

COMMISSION OF THE EUROPEAN COMMUNITIES

COM(81) 361 final

Brussels, 14 July 1981

Proposal for a

COUNCIL DECISION

establishing a reciprocal exchange of information
and data from networks and individual stations measuring
air pollution within the Member States

(submitted to the Council by the Commission)

COM(81) 361 final

EXPLANATORY MEMORANDUM

1. The object of this proposal is the establishment of a reciprocal exchange of information and data from networks and individual stations measuring air pollution within the member States.
2. This proposal is presented within the context of the Environmental action programmes of the European Communities which make provision for an exchange of information and data between air pollution monitoring and surveillance stations (1973 : Part II, Title I, Chapter 3, Section 1; 1977 : Title II, Chapter 3, Point 56d.).
3. Of the first-priority pollutants in the Environmental action programme (1973) the most extensively and systematically measured are sulphur dioxide and suspended particulates. Because there are so many stations a selection procedure was instituted as part of the common procedure for an exchange of information as established by Council Decision 75/441/EEC dated 24 June 1975. The selected stations, with a provision for replacing those that cease to operate, are transferred into the new reciprocal exchange in order to maintain continuity with the existing data.
4. Interest in, and the importance of, other first-priority air pollutants has increased and the present proposal contains provision for the specific inclusion of the following additional pollutants :
 - lead and other heavy-metal particulates,
 - nitrogen oxides (dioxide - NO_2 , total oxides - NO_x , monoxide - NO)

- carbon monoxide,
- ozone.

Other additional pollutants may be included subject to technical discussions.

5. It is not yet feasible to include two other first-priority pollutants which, although important to human health, pose specific problems of sampling and analysis.

There are many hydro-carbons but they can conveniently be divided into methane and non-methane, which latter includes some known or suspected carcinogens. The measurement techniques for methane are well-defined but as a pollutant it has little or no importance to human health. The non-methane hydro-carbons often occur in very minute quantities and in ratios that differ enormously with the source and location. A general technique for measuring these non-methane components is hardly practical since it is difficult, if not impossible, to examine the sensitivity to, and the interactions between, many hundred possible compounds. An effective measurement technique for one specific non-methane hydro-carbon can be, and has been, developed but the range of applicability is often only valid for that given source configuration or location for which it was devised.

Asbestos poses problems for human health and considerable problems as far as measurements are concerned. The only satisfactory method of identifying the various types of asbestos, and the levels of each one, is by means of sophisticated microscopy. Even when

highly automated this technique is very expensive, time-consuming and slow. At the present time, therefore, measurements are usually made on a discontinuous basis, at specific points and as part of a particular research project rather than as a part of a re-iterative monitoring programme in ambient air.

6. This proposal does not oblige the member States to create new stations; the choice of stations is to be made from those that are already in existence. Because the total number of stations measuring the additional pollutants is small the selection procedure used in the previous Decision is unsuitable. For the additional pollutants member States are, therefore, requested to select those stations which, in one way or another, are equipped to examine the differences in techniques of sampling and analysis, collectively known as measurement techniques. Wherever possible such selections should reflect the differences in urbanisation, topography and climatology that exist within each member State and, where there is a sufficient number of stations, the different levels of pollution.

7. One of the important aspects of this new proposal is the commitment by the Commission to intercomparison programmes with the cooperation of the interested member States. Such programmes are expensive to design and run; therefore it is appropriate to include existing stations which are already equipped for intercomparisons in order to reduce the costs. The exchange of reports, etc., from local or national programmes, with the Commission acting as the central distribution point, will provide a general view of existing work and

will serve as the basis for the further development of cost-effective programmes.

8. The Commission intends to examine the above-mentioned reports, etc., in conjunction with a group of experts selected, and convened by the Commission, from a list of those suggested by the member States. This 'ad hoc' group of experts should examine these reports and give technical guidance to the Commission on suitable intercomparison programmes and the contents thereof.

9. Apart from the intercomparison programmes which are the most important step towards harmonisation and comparability, the data from such a reciprocal exchange may be used :

- for the examination and selection of suitable areas/sites for epidemiological surveys,
- in the development of air quality standards,
- to follow the evolution of pollution patterns and trends, and
- as input to the Global Environmental Monitoring System of the United Nations Environmental Programme and other international cooperative programmes.

