The liberalisation of the retail markets for final customers for electricity, natural gas, coal and lignite, heating, and in some cases even district heating and cooling, has almost exclusively led to improved efficiency and lower costs on the energy generation, transformation and distribution side. This liberalisation has not led to significant competition in products and services which could have resulted in improved energy efficiency on the demand side.
- (10) In its Resolution of 7 December 1998 on energy efficiency in the European Community ⁽⁴⁾, the Council endorsed a target for the Community as a whole to improve energy intensity of final consumption by an additional one percentage point per annum up to the year 2010.
- (11) Member States should therefore adopt national indicative targets to promote energy end-use efficiency and to ensure the continued growth and viability of the market for energy services, and thus contribute to the implementation of the Lisbon strategy. The adoption of national indicative targets to promote energy end-use efficiency provides effective synergy with other Community legislation that will, when applied, contribute to the achievement of those national targets.
- (12) This Directive requires action to be undertaken by the Member States, with the fulfilment of its objectives depending on the effects that such action has on the final consumers of energy. The end result of Member States' action is dependent on many external factors which influence the behaviour of consumers as regards their energy use and their willingness to implement energy saving methods and use energy saving devices. Therefore, even though Member States commit themselves to making efforts to achieve the target figure of 9 %, the national energy savings target is indicative in nature and entails no legally enforceable obligation for Member States to achieve it.
- (13) In aiming to achieve their national indicative target, Member States may set themselves a target higher than 9 %.
- (14) The improvement of energy efficiency will benefit from an exchange of information, experience and best practice at all levels, including, in particular, the public sector. Therefore, Member States should list measures undertaken in the context of this Directive, and review their effect as far as possible, in energy efficiency action plans.
- (15) When striving for energy efficiency on the basis of technological, behavioural and/or economic changes, substantial negative environmental impact should be avoided, and social priorities should be respected.
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- ⁽¹⁾ OJ L 134, 30.4.2004, p. 1. Directive as last amended by Commission Regulation (EC) No 2083/2005 (OJ L 333, 20.12.2005, p. 28).
- ⁽²⁾ OJ L 134, 30.4.2004, p. 114. Directive as last amended by Regulation (EC) No 2083/2005.
- ⁽³⁾ C-513/99: *Concordia Bus Finland Oy Ab, formerly Stagecoach Finland Oy Ab v Helsingin kaupunki and HKL-Bussiliikenne* (2002 ECR I-7213).
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- ⁽⁴⁾ OJ C 394, 17.12.1998, p. 1.

- (16) The funding of supply and the costs of the demand side have an important role to play in energy services. The creation of funds to subsidise the implementation of energy efficiency programmes and other energy efficiency improvement measures and to promote the development of a market for energy services can constitute an appropriate tool for the provision of non-discriminatory start-up funding in such a market.
- (17) Improved energy end-use efficiency can be achieved by increasing the availability of and demand for energy services or by other energy efficiency improvement measures.
- (18) In order to realise the energy savings potential in certain market segments where energy audits are generally not sold commercially, such as households, Member States should ensure the availability of energy audits.
- (19) The Council Conclusions of 5 December 2000 list the promotion of energy services through the development of a Community strategy as a priority area for action to improve energy efficiency.
- (20) Energy distributors, distribution system operators and retail energy sales companies can improve energy efficiency in the Community if the energy services they market include efficient end-use, such as indoor thermal comfort, domestic hot water, refrigeration, product manufacturing, illumination and motive power. Profit maximisation for energy distributors, distribution system operators and retail energy sales companies thus becomes more closely related to selling energy services to as many customers as possible than to selling as much energy as possible to each customer. Member States should endeavour to avoid any distortion of competition in this area, in order to guarantee a level playing field between all energy service providers; they can, however, delegate this task to the national regulator.
- (21) Taking full account of the national organisation of market actors in the energy sector and in order to favour the implementation of energy services and of the measures to improve energy efficiency provided for in this Directive, Member States should have the option of making it compulsory for energy distributors, distribution system operators or retail energy sales companies or, where appropriate, for two or all of these market actors, to provide such services and to participate in such measures.
- (22) The use of third-party financing arrangements is an innovative practice that should be stimulated. In these, the beneficiary avoids investment costs by using part of the financial value of energy savings that result from the third party's investment to repay the third party's investment and interest costs.
- (23) With a view to making tariffs and other regulations for net-bound energy more conducive to efficient energy end-use, unjustifiable volume-driving incentives should be removed.
- (24) The promotion of the market for energy services can be achieved by a variety of means, including non-financial ones.
- (25) The energy services, energy efficiency improvement programmes and other energy efficiency improvement measures put into effect to reach the energy savings target may be supported and/or implemented through voluntary agreements between stakeholders and public sector bodies appointed by the Member States.
- (26) The voluntary agreements which are covered by this Directive should be transparent and contain, where applicable, information on at least the following issues: quantified and staged objectives, monitoring and reporting.
- (27) The motor fuel and transport sectors have an important role to play regarding energy efficiency and energy savings.
- (28) In defining energy efficiency improvement measures, account should be taken of efficiency gains obtained through the widespread use of cost-effective technological innovations, for instance electronic metering. In the context of this Directive, competitively priced individual meters include accurate calorimeters.
- (29) In order to enable final consumers to make better-informed decisions as regards their individual energy consumption, they should be provided with a reasonable amount of information thereon and with other relevant information, such as information on available energy efficiency improvement measures, comparative final consumer profiles or objective technical specifications for energy-using equipment, which may include 'Factor Four' or similar equipment. It is recalled that some such valuable information should already be made available to final customers under Article 3(6) of Directive 2003/54/EC. In addition, consumers should be actively encouraged to check their own meter readings regularly.
- (30) All types of information relating to energy-efficiency should be widely disseminated in an appropriate form, including through billing, to relevant target audiences. This can include information on financial and legal frameworks, communication and promotion campaigns, and the widespread exchange of best practice at all levels.

(31) With the adoption of this Directive, all substantive provisions of Council Directive 93/76/EEC of 13 September 1993 to limit carbon dioxide emissions by improving energy efficiency (SAVE) ⁽¹⁾ are covered by other Community legislation and therefore Directive 93/76/EEC should be repealed.

