

COMMISSION

COMMISSION RECOMMENDATION

of 15 January 2003

on the guidelines to assist a Member State in the preparation of a national emission reduction plan further to the provisions of Directive 2001/80/EC on the limitation of emissions of certain pollutants into the air from large combustion plants

(notified under document number C(2003) 9)

(Text with EEA relevance)

(2003/47/EC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to Directive 2001/80/EC of the European Parliament and of the Council of 23 October 2001 on the limitation of emissions of certain pollutants into the air from large combustion plants⁽¹⁾ and, in particular, Article 4(6) fifth subparagraph (d) thereof,

Whereas:

- (1) Under Directive 2001/80/EC, Member States are required to reduce emissions from existing large combustion plants commencing no later than 1 January 2008.
- (2) The Directive provides two options to reduce emissions from existing plants, either by the application of specified emission limit values or through the implementation of a national emission reduction plan for such plants.

- (3) The Commission is requested to develop guidelines to assist any Member State that chooses the option of a national emission reduction plan to prepare such a plan,

HEREBY RECOMMENDS:

1. A Member State that chooses the option of a national emission reduction plan as a means of applying the requirements of Directive 2001/80/EC to existing plants under Article 4(6) of the Directive should take into account the guidance provided in the Annex to this Recommendation.
2. This Recommendation is addressed to the Member States.

Done at Brussels, 15 January 2003.

For the Commission
Margot WALLSTRÖM
Member of the Commission

⁽¹⁾ OJ L 309, 27.11.2001, p. 1.

ANNEX

1. INTRODUCTION

Further to Article 4(3) of Directive 2001/80/EC Member States are required to achieve significant emission reductions from existing plants by 1 January 2008 at the latest by either of the following two compliance options identified in Article 4(3):

- Option 1: *Compliance with the emission limit values (ELVs)*. Under this approach, compliance with the new directive will be achieved if the operation of all existing plants is within the emission limit values (ELVs) stated in Part A of Annexes III to VII in respect of SO₂, NO_x and dust, and, where appropriate, applying Articles 5, 7 and 8 of Directive 2001/80/EC.
- Option 2: *Implementation of a national emission reduction plan*. As an alternative to the ELV approach, Member States can implement a national emission reduction plan referred to in Article 4(6). The plan 'shall reduce the total annual emissions of nitrogen oxides (NO_x), sulphur dioxide (SO₂) and dust from existing plants to the levels that would have been achieved by applying the emission limit values ... to the existing plants in operation in the year 2000, ... on the basis of each plant's actual annual operating time, fuel used and thermal input, averaged over the last five years of operation up to and including 2000'. In addition, 'The closure of a plant included in the national emission reduction plan shall not result in an increase in the total annual emissions from the remaining plants covered by the plan.' Furthermore, a plan 'shall comprise objectives and related targets, measures and timetables for reaching these objectives and targets, and a monitoring mechanism.'

Existing plants may be exempt from the ELVs specified in Directive 2001/80/EC or from inclusion in a national emission reduction plan if they opt for the limited operating life derogation (Article 4(4)). This derogation will apply if 'the operator of an existing plant undertakes, in a written declaration submitted by 30 June 2004 at the latest to the competent authority, not to operate the plant for more than 20 000 operational hours starting from 1 January 2008 and ending no later than 31 December 2015'.

Further to Article 4(6), fifth subparagraph (d), of the Directive the Commission is requested to develop guidance to assist any Member State that chooses the national emission reduction plan option.

1.1. Relationship between the national emission reduction plan under the new LCPD and other key policies

A Member State preparing a national emission reduction plan under Directive 2001/80/EC should also take into account obligations under other Community legislation, notably the IPPC Directive (Council Directive 96/61/EC (OJ L 257, 10.10.1996, p. 26)). Directive 2001/80/EC specifically states that 'The national emission reduction plan may under no circumstances exempt a plant from the provisions laid down in relevant Community legislation, *inter alia* Directive 96/61/EC.' Under Article 5 of the IPPC Directive, existing installations will have to comply with the requirements of that Directive by 30 October 2007.