10. Although the data and information derived from this reciprocal exchange will be of considerable assistance in examining and defining proposals for air quality standards, the representativity of the stations selected will not allow monitoring for compliance with such a standard. Monitoring for compliance with standards requires that the stations are located at specific points where there is a likelihood

that the standard may be exceeded. Such points will have to be determined on the basis, not only of existing data for ambient levels but also on a knowledge of the emission patterns.

11. This Decision is based on Article 235 of the Treaty establishing the European Economic Community and thus consultation of the European Parliament is mandatory; the Commission recommends that the Economic and Social Committee be consulted.

PROPOSAL

Council Decision establishing a reciprocal exchange of information and data from networks and individual stations measuring air pollution within the Member States

The Council of the European Communities,

HAVING regard to the Treaty establishing the European Economic Community and in particular Article 235 thereof;

HAVING regard to the proposal from the Commission;

HAVING regard to the Opinion of the European Parliament (1);

HAVING regard to the Opinion of the Economic & Social Committee (2);

WHEREAS the Programme of action of the European Communities on the Environment (3) makes provision for the establishment of a procedure for the exchange of information between surveillance and monitoring networks;

WHEREAS this procedure is necessary to combat pollution and nuisances, this being one of the Community objectives concerning the improvement of the quality of life and the harmonious development of economic activities throughout the Community; whereas the specific powers necessary to this end are not provided by the Treaty;

1) to follow 2) to follow

3) OJ No C 112, 20.12.1973, p.3

WHEREAS a common procedure for the exchange of information between the surveillance and monitoring networks based on data relating to atmospheric pollution by sulphur compounds and suspended particulates has been established by Council Decision 75/441/EEC (4) which, amongst other things, has served as a pilot study for the elaboration of a system to answer the specific needs of the Community;

WHEREAS the accumulated experience of the pilot study is employed to establish a more complete exchange of information and data incorporating additional air pollutants thus stimulating and enhancing progress towards the harmonisation of the measurement methods;

WHEREAS the Commission will organise, in collaboration with interested Member States, intercomparison programmes to include, as appropriate, different equipment, methods of sampling and analysis as well as reference materials commonly used for the relevant pollutants so that the comparability of the data obtained by different stations and methods may be improved;

WHEREAS the use of homogeneous time-scales for the data collection and homogeneity in the presentation of results will facilitate the comparison of the levels recorded for each pollutant;

WHEREAS the exchange of the results of the pollution level measurements provides one way of keeping abreast of long-term trends and improvements resulting from existing and future national or Community legislation;

4) OJ No L 194, 25.7.1975, p.32

WHEREAS the results of such measurements constitute information relevant to determining the locations of epidemiological surveys destined to provide a better understanding of the harmful effects of air pollution on human health;

WHEREAS the transport of pollutants over long distances necessitates surveillance at regional, national, Community and global levels;

WHEREAS part of the information and data constitute an input to the Global Environmental Monitoring System which is part of the United Nations Environmental Programme,

HAS ADOPTED THIS DECISION :

ARTICLE 1.

A reciprocal exchange of information and data from networks and individual stations measuring air pollution, hereinafter referred to as "reciprocal exchange", is hereby established and shall apply to the individual measurements obtained by fixed stations which have been operating, or are planned to operate, continuously over a significant period of time.

ARTICLE 2.

1. This Decision relates to the following pollutants:
 - a) sulphur compounds measured as :
 - sulphur dioxide or
 - strong acidity in accordance with Annex I, paragraph 1,
 - b) suspended particulates, in accordance with Annex I, paragraph 1, measured as :
 - suspended particulate matter or
 - black smoke,
 - c) suspended particulates of heavy metals, e.g., lead, cadmium, etc.,
 - d) nitrogen oxides measured as :
 - nitrogen dioxide (NO₂) and
 - either total oxides of nitrogen (NO_x)
or nitrogen monoxide (NO),
 - e) carbon monoxide,
 - f) ozone.