(32) Since the objectives of this Directive, namely to promote energy end-use efficiency and to develop a market for energy services, cannot be sufficiently achieved by the Member States and can be better achieved at Community level, the Community may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty. In accordance with the principle of proportionality, as set out in that Article, this Directive does not go beyond what is necessary in order to achieve those objectives.

(33) The measures necessary for the implementation of this Directive should be adopted in accordance with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission ⁽²⁾,

HAVE ADOPTED THIS DIRECTIVE:

CHAPTER I

SUBJECT MATTER AND SCOPE

Article 1

Purpose

The purpose of this Directive is to enhance the cost-effective improvement of energy end-use efficiency in the Member States by:

- (a) providing the necessary indicative targets as well as mechanisms, incentives and institutional, financial and legal frameworks to remove existing market barriers and imperfections that impede the efficient end use of energy;
- (b) creating the conditions for the development and promotion of a market for energy services and for the delivery of other energy efficiency improvement measures to final consumers.

⁽¹⁾ OJ L 237, 22.9.1993, p. 28.

⁽²⁾ OJ L 184, 17.7.1999, p. 23.

Article 2

Scope

This Directive shall apply to:

- (a) providers of energy efficiency improvement measures, energy distributors, distribution system operators and retail energy sales companies. However, Member States may exclude small distributors, small distribution system operators and small retail energy sales companies from the application of Articles 6 and 13;
- (b) final customers. However, this Directive shall not apply to those undertakings involved in categories of activities listed in Annex I to Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community ⁽³⁾;
- (c) the armed forces, only to the extent that its application does not cause any conflict with the nature and primary aim of the activities of the armed forces and with the exception of material used exclusively for military purposes.

Article 3

Definitions

For the purposes of this Directive, the following definitions shall apply:

- (a) 'energy': all forms of commercially available energy, including electricity, natural gas (including liquefied natural gas), liquefied petroleum gas, any fuel for heating and cooling (including district heating and cooling), coal and lignite, peat, transport fuels (excluding aviation and maritime bunker fuels) and biomass as defined in Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market ⁽⁴⁾;
- (b) 'energy efficiency': a ratio between an output of performance, service, goods or energy, and an input of energy;

⁽³⁾ OJ L 275, 25.10.2003, p. 32. Directive as amended by Directive 2004/101/EC (OJ L 338, 13.11.2004, p. 18).

⁽⁴⁾ OJ L 283, 27.10.2001, p. 33. Directive as amended by the 2003 Act of Accession.

- (c) 'energy efficiency improvement': an increase in energy end-use efficiency as a result of technological, behavioural and/or economic changes;
- (d) 'energy savings': an amount of saved energy determined by measuring and/or estimating consumption before and after implementation of one or more energy efficiency improvement measures, whilst ensuring normalisation for external conditions that affect energy consumption;
- (e) 'energy service': the physical benefit, utility or good derived from a combination of energy with energy efficient technology and/or with action, which may include the operations, maintenance and control necessary to deliver the service, which is delivered on the basis of a contract and in normal circumstances has proven to lead to verifiable and measurable or estimable energy efficiency improvement and/or primary energy savings;
- (f) 'energy efficiency mechanisms': general instruments used by governments or government bodies to create a supportive framework or incentives for market actors to provide and purchase energy services and other energy efficiency improvement measures;
- (g) 'energy efficiency improvement programmes': activities that focus on groups of final customers and that normally lead to verifiable and measurable or estimable energy efficiency improvement;
- (h) 'energy efficiency improvement measures': all actions that normally lead to verifiable and measurable or estimable energy efficiency improvement;
- (i) 'energy service company' (ESCO): a natural or legal person that delivers energy services and/or other energy efficiency improvement measures in a user's facility or premises, and accepts some degree of financial risk in so doing. The payment for the services delivered is based (either wholly or in part) on the achievement of energy efficiency improvements and on the meeting of the other agreed performance criteria;
- (j) 'energy performance contracting': a contractual arrangement between the beneficiary and the provider (normally an ESCO) of an energy efficiency improvement measure, where investments in that measure are paid for in relation to a contractually agreed level of energy efficiency improvement;
- (k) 'third-party financing': a contractual arrangement involving a third party — in addition to the energy supplier and the beneficiary of the energy efficiency improvement measure — that provides the capital for that measure and charges the beneficiary a fee equivalent to a part of the energy savings achieved as a result of the energy efficiency improvement measure. That third party may or may not be an ESCO;
- (l) 'energy audit': a systematic procedure to obtain adequate knowledge of the existing energy consumption profile of a building or group of buildings, of an industrial operation and/or installation or of a private or public service, identify and quantify cost-effective energy savings opportunities, and report the findings;
- (m) 'financial instruments for energy savings': all financial instruments such as funds, subsidies, tax rebates, loans, third-party financing, energy performance contracting, guarantee of energy savings contracts, energy outsourcing and other related contracts that are made available to the market place by public or private bodies in order to cover partly or totally the initial project cost for implementing energy efficiency improvement measures;
- (n) 'final customer': a natural or legal person that purchases energy for his own end use;
- (o) 'energy distributor': a natural or legal person responsible for transporting energy with a view to its delivery to final customers and to distribution stations that sell energy to final customers. This definition excludes electricity and natural gas distribution system operators, covered in point (p);
- (p) 'distribution system operator': a natural or legal person responsible for operating, ensuring the maintenance of and, if necessary, developing the distribution system of electricity or natural gas in a given area and, where applicable, its interconnections with other systems, and for ensuring the long term ability of the system to meet reasonable demands for the distribution of electricity or natural gas;
- (q) 'retail energy sales company': a natural or legal person that sells energy to final customers;
- (r) 'small distributor, small distribution system operator and small retail energy sales company': a natural or legal person that distributes or sells energy to final customers, and that distributes or sells less than the equivalent of 75 GWh energy per year or employs fewer than 10 persons or whose annual turnover and/or annual balance sheet total does not exceed EUR 2 000 000;
- (s) 'white certificates': certificates issued by independent certifying bodies confirming the energy savings claims of market actors as a consequence of energy efficiency improvement measures.