1.2. Profile of existing combustion plants in a hypothetical Member State

A Member State that chooses to prepare a national emission reduction plan should compile a list of the plants to be included in the plan along with data on fuels used, operating characteristics and circumstances. This data should be compiled and presented as shown in table A.1 in Appendix A. Some data may need to be derived by calculation (e.g. annual average waste gas flow). Key data for each of the plants should include:

- fuel types,
- capacity of plant,
- annual operating time (where low operating time derogations are relevant),
- latest annual emissions of SO₂, NO_x and dust (not mandatory but useful to help identify compliance measures),
- annual average unabated emissions of SO₂ from 1996 to 2000 (where the desulphurisation rate approach is used to calculate plant contribution to emission targets), and
- annual average waste gas flow rate from 1996 to 2000 (used to calculate the plant contribution to emission targets, except where the desulphurisation rate approach is used).

2. DETERMINATION OF OBJECTIVES OF A NATIONAL EMISSION REDUCTION PLAN

The objectives of a national emission reduction plan will comprise total emission targets for SO₂, NO_x and dust. The emissions from all combustion plants as a whole that are included within the plan must be below the targets within the relevant compliance time scales.

Emission targets must be calculated for a Member State, based on the contributions from each individual plant as shown in table A.2 of the Appendix.

2.1. Individual plant contributions to total emission targets

In accordance with the requirements of Article 4(6), each plant's contribution to SO₂, NO_x and dust emission targets can be calculated using the following equation:

$$\text{Plant contribution to target (tpa)} = \text{Waste gas flow rate (Nm}^3\text{pa)} \times \text{ELV (mg/Nm}^3\text{)} \times 1,0 \times 10^{-9}$$

Where:

- waste gas flow rate is the volumetric flow rate of waste gases shown in the table in the guidance document in million cubic metres per annum, averaged over the last five years of operation up to and including 2000. It is expressed at standard temperature (273 K) and pressure (101,3 kPa), at the relevant oxygen reference conditions and after correction for the water vapour content,
- ELV is the emission limit value expressed in mg/Nm³, assuming an oxygen content by volume in the waste gas of 3 % in the case of liquid and gaseous fuels and 6 % in the case of solid fuels,
- Tpa = tonnes per annum

The above equation will apply in all cases except where the desulphurisation rate approach for SO₂ may apply (refer to Annex III of the directive, Nota Bene in Part A). In such cases, a plant's contribution to the SO₂ emission target can be calculated using the following equation:

$$\text{Plant contribution to target (tpa)} = \text{Unabated SO}_2 \text{ emissions (tpa)} \times (1 - (\text{desulphurisation rate \%}/100))$$

Where:

- unabated SO₂ emissions represent the annual emissions of SO₂, averaged over the last five years of operation up to and including 2000, expressed in tonnes per annum, as determined prior to any abatement in desulphurisation plant (including retention of sulphur within the plant and ash), and
- desulphurisation rate is the rate of desulphurisation as defined in Article 2(4) of the Directive.

2.2. Compliance timetable

The provisions of the directive include more stringent emission limit values (ELVs) applicable from 2016 and 2018. Therefore there are three compliance periods, namely:

- 1 January 2008 to 31 December 2015 (the ELVs apply in general from 1 January 2008),
- 1 January 2016 to 31 December 2017 (from 1 January 2016 the more stringent NO_x ELV for solid fuel plants >500MWh applies and more stringent NO_x and SO₂ ELV derogations for low operating hours solid fuel plants apply), and
- 1 January 2018 onwards (from 1 January 2018 the NO_x ELV derogation for plants using solid fuels whose volatile content < 10 % expires).