CHAPTER II

ENERGY SAVINGS TARGETS*Article 4***General target**

1. Member States shall adopt and aim to achieve an overall national indicative energy savings target of 9 % for the ninth year of application of this Directive, to be reached by way of energy services and other energy efficiency improvement measures. Member States shall take cost-effective, practicable and reasonable measures designed to contribute towards achieving this target.

This national indicative energy savings target shall be set and calculated in accordance with the provisions and methodology set out in Annex I. For purposes of comparison of energy savings and for conversion to a comparable unit, the conversion factors set out in Annex II shall apply unless the use of other conversion factors can be justified. Examples of eligible energy efficiency improvement measures are given in Annex III. A general framework for the measurement and verification of energy savings is given in Annex IV. The national energy savings in relation to the national indicative energy savings target shall be measured as from 1 January 2008.

2. For the purpose of the first Energy Efficiency Action Plan (EEAP) to be submitted in accordance with Article 14, each Member State shall establish an intermediate national indicative energy savings target for the third year of application of this Directive, and provide an overview of its strategy for the achievement of the intermediate and overall targets. This intermediate target shall be realistic and consistent with the overall national indicative energy savings target referred to in paragraph 1.

The Commission shall give an opinion on whether the intermediate national indicative target appears realistic and consistent with the overall target.

3. Each Member State shall draw up programmes and measures to improve energy efficiency.

4. Member States shall assign to one or more new or existing authorities or agencies the overall control and responsibility for overseeing the framework set up in relation to the target mentioned in paragraph 1. These bodies shall thereafter verify the energy savings as a result of energy services and other energy efficiency improvement measures, including existing national energy efficiency improvement measures, and report the results.

5. After having reviewed and reported on the first three years of application of this Directive, the Commission shall examine whether it is appropriate to come forward with a proposal for a directive to further develop the market approach in energy efficiency improvement by means of white certificates.

*Article 5***Energy end-use efficiency in the public sector**

1. Member States shall ensure that the public sector fulfils an exemplary role in the context of this Directive. To this end, they shall communicate effectively the exemplary role and actions of the public sector to citizens and/or companies, as appropriate.

Member States shall ensure that energy efficiency improvement measures are taken by the public sector, focussing on cost-effective measures which generate the largest energy savings in the shortest span of time. Such measures shall be taken at the appropriate national, regional and/or local level, and may consist of legislative initiatives and/or voluntary agreements, as referred to in Article 6(2)(b), or other schemes with an equivalent effect. Without prejudice to national and Community public procurement legislation:

- at least two measures shall be used from the list set out in Annex VI;
- Member States shall facilitate this process by publishing guidelines on energy efficiency and energy savings as a possible assessment criterion in competitive tendering for public contracts.

Member States shall facilitate and enable the exchange of best practices between public sector bodies, for example on energy-efficient public procurement practices, both at the national and international level; to this end, the organisation referred to in paragraph 2 shall cooperate with the Commission with regard to the exchange of best practice as referred to in Article 7(3).

2. Member States shall assign to a new or existing organisation or organisations the administrative, management and implementing responsibility for the integration of energy efficiency improvement requirements as set out in paragraph 1. These may be the same authorities or agencies as those referred to in Article 4(4).

CHAPTER III

**PROMOTION OF ENERGY END-USE EFFICIENCY AND
ENERGY SERVICES***Article 6***Energy distributors, distribution system operators and
retail energy sales companies**

1. Member States shall ensure that energy distributors, distribution system operators and/or retail energy sales companies:

(a) provide on request, but not more than once a year, aggregated statistical information on their final customers to the authorities or agencies referred to in Article 4 (4) or to another designated body, provided that the latter in turn transmits to the former the information received. This information must be sufficient to properly design and implement energy efficiency improvement programmes, and to promote and monitor energy services and other energy efficiency improvement measures. It may include historical information and must include current information on end-user consumption, including, where applicable, load profiles, customer segmentation and geographical location of customers, while preserving the integrity and confidentiality of information that is either of private character or commercially sensitive, in compliance with applicable Community legislation;

(b) refrain from any activities that might impede the demand for and delivery of energy services and other energy efficiency improvement measures, or hinder the development of markets for energy services and other energy efficiency improvement measures. The Member State concerned shall take the necessary measures to bring such activities to an end where they occur.

2. Member States shall:

(a) choose one or more of the following requirements to be complied with by energy distributors, distribution system operators and/or retail energy sales companies, directly and/or indirectly through other providers of energy services or energy efficiency improvement measures:

(i) ensure the offer to their final customers, and the promotion, of competitively priced energy services; or

(ii) ensure the availability to their final customers, and the promotion, of competitively-priced energy audits conducted in an independent manner and/or energy efficiency improvement measures, in accordance with Article 9(2) and Article 12; or

(iii) contribute to the funds and funding mechanisms referred to in Article 11. The level of such contributions shall as a minimum correspond to the estimated costs of offering any of the activities referred to in this paragraph and shall be agreed with the authorities or agencies referred to in Article 4(4); and/or

(b) ensure that voluntary agreements and/or other market-oriented schemes, such as white certificates, with an effect equivalent to one or more of the requirements referred to in point (a) exist or are set up. Voluntary agreements shall be assessed, supervised and followed up by the Member State in order to ensure that they have in practice an effect equivalent to one or more of the requirements referred to in point (a).

To that end, the voluntary agreements shall have clear and unambiguous objectives, and monitoring and reporting requirements linked to procedures that can lead to revised and/or additional measures when the objectives are not achieved or are not likely to be achieved. With a view to ensuring transparency, the voluntary agreements shall be made available to the public and published prior to application to the extent that applicable confidentiality provisions allow, and contain an invitation for stakeholders to comment.

3. Member States shall ensure that there are sufficient incentives, equal competition and level playing fields for market actors other than energy distributors, distribution system operators and retail energy sales companies, such as ESCOs, installers, energy advisors and energy consultants, to independently offer and implement the energy services, energy audits and energy efficiency improvement measures described in paragraph 2(a)(i) and (ii).

4. Under paragraphs 2 and 3, Member States may place responsibilities on distribution system operators only if this is consistent with the requirements relating to the unbundling of accounts laid down in Article 19(3) of Directive 2003/54/EC and in Article 17(3) of Directive 2003/55/EC.

5. The implementation of this Article shall be without prejudice to derogations or exemptions granted under Directives 2003/54/EC and 2003/55/EC.

*Article 7***Availability of information**

1. Member States shall ensure that information on energy efficiency mechanisms and financial and legal frameworks adopted with the aim of reaching the national indicative energy savings target is transparent and widely disseminated to the relevant market actors.
2. Member States shall ensure that greater efforts are made to promote energy end-use efficiency. They shall establish appropriate conditions and incentives for market operators to provide more information and advice to final customers on energy end-use efficiency.
3. The Commission shall ensure that information on best energy-saving practices in Member States is exchanged and widely disseminated.

*Article 8***Availability of qualification, accreditation and certification schemes**

With a view to achieving a high level of technical competence, objectivity and reliability, Member States shall ensure, where they deem it necessary, the availability of appropriate qualification, accreditation and/or certification schemes for providers of energy services, energy audits and energy efficiency improvement measures as referred to in Article 6 (2)(a) (i) and (ii).

*Article 9***Financial instruments for energy savings**

1. Member States shall repeal or amend national legislation and regulations, other than those of a clearly fiscal nature, that unnecessarily or disproportionately impede or restrict the use of financial instruments for energy savings in the market for energy services or other energy efficiency improvement measures.
2. Member States shall make model contracts for those financial instruments available to existing and potential purchasers of energy services and other energy efficiency improvement measures in the public and private sectors. These may be issued by the authority or agency referred to in Article 4(4).

*Article 10***Energy efficient tariffs and other regulations for net-bound energy**

1. Member States shall ensure the removal of those incentives in transmission and distribution tariffs that unnecessarily increase the volume of distributed or transmitted energy. In this respect, in accordance with Article 3(2) of Directive 2003/54/EC and with Article 3(2) of Directive 2003/55/EC, Member States may impose public service obligations relating to energy efficiency on undertakings operating in the electricity and gas sectors respectively.
2. Member States may permit components of schemes and tariff structures with a social aim, provided that any disruptive effects on the transmission and distribution system are kept to the minimum necessary and are not disproportionate to the social aim.

*Article 11***Funds and funding mechanisms**

1. Without prejudice to Articles 87 and 88 of the Treaty, Member States may establish a fund or funds to subsidise the delivery of energy efficiency improvement programmes and other energy efficiency improvement measures and to promote the development of a market for energy efficiency improvement measures. Such measures shall include the promotion of energy auditing, financial instruments for energy savings and, where appropriate, improved metering and informative billing. The funds shall also target end-use sectors with higher transaction costs and higher risks.
2. If established, the funds may provide for grants, loans, financial guarantees and/or other types of financing that guarantee results.
3. The funds shall be open to all providers of energy efficiency improvement measures, such as ESCOs, independent energy advisors, energy distributors, distribution system operators, retail energy sales companies and installers. Member States may decide to open the funds to all final customers. Tendering or equivalent methods which ensure complete transparency shall be carried out in full compliance with applicable public procurement regulations. Member States shall ensure that such funds complement, and do not compete with, commercially-financed energy efficiency improvement measures.

*Article 12***Energy audits**

1. Member States shall ensure the availability of efficient, high-quality energy audit schemes which are designed to identify potential energy efficiency improvement measures and which are carried out in an independent manner, to all final consumers, including smaller domestic, commercial and small and medium-sized industrial customers.

2. Market segments that have higher transaction costs and non-complex facilities may be reached by other measures such as questionnaires and computer programmes made available on the Internet and/or sent to customers by mail. Member States shall ensure the availability of energy audits for market segments where they are not sold commercially, taking into account Article 11(1).

3. Certification in accordance with Article 7 of Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings ⁽¹⁾ shall be regarded as equivalent to an energy audit meeting the requirements set out in paragraphs 1 and 2 of this Article and as equivalent to an energy audit as referred to in Annex VI(e) to this Directive. Furthermore, audits resulting from schemes based on voluntary agreements between organisations of stakeholders and an appointed body, supervised and followed up by the Member State concerned in accordance with Article 6(2)(b) of this Directive, shall likewise be considered as having fulfilled the requirements set out in paragraphs 1 and 2 of this Article.

*Article 13***Metering and informative billing of energy consumption**

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 and/or 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.

When an existing meter is replaced, such competitively priced individual meters shall always be provided, unless this is technically impossible or not cost-effective in relation to the estimated potential savings in the long term. When a new

connection is made in a new building or a building undergoes major renovations, as set out in Directive 2002/91/EC, such competitively priced individual meters shall always be provided.

2. Member States shall ensure that, where appropriate, billing performed by energy distributors, distribution system operators and retail energy sales companies is based on actual energy consumption, and is presented in clear and understandable terms. Appropriate information shall be made available with the bill to provide final customers with a comprehensive account of current energy costs. Billing on the basis of actual consumption shall be performed frequently enough to enable customers to regulate their own energy consumption.

3. Member States shall ensure that, where appropriate, the following information is made available to final customers in clear and understandable terms by energy distributors, distribution system operators or retail energy sales companies in or with their bills, contracts, transactions, and/or 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) wherever possible and useful, comparisons with an average normalised or benchmarked user of energy in the same user category;
- (d) contact information for consumers' 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/or objective technical specifications for energy-using equipment.

CHAPTER IV

FINAL PROVISIONS*Article 14***Reports**

1. Member States that already use, for whatever purpose, calculation methods for measuring energy savings similar to those described in Annex IV at the time of the entry into force of this Directive may submit information at the appropriate level of detail to the Commission. Such submissions shall take place as soon as possible, preferably not later than 17 November 2006. This information will enable the Commission to take due account of existing practices.

⁽¹⁾ OJ L 1, 4.1.2003, p. 65.

2. Member States shall submit to the Commission the following EEAPs:

- a first EEAP not later than 30 June 2007;
- a second EEAP not later than 30 June 2011;
- a third EEAP not later than 30 June 2014.

All EEAPs shall describe the energy efficiency improvement measures planned to reach the targets set out in Article 4(1) and (2), as well as to comply with the provisions on the exemplary role of the public sector and provision of information and advice to final customers set out in Articles 5(1) and 7(2) respectively.