2.3. Total emission targets

The size of the total emission targets for SO₂, NO_x and dust can be determined by adding up the individual plant contributions to the respective emission targets:

$$\text{Member State emission target (tpa)} = \Sigma (\text{individual plant contribution to target})$$

Potential changes to the emission targets, in comparison to the targets in the Member State's national emission reduction plan submitted to the Commission by 27 November 2003, could relate to:

- the NO_x low load factor derogation for solid fuel plants > 500MWth. This is based on the five year annual average operating time from 2008 onwards. Member States would be expected to nominate specific plants in their plan that will avail of this provision in the plan that is communicated to the Commission. Such nominations could, however, subject to the approval of the competent authority, change during the implementation of the plan so long as compensating measures that are consistent with the Directive and that deliver the same overall emission target are implemented,
- the limited life derogation. Operators have until 30 June 2004 to notify the competent authority if they seek to be exempt from inclusion within the plan by opting for the limited operating life derogation (Article 4(4)). In the case where an operator decides to opt for the limited operating life derogation after their Member State's communication to the Commission but before 30 June 2004, the Member States should submit any necessary amendment to the plan.

3. MEASURES TO COMPLY WITH OBJECTIVES

Member States should describe the measures envisaged to deliver the necessary emission reductions to comply with Directive 2001/80/EC under a national emission reduction plan.

Firstly, the minimum emissions reductions required to comply with the targets should be calculated, by subtracting the annual emission targets from the latest annual emissions as shown in table 1 overleaf.

Table 1

Determination of emission reductions to comply with emission targets for a hypothetical Member State

Parameter	Compliance period	Emissions (tonnes per annum)		
		SO ₂	NO _x	Dust
Latest emissions of plants in the national emission reduction plan (see table A.1 in Annex)	Not relevant	465 402	129 964	15 186
Minimum annual emissions reductions compared to latest emissions to comply with emission targets	1 January 2008 to 31 December 2015	312 936	2 894	3 147
	1 January 2016 to 31 December 2017	316 449	34 983	3 147
	1 January 2018 onwards	316 449	52 060	3 147
Emission targets (see table A.2 in Annex)	1 January 2008 to 31 December 2015	152 466	127 070	12 039
	1 January 2016 to 31 December 2017	148 953	94 981	12 039
	1 January 2018 onwards	148 953	77 905	12 039

Note: Numbers in the table above are for illustration purposes only.

Secondly, after calculating the minimum required emissions reductions and the emission targets that must be respected, measures that would achieve these reductions should be identified. For example, compliance with the plan can be achieved by fuel switching, combustion modifications, abatement techniques, load factor management, etc. The process of determining the actual compliance measures will be a matter for individual Member States, taking into account, for example, cost-effectiveness, practicability, impact on security and diversity of their energy supplies, obligations under other Community legislation and other relevant constraints.

An example of measures that would enable compliance with the targets is presented in table A.3 in the Appendix. The measures listed in the table and communicated to the Commission in the National Emission Reduction Plan do not preclude other measures that are consistent with the directive from being implemented, subject to the approval of competent authorities and provided compliance with the targets for the Member State is achieved.

4. TIMETABLE

The timetable for a Member State choosing to pursue the National plan option with key dates is shown in table 2 below.

Table 2

Key milestones in implementing a national emission reduction plan under Directive 2001/80/EC

Key milestone	Action
By 27 November 2003	Member State to communicate national emission reduction plan to the Commission
Within six months of communication referred to above	The Commission shall evaluate whether or not the plan meets the requirements of Article 4(6) of the new LCPD. If the Commission considers that this is not the case, it shall inform the Member State and within the subsequent three months the Member State shall communicate any measures it has taken in order to ensure that the requirements are met
By 30 June 2004	If an operator of an existing plant seeks to be exempt from the ELVs or inclusion in a plan, the operator must submit a written declaration to the competent authority, not to operate the plant for more than 20 000 operational hours starting from 1 January 2008 and ending no later than 31 December 2015
1 January 2008	Start of compliance periods

5. MONITORING MECHANISM

5.1. Regulation by competent authorities

Commencing on 1 January 2008 a number of monitoring and reporting measures should be implemented, in particular:

- operators will be required to estimate total annual emissions of SO₂, NO_x and dust to the satisfaction of the competent authority; confirm applicability of the low operating time derogation for NO_x and report time used/unused for plants excluded under the limited life derogation,
- competent authorities will be required to verify operators' estimates of total annual emissions of SO₂, NO_x and dust for all plants included in the plan and compare these totals with the emission targets. They will be responsible for regulating those plants included in the plan to ensure that total annual emissions are below the emission targets. Furthermore, they should put a mechanism in place that allows any closures of plant included in the plan to be identified and they should ensure that any plant closures will not result in an increase in the total annual emissions from the remaining plants covered by the plan, and
- Member States should also ensure that there are mechanisms in place to approve any changes to the measures that were originally envisaged to comply with the emission reductions in the national emission reduction plan.

5.2. Reporting to the Commission

Obligations for reporting from a Member State to the Commission are set out in Annex VIII Section B of Directive 2001/80/EC. In addition, Member States may wish to, and would be recommended to, set up an annual national reporting system to confirm performance against the targets.

ILLUSTRATIVE TABLES SHOULD BE INCLUDED IN THE NATIONAL EMISSION REDUCTION PLAN ⁽¹⁾Table A.1 — Table presenting the profile of all existing combustion plants in operation in the year 2000 in a hypothetical Member State ⁽²⁾

A	B	C	D	E	F	G	H	I	J	K	L	M
Sector	Site	Fuel type	Capacity (MWth)	Plants included in national emission reduction plan	Annual average operating time from 1996 to 2000 (hours), where relevant	Annual average operating time from 2008 to 2015 (hours), where relevant	Annual average operating time from 2016 onwards (hours), where relevant	Annual emissions of SO ₂ in 2001	Annual emissions of NO _x in 2001 (tpa)	Annual emissions of dust in 2001 (tpa)	Annual average unabated emissions of SO ₂ from 1996 to 2000 (tpa), where relevant	Annual average waste gas flow from 1996 to 2000 (Million Nm ³ p.a.)
ESI	1	Solid (hard coal) (de-sulph rate option) (FGD installation started before 2001)	5 589	Yes	4 117			15 450	20 461	1 932	115 000	30 663
ESI	2	Multifuel (hard coal: HFO, 95:5)	5 539	Yes	3 419			90 263	19 099	2 996		25 237
Totals								465 402	129 964	15 186		

⁽¹⁾ Entries in the rows and columns of the tables in this Appendix are by way of example only.

⁽²⁾ The total emissions calculated in this table represent the latest annual emissions of SO₂, NO_x and dust a hypothetical Member State. By subtracting the annual emission targets from the total emissions in this table, the minimum annual emissions reductions to comply with the emission targets can be calculated and compared to latest emissions.

Table A.2 — Table presenting the determination of objectives of a national emission reduction plan for a hypothetical Member State ⁽¹⁾

A	B	C	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
Sector	Site	Fuel type	Contributions to emission targets (tpa)						SO ₂ ELV				NO _x ELV				Dust ELV	
			SO ₂ - from 2008 to 2015	SO ₂ - from 2016 onwards	NO _x - from 2008 to 2015	NO _x - from 2016 to 2017	NO _x - from 2018 onwards	Dust- from 2008 onwards	ELV from 2008 to 2015 (mg/Nm ³)	ELV from 2016 onwards (mg/Nm ³)	Target rate of desulphu- risation (%)	Ref	ELV from 2008 to 2015 (mg/Nm ³)	ELV from 2016 to 2017 (mg/Nm ³)	ELV from 2018 onwards (mg/Nm ³)	Ref	ELV from 2008 onwards (mg/Nm ³)	Ref.
ESI ⁽²⁾	1	solid (hard coal) (de- sulph rate option) (FGD before 2001)	9 200	9 200	15 332	6 133	6 133	1 533			92 %	Annex III A NB	500	200	200	Annex VI A	50	Annex VII A
ESI	2	Multifuel (hard coal: HFO, 95:5)	10 095	10 095	12 492	5 300	5 300	1 262	400	400		Article 8(1)	495	210	210	Article 8(1)	50	Article 8(1)
Totals			152 466	148 953	127 070	94 981	77 905	12 039										

⁽¹⁾ The total emission targets calculated in this table represent the limits of total annual emissions from existing plants included in the national emission reduction plan for the relevant compliance years. The competent authorities will be responsible for regulating those plants in the national plan to ensure that total emissions are within the emission targets.