The second and third EEAPs shall:

- include a thorough analysis and evaluation of the preceding EEAP;
- include the final results with regard to the fulfilment of the energy savings targets set out in Article 4(1) and (2);
- include plans for — and information on the anticipated effects of — additional measures which address any existing or expected shortfall vis-à-vis the target;
- in accordance with Article 15(4), use and gradually increase the use of harmonised efficiency indicators and benchmarks, both for the evaluation of past measures and estimated effects of planned future measures;
- be based on available data, supplemented with estimates.

3. Not later than 17 May 2008, the Commission shall publish a cost/benefit impact assessment examining the linkages between EU standards, regulations, policies and measures on end-use energy efficiency.

4. The EEAPs shall be assessed in accordance with the procedure referred to in Article 16(2):

- the first EEAPs shall be reviewed before 1 January 2008;
- the second EEAPs shall be reviewed before 1 January 2012;
- the third EEAPs shall be reviewed before 1 January 2015.

5. On the basis of the EEAPs, the Commission shall assess the extent to which Member States have made progress towards achieving their national indicative energy savings targets. The Commission shall publish reports with its conclusions:

- on the first EEAPs before 1 January 2008;
- on the second EEAPs before 1 January 2012;
- on the third EEAPs before 1 January 2015.

These reports shall include information on related action at Community level, including legislation currently in force and future legislation. The reports shall take into account the benchmarking system referred to in Article 15(4), identify best practices, identify cases where Member States and/or the Commission are not making enough progress, and may contain recommendations.

The second report shall be followed, as appropriate and where necessary, by proposals to the European Parliament and to the Council for additional measures including a possible extension of the period of application of targets. If the report concludes that insufficient progress has been made towards achieving the national indicative targets, these proposals shall address the level and nature of the targets.

Article 15

Review and adaptation of the framework

1. The values and calculation methods referred to in Annexes II, III, IV and V shall be adapted to technical progress in accordance with the procedure referred to in Article 16(2).

2. Before 1 January 2008, the Commission, in accordance with the procedure referred to in Article 16(2), shall further refine and complement as required points 2 to 6 of Annex IV, whilst respecting the general framework set out in Annex IV.

3. Before 1 January 2012, the Commission, in accordance with the procedure referred to in Article 16(2), shall raise the percentage of harmonised bottom-up calculations used in the harmonised calculation model referred to in point 1 of Annex IV, without prejudice to those Member State schemes that already use a higher percentage. The new harmonised calculation model with a significantly higher percentage of bottom-up calculations shall first be used as from 1 January 2012.

Wherever practicable and possible, the measurement of total savings over the total period of application of the Directive shall use this harmonised calculation model, without prejudice to those Member State schemes that use a higher percentage of bottom-up calculations.

4. Not later than 30 June 2008, the Commission, in accordance with the procedure set out in Article 16(2), shall develop a set of harmonised energy efficiency indicators and benchmarks based upon them, taking into account available data or data that can be collected in a cost-effective manner for each Member State. For the development of these harmonised energy efficiency indicators and benchmarks the Commission shall use as a reference guide the indicative list set out in Annex V. Member States shall gradually integrate these indicators and benchmarks into the statistical data included in their EEAPs as referred to in Article 14, and use them as one of the tools at their disposal to decide on future priority areas in the EEAPs.

Not later than 17 May 2011, the Commission shall present to the European Parliament and the Council a report on the progress in setting indicators and benchmarks.

Article 16

Committee

1. The Commission shall be assisted by a Committee.

2. Where reference is made to this paragraph, Articles 5 and 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.

The period laid down in Article 5(6) of Decision 1999/468/EC shall be set at three months.

3. The Committee shall adopt its rules of procedure.

Article 17

Repeal

Directive 93/76/EEC is hereby repealed.

Article 18

Transposition

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive not later than 17 May 2008, with the exception of the provisions of Article 14(1), (2) and (4), for which the date of transposition shall be, at the latest 17 May 2006. They shall forthwith inform the Commission thereof.

When Member States adopt these measures, they shall contain a reference to this Directive or shall be accompanied by such reference on the occasion of their official publication. The methods of making such reference shall be laid down by Member States.

2. Member States shall communicate to the Commission the text of the main provisions of national law which they adopt in the field covered by this Directive.

Article 19

Entry into force

This Directive shall enter into force on the 20th day following its publication in the *Official Journal of the European Union*.

Article 20

Addressees

This Directive is addressed to the Member States.

Done at Strasbourg, 5 April 2006.

For the European Parliament

The President

J. BORRELL FONTELLES

For the Council

The President

H. WINKLER

ANNEX I

Methodology for calculating the national indicative energy savings target

The methodology used for calculating the national indicative energy savings target set out in Article 4 shall be the following:

1. Member States shall use the annual final inland energy consumption of all energy users within the scope of this Directive for the most recent five-year period previous to the implementation of this Directive for which official data are available, to calculate an annual average amount of consumption. This final energy consumption shall be the amount of energy distributed or sold to final customers during the five-year period, not adjusted for degree days, structural changes or production changes.

On the basis of this annual average amount of consumption, the national indicative energy savings target shall be calculated once and the resulting absolute amount of energy to be saved applied for the total duration of this Directive.

The national indicative energy savings target shall:

- (a) consist of 9 % of the annual average amount of consumption referred to above;
- (b) be measured after the ninth year of application of this Directive;
- (c) be the result of cumulative annual energy savings achieved throughout the nine-year application period of this Directive;
- (d) be reached by way of energy services and other energy efficiency improvement measures.

This methodology for measuring energy savings ensures that the total energy savings prescribed by this Directive are a fixed amount, and thus independent of future GDP growth and of any future increase in energy consumption.

2. The national indicative energy savings target shall be expressed in absolute terms in GWh, or equivalent, calculated in accordance with Annex II.
3. Energy savings in a particular year following the entry into force of this Directive that result from energy efficiency improvement measures initiated in a previous year not earlier than 1995 and that have a lasting effect may be taken into account in the calculation of the annual energy savings. In certain cases, where circumstances can justify it, measures initiated before 1995 but not earlier than 1991 may be taken into account. Measures of a technological nature should either have been updated to take account of technological progress, or be assessed in relation to the benchmark for such measures. The Commission shall provide guidelines on how the effect of all such energy efficiency improving measures should be measured or estimated, based, wherever possible, on existing Community legislation, such as Directive 2004/8/EC of the European Parliament and of the Council of 11 February 2004 on the promotion of cogeneration based on a useful heat demand in the internal energy market ⁽¹⁾ and Directive 2002/91/EC.

In all cases, the resulting energy savings must still be verifiable and measurable or estimable, in accordance with the general framework in Annex IV.

⁽¹⁾ OJ L 52, 21.2.2004, p. 50.

ANNEX II

Energy content of selected fuels for end use — conversion table ⁽¹⁾

Energy commodity	kJ (NCV)	kgoe (NCV)	kWh (NCV)
1 kg coke	28 500	0,676	7,917
1 kg hard coal	17 200 — 30 700	0,411 — 0,733	4,778 — 8,528
1 kg brown coal briquettes	20 000	0,478	5,556
1 kg black lignite	10 500 — 21 000	0,251 — 0,502	2,917 — 5,833
1 kg brown coal	5 600 — 10 500	0,134 — 0,251	1,556 — 2,917
1 kg oil shale	8 000 — 9 000	0,191 — 0,215	2,222 — 2,500
1 kg peat	7 800 — 13 800	0,186 — 0,330	2,167 — 3,833
1 kg peat briquettes	16 000 — 16 800	0,382 — 0,401	4,444 — 4,667
1 kg residual fuel oil (heavy oil)	40 000	0,955	11,111
1 kg light fuel oil	42 300	1,010	11,750
1 kg motor spirit (petrol)	44 000	1,051	12,222
1 kg paraffin	40 000	0,955	11,111
1 kg liquefied petroleum gas	46 000	1,099	12,778
1 kg natural gas ⁽¹⁾	47 200	1,126	13,10
1 kg liquefied natural gas	45 190	1,079	12,553
1 kg wood (25 % humidity) ⁽²⁾	13 800	0,330	3,833
1 kg pellets/wood bricks	16 800	0,401	4,667
1 kg waste	7 400 — 10 700	0,177 — 0,256	2,056 — 2,972
1 MJ derived heat	1 000	0,024	0,278
1 kWh electrical energy	3 600	0,086	1 ⁽³⁾

Source: Eurostat.

⁽¹⁾ 93 % methane.

⁽²⁾ Member States may apply other values depending on the type of wood most used in the respective Member State.

⁽³⁾ For savings in kWh electricity Member States may apply a default co-efficient of 2,5 reflecting the estimated 40 % average EU generation efficiency during the target period. Member States may apply a different co-efficient provided they can justify it.

⁽¹⁾ Member States may apply different conversion factors if these can be justified.

ANNEX III

Indicative list of examples of eligible energy efficiency improvement measures

This Annex provides examples of areas in which energy efficiency improvement programmes and other energy efficiency improvement measures may be developed and implemented in the context of Article 4.

To be taken into account, these energy efficiency improvement measures must result in energy savings that can be clearly measured and verified or estimated in accordance with the guidelines in Annex IV, and their impacts on energy savings must not already be counted in other specific measures. The following lists are not exhaustive but are intended to provide guidance.

Examples of eligible energy efficiency improvement measures:

Residential and tertiary sectors

- (a) heating and cooling (e.g. heat pumps, new efficient boilers, installation/efficient update of district heating/cooling systems);
- (b) insulation and ventilation (e.g. wall cavity and roof insulation, double/triple glazing of windows, passive heating and cooling);
- (c) hot water (e.g. installation of new devices, direct and efficient use in space heating, washing machines);
- (d) lighting (e.g. new efficient bulbs and ballasts, digital control systems, use of motion detectors for lighting systems in commercial buildings);
- (e) cooking and refrigeration (e.g. new efficient devices, heat recovery systems);
- (f) other equipment and appliances (e.g. combined heat and power appliances, new efficient devices, time control for optimised energy use, stand-by loss reduction, installation of capacitors to reduce reactive power, transformers with low losses);
- (g) domestic generation of renewable energy sources, whereby the amount of purchased energy is reduced (e.g. solar thermal applications, domestic hot water, solar-assisted space heating and cooling);

Industry sector

- (h) product manufacturing processes (e.g. more efficient use of compressed air, condensate and switches and valves, use of automatic and integrated systems, efficient stand-by modes);
- (i) motors and drives (e.g. increase in the use of electronic controls, variable speed drives, integrated application programming, frequency conversion, electrical motor with high efficiency);
- (j) fans, variable speed drives and ventilation (e.g. new devices/systems, use of natural ventilation);
- (k) demand response management (e.g. load management, peak shaving control systems);
- (l) high-efficiency cogeneration (e.g. combined heat and power appliances);

Transport sector

- (m) mode of travel used (e.g. promotion of energy-efficient vehicles, energy-efficient use of vehicles including tyre pressure adjustment schemes, energy efficiency devices and add-on devices for vehicles, fuel additives which improve energy efficiency, high-lubricity oils and low-resistance tyres);

- (n) modal shifts of travel (e.g. car free home/office transportation arrangements, car sharing, modal shifts from more energy-consuming modes of transport to less energy-consuming ones, per passenger-km or tonne-km);
- (o) car-free days;

Cross-sectoral measures

- (p) standards and norms that aim primarily at improving the energy efficiency of products and services, including buildings;
- (q) energy labelling schemes;
- (r) metering, intelligent metering systems such as individual metering instruments managed by remote, and informative billing;
- (s) training and education that lead to application of energy-efficient technology and/or techniques;

Horizontal measures

- (t) regulations, taxes etc. that have the effect of reducing energy end-use consumption;
 - (u) focused information campaigns that promote energy efficiency improvement and energy efficiency improvement measures.
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ANNEX IV

General framework for measurement and verification of energy savings**1. Energy savings measurements and calculations and their normalisation****1.1. Measuring energy savings****General**

In measuring the realised energy savings as set out in Article 4 with a view to capturing the overall improvement in energy efficiency and to ascertaining the impact of individual measures, a harmonised calculation model which uses a combination of top-down and bottom-up calculation methods shall be used to measure the annual improvements in energy efficiency for the EEAPs referred to in Article 14.