⁽²⁾ Electricity Supply Industry.

Table A.3 — Table presenting emission reduction measures ⁽¹⁾ to comply with objectives ⁽²⁾

A	B	C	2008 to 2015 compliance period					2016 to 2017 compliance period						2018 onwards compliance period						
			Compliance measures	Reduction in emissions achieved by compliance measures compared to 2001 emissions (tpa)			Additional compliance measures	Reduction in emissions achieved by additional compliance measures compared to 2001 emissions (tpa)			Total reduction in emissions achieved by compliance measures compared to 2001 emissions (tpa)			Additional compliance measures	Reduction in emissions achieved by additional compliance measures compared to 2001 emissions (tpa)			Total reduction in emissions achieved by compliance measures compared to 2001 emissions (tpa)		
				SO ₂	NO _x	Dust		SO ₂	NO _x	Dust	SO ₂	NO _x	Dust		SO ₂	NO _x	Dust	SO ₂	NO _x	Dust
ESI	1	Solid (hard coal)	FGD (92 % desulphurisation rate, 50 % dust reduction)	106 214	0	966	SCR (80 % NO _x reduction)	16 369			106 214	16 369	966					106 214	16 369	966
ESI	2	Multifuel (hard coal: HFO)	FGD (94 % desulphurisation rate, 50 % dust reduction)	84 847	0	1 498	Reburn (50 % NO _x reduction)	9 550			84 847	9 550	1 498					84 847	9 550	1 498
1. Total reduction in emissions achieved by measures compared to 2001 emissions (tpa)				313 860	4 088	4 901		11 480	31 298	159	325 340	35 386	5 060		13 385	17 285	695	338 725	52 671	5 755
2. Minimum emission reductions required to comply with targets compared to 2001 emissions (tpa)				312 936	2 894	3 147					316 449	34 983	3 147					316 449	52 060	3 147

Sector	Site	Fuel type	2008 to 2015 compliance period			2016 to 2017 compliance period						2018 onwards compliance period								
			Compliance measures	Reduction in emissions achieved by compliance measures compared to 2001 emissions (tpa)			Additional compliance measures	Reduction in emissions achieved by additional compliance measures compared to 2001 emissions (tpa)			Total reduction in emissions achieved by compliance measures compared to 2001 emissions (tpa)			Additional compliance measures	Reduction in emissions achieved by additional compliance measures compared to 2001 emissions (tpa)			Total reduction in emissions achieved by compliance measures compared to 2001 emissions (tpa)		
				SO ₂	NO _x	Dust		SO ₂	NO _x	Dust	SO ₂	NO _x	Dust		SO ₂	NO _x	Dust	SO ₂	NO _x	Dust
3. Total emissions from existing plants after implementing measures (tpa)				151 542	125 877	10 285					140 061	94 579	10 125					126 677	77 294	9 430
4. Emission target (tpa)				152 466	127 070	12 039					148 953	94 981	12 039					148 953	77 905	12 039

(¹) Alternative measures that are consistent with the directive may be taken to reach the emission target, subject to the approval of competent authorities. For further information, see also the forthcoming BAT reference document on Large Combustion Plants (Internet: cf. <http://eippcb.jrc.es>).

(²) In the table above there are four sets of totals, as follows:

1. the total reduction in emissions achieved by the measures compared to latest emissions is the sum of reductions at each plant;
2. the minimum emission reductions to comply with targets compared to latest emissions are taken from table 1 in this Summary;
3. the total emissions after implementing measures equal the latest emissions minus the reduction in emissions achieved by measures; and
4. it can be seen that total emissions from existing plants will be in compliance with the targets after implementing the compliance measures.