In developing the harmonised calculation model in accordance with Article 15(2), the Committee shall aim to use, to the extent possible, data which are already routinely provided by Eurostat and/or the national statistical agencies.

Top-down calculations

A top-down calculation method means that the amount of energy savings is calculated using the national or larger-scale aggregated sectoral levels of energy savings as the starting point. Adjustments of the annual data are then made for extraneous factors such as degree days, structural changes, product mix, etc. to derive a measure that gives a fair indication of total energy efficiency improvement, as described in point 1.2. This method does not provide exact measurements at a detailed level nor does it show cause and effect relationships between measures and their resulting energy savings. However, it is usually simpler and less costly and is often referred to as 'energy efficiency indicators' because it gives an indication of developments.

In developing the top-down calculation method used in this harmonised calculation model, the Committee shall base its work, to the extent possible, on existing methodologies such as the ODEX model ⁽¹⁾.

Bottom-up calculations

A bottom-up calculation method means that energy savings obtained through the implementation of a specific energy efficiency improvement measure are measured in kilowatt-hours (kWh), in Joules (J) or in kilogram oil equivalent (kgoe) and added to energy savings results from other specific energy efficiency improvement measures. The authorities or agencies referred to in Article 4(4) will ensure that double counting of energy savings, which results from a combination of energy efficiency improvement measures (including mechanisms), is avoided. For the bottom-up calculation method, data and methods referred to in points 2.1 and 2.2 may be used.

Before 1 January 2008, the Commission shall develop a harmonised bottom-up model. This model shall cover a level between 20 and 30 % of the annual final inland energy consumption for sectors falling within the scope of this Directive, subject to due consideration of the factors referred to in points (a), (b) and (c) below.

Until 1 January 2012, the Commission shall continue to develop this harmonised bottom-up model, which shall cover a significantly higher level of the annual final inland energy consumption for sectors falling within the scope of this Directive, subject to due consideration of the factors referred to in points (a), (b) and (c) below.

⁽¹⁾ ODYSSEE-MURE Project, SAVE Programme. Commission 2005.

In the development of the harmonised bottom-up model, the Commission shall take the following factors into account and justify its decision accordingly:

- (a) experience with the harmonised calculation model during its first years of application;
- (b) expected potential increase in accuracy as a result of a larger share of bottom-up calculations;
- (c) estimated potential added cost and/or administrative burden.

In developing this harmonised bottom-up model in accordance with Article 15(2), the Committee shall aim to use standardised methods which entail a minimum of administrative burden and cost, notably by using the measurement methods referred to in points 2.1 and 2.2 and by focusing on those sectors where the harmonised bottom-up model can be most cost efficiently applied.

Member States that so wish may use further bottom-up measurements in addition to the part prescribed by the harmonised bottom-up model subject to the agreement of the Commission, in accordance with the procedure referred to in Article 16(2), on the basis of a description of the methodology presented by the Member State concerned.

If bottom-up calculations are not available for certain sectors, top-down indicators or mixtures of top-down and bottom-up calculations shall be used in the reports to the Commission, subject to the agreement of the Commission, in accordance with the procedure referred to in Article 16(2). In particular, when assessing requests to this effect within the context of the first EEAP described in Article 14(2), the Commission shall demonstrate the appropriate flexibility. Some top-down calculations will be necessary to measure the impact of measures implemented after 1995 (and in certain cases as early as 1991) that continue to have impact.

1.2. *How energy savings measurements should be normalised*

Energy savings shall be determined by measuring and/or estimating consumption, before and after the implementation of the measure, while ensuring adjustment and normalisation for external conditions commonly affecting energy use. Conditions commonly affecting energy use may also differ over time. Such conditions may be the likely impact of one or several plausible factors, such as:

- (a) weather conditions, such as degree days;
- (b) occupancy levels;
- (c) opening hours for non-domestic buildings;
- (d) installed equipment intensity (plant throughput); product mix;
- (e) plant throughput, level of production, volume or added value, including changes in GDP level;
- (f) schedules for installation and vehicles;
- (g) relationship with other units.

2. **Data and methods that may be used (measurability)**

Several methods for collecting data to measure and/or estimate energy savings exist. At the time of the evaluation of an energy service or energy efficiency improvement measure, it will often be impossible to rely only on measurements. A distinction is therefore made between methods measuring energy savings and methods estimating energy savings, where the latter is the more common practice.

2.1. *Data and methods based on measurements*

Bills from distribution companies or retailers

Metered energy bills may form the basis for measurement for a representative period before the introduction of the energy efficiency improvement measure. These may then be compared to metered bills for the period after the introduction and use of the measure, also for a representative period of time. The findings should be compared to a control group (non-participation group) if possible or, alternatively, normalised as described in point 1.2.

Energy sales data

The consumption of different types of energy (e.g. electricity, gas, heating oil) may be measured by comparing the sales data from the retailer or distributor obtained before the introduction of the energy efficiency improvement measures with the sales data from the time after the measure. A control group may be used or the data normalised.

Equipment and appliance sales data

Performance of equipment and appliances may be calculated on the basis of information obtained directly from the manufacturer. Data on equipment and appliance sales can generally be obtained from the retailers. Special surveys and measurements may also be carried out. The accessible data can be checked against sales figures to determine the size of energy savings. When using this method, adjustment should be made for changes in the use of the equipment or appliance.

End-use load data

Energy use of a building or facility can be fully monitored to record energy demand before and after the introduction of an energy efficiency improvement measure. Important relevant factors (e.g. production process, special equipment, heating installations) may be metered more closely.

2.2. *Data and methods based on estimates*

Simple engineering estimated data: Non-inspection

Simple engineering estimated data calculation without on-site inspection is the most common method for obtaining data for measuring deemed energy savings. Data may be estimated using engineering principles, without using on-site data, but with assumptions based on equipment specifications, performance characteristics, operation profiles of measures installed and statistics, etc.

Enhanced engineering estimated data: Inspection

Energy data may be calculated on the basis of information obtained by an external expert during an audit of, or other type of visit to, one or several targeted sites. On this basis, more sophisticated algorithms/simulation models could be developed and be applied to a larger population of sites (e.g. buildings, facilities, vehicles). This type of measurement can often be used to complement and calibrate simple engineering estimated data.

3. **How to deal with uncertainty**

All the methods listed in point 2 may entail some degree of uncertainty. Uncertainty may derive from ⁽¹⁾:

- (a) instrumentation errors: these typically occur because of errors in specifications given by the product manufacturer;

⁽¹⁾ A model for establishing a level of quantifiable uncertainty based on these three errors is given in Appendix B in the International Performance Measurement & Verification Protocol (IPMVP).

- (b) modelling errors: these typically refer to errors in the model used to estimate parameters for the data collected;
- (c) sampling errors: these typically refer to errors resulting from the fact that a sample of units was observed rather than the entire set of units under study.

Uncertainty may also derive from planned and unplanned assumptions; these are typically associated with estimates, stipulations and/or the use of engineering data. The occurrence of errors is also related to the chosen system of data collection that is outlined in points 2.1 and 2.2. A further specification of uncertainty is advised.

Member States may choose to use the method of quantified uncertainty when reporting on the targets set out in this Directive. Quantified uncertainty shall then be expressed in a statistically meaningful way, declaring both accuracy and confidence level. For example, 'the quantifiable error is found with 90 % confidence to be ± 20 %'.

If the method of quantified uncertainty is used, Member States are also to take into account that the acceptable level of uncertainty required in energy savings calculations is a function of the level of savings and the cost-effectiveness of decreasing uncertainty.

4. **Harmonised lifetimes of energy efficiency improvement measures in bottom-up calculations**

Some energy efficiency improvement measures last for decades while other measures last for a shorter period of time. The list below gives some examples of the average lifetime of energy efficiency improvement measures:

Loft insulation of private dwellings	30 years
Cavity wall insulation of private dwellings	40 years
Glazing E to C rated (in m ²)	20 years
Boilers B to A rated	15 years
Heating controls — upgrade with boiler replacement	15 years
CFLs — retail	16 years

Source: Energy Efficiency Commitment 2005 — 2008, UK

To ensure that all Member States apply the same lifetimes for similar measures, these lifetimes will be harmonised on a European level. The Commission, assisted by the Committee established under Article 16, shall therefore replace the above list with an agreed preliminary list of the average lifetime of different energy efficiency improvement measures not later than 17 November 2006.

5. **How to deal with multiplier effects of energy savings and how to avoid double counting in mixed top-down and bottom-up calculation methods**

The implementation of one energy efficiency improvement measure, e.g. hot water tank and pipe insulation in a building, or another measure with equivalent effect, may have future multiplier effects in the market, meaning that the market will implement a measure automatically without any further involvement from the authorities or agencies referred to in Article 4(4) or any private-sector energy services provider. A measure with multiplier potential would in most cases be more cost-effective than measures that need to be repeated on a regular basis. Member States shall estimate the energy savings potential of such measures including their multiplier effects and verify the total effects in an ex-post evaluation using indicators when appropriate.

With regard to the evaluation of horizontal measures, energy efficiency indicators may be used, provided that the way in which they would have developed without the horizontal measures can be determined. However, it must be possible to rule out, as far as possible, double counting with savings achieved through targeted energy efficiency programmes, energy services and other policy instruments. This applies particularly to energy or CO₂ taxes and information campaigns.

Corrections shall be made for double counting of energy savings. The use of matrices that enable the summation of impacts of measures is encouraged.

Potential energy savings resulting after the target period shall not be taken into account when Member States report on the overall target set out in Article 4. Measures that promote long-term market effects should in any case be encouraged and measures that have already resulted in multiplier energy savings effects should be taken into account when reporting on the targets set out in Article 4, provided they can be measured and verified using the guidance given in this Annex.

6. How to verify energy savings

If deemed cost-effective and necessary, the energy savings obtained through a specific energy service or other energy efficiency improvement measure shall be verified by a third party. This may be done by independent consultants, ESCOs or other market actors. The appropriate Member State authorities or agencies referred to in Article 4(4) may provide further instructions on this matter.

Sources: A European Ex-post Evaluation Guidebook for DSM and EE Service Programmes; IEA, INDEEP database; IPMVP, Volume 1 (Version March 2002).

ANNEX V

Indicative list of energy conversion markets and sub-markets for which benchmarks can be worked out:

1. The market for household appliances/information technology and lighting:
 - 1.1. Kitchen appliances (white goods);
 - 1.2. Entertainment/information technology;
 - 1.3. Lighting.
 2. The market for domestic heating technology:
 - 2.1. Heating;
 - 2.2. Hot-water provision;
 - 2.3. Air conditioning;
 - 2.4. Ventilation;
 - 2.5. Heat insulation;
 - 2.6. Windows.
 3. The market for industrial ovens.
 4. The market for motorised power in industry.
 5. The market for public-sector institutions:
 - 5.1. Schools/public administration;
 - 5.2. Hospitals;
 - 5.3. Swimming pools;
 - 5.4. Street lighting.
 6. The market for transport services.
-

ANNEX VI

List of eligible energy efficient public procurement measures

Without prejudice to national and Community public procurement legislation, Member States shall ensure that the public sector applies at least two requirements from the following list in the context of the exemplary role of the public sector as referred to in Article 5:

- (a) requirements concerning the use of financial instruments for energy savings, including energy performance contracting, that stipulate the delivery of measurable and pre-determined energy savings (including whenever public administrations have outsourced responsibilities);
 - (b) requirements to purchase equipment and vehicles based on lists of energy-efficient product specifications of different categories of equipment and vehicles to be drawn up by the authorities or agencies referred to in Article 4(4), using, where applicable, minimised life-cycle cost analysis or comparable methods to ensure cost-effectiveness;
 - (c) requirements to purchase equipment that has efficient energy consumption in all modes, including in standby mode, using, where applicable, minimised life-cycle cost analysis or comparable methods to ensure cost-effectiveness;
 - (d) requirements to replace or retrofit existing equipment and vehicles with the equipment listed in points (b) and (c);
 - (e) requirements to use energy audits and implement the resulting cost-effective recommendations;
 - (f) requirements to purchase or rent energy-efficient buildings or parts thereof, or requirements to replace or retrofit purchased or rented buildings or parts thereof in order to render them more energy-efficient.
-