2. The first data to be exchanged shall be:

- for the pollutants in paragraph 1, a) and b) : those obtained from 1 January 1979 in order to maintain continuity with the data collected previously,

- for the pollutants in paragraph 1, c) and d) : those obtained from 1 October 1980,

- for the pollutants in paragraph 1, e) and f) : those obtained from 1 October 1982.

3. Any Member State may include other pollutants after technical discussions with the Commission.

ARTICLE 3.

Each Member State shall designate a National Coordinator, and inform the Commission thereof, who will be the person, or body, responsible for the selection of stations, the collection and transmission of information and data relating to the stations and pollutants as well as for liaison with the Commission in all related aspects. Until the Commission is advised otherwise, the person or body designated by each Member State under the provisions of Article 4 (1) of Decision 75/441/EEC shall be deemed to be the National Coordinator.

ARTICLE 4.

1. The stations participating in the exchange of information procedure laid down in Decision 75/441/EEC shall be included in this reciprocal exchange. Member States shall select from the available stations those which are to be added under the terms of this reciprocal exchange and shall notify their choice to the Commission. Each selected station shall be representative, as far as possible, of the conditions obtaining around that sampling point for the pollutant being considered.
2. In selecting stations, priority shall be given to those which utilise more than one sampling or analytical technique to measure a given pollutant so as to assist in the assessment of appropriate techniques and the comparability between them.
3. The selected stations should reflect, as appropriate and where possible, the different types of urbanisation, topography and climatology, as well as the different pollution levels, prevailing upon the territory of the Member State concerned.
4. Where a station selected under the provisions of Decision 75/441/EEC has ceased, or ceases to operate, the Member State concerned should endeavour to select another suitable station and, where available, provide the relevant data for at least the two preceding years.

5. All stations and pollutants which are added to this reciprocal exchange, any changes in the measurement techniques utilised and any other relevant changes shall be notified to the Commission by means of the Site Description Form contained in Annex II.

ARTICLE 5.

1. The measurement results for each pollutant shall be expressed in accordance with Annex I, paragraph 2 and shall be transmitted to the Commission in a fixed and previously agreed format as quickly as possible and, at the latest, within six months from the end of the relevant measurement period.

2. The Commission shall acknowledge receipt of all information and data and, after insertion into its computer files, shall prepare tabular presentations for the use of the Member State concerned.

3. The data should normally be transmitted on a magnetic tape, accompanied by an interpretative print-out which contains tape density, code, tape labels, headers, trailers and a few blocks of data. In this case the data accepted into the computer files of the Commission will be considered as correct.

Data which is transmitted on forms and then accepted into the computer files will be considered as provisional until the Member State concerned notifies the Commission that these data are correct.

ARTICLE 6.

1. With a view to improving the comparability of data the Commission, in collaboration with interested Member States, shall organise intercomparison programmes to include, as appropriate, different equipment and methods of sampling and analysis as well as the reference materials which are commonly used for the relevant pollutants at stations participating in this reciprocal exchange.

2. In order to facilitate the preparation of such programmes, and to avoid duplication of effort, the interested Member States should :

- inform the Commission of any known programmes or studies on the intercomparison of equipment, measurement methods or reference materials which are planned or conducted on their territory,

- make available to the Commission sufficient numbers of any relevant reports relating to such programmes or studies;

- suggest laboratories with the requisite experience or facilities to participate in intercomparison programmes.

The Commission shall distribute such information to all Member States.

ARTICLE 7.

The Commission shall prepare annual reports on the operation of this reciprocal exchange, in an appropriate format defined in consultation with the National Coordinators, on the basis of the data referred to herein as well as any other relevant information made available to the Commission. These reports shall be distributed to the member States and then published by the Commission.

ARTICLE 8.

At periodic intervals, and for the first time five years after the adoption of this Decision, the Commission, in consultation with the National Coordinators, shall review this Decision and the operation thereof with a view to making appropriate adaptations.

ARTICLE 9.

Decision 75/441/EEC is hereby repealed with effect from 1 January 1982.

ARTICLE 10.

This Decision shall apply with effect from 1 January 1982.

ARTICLE 11.

This Decision is addressed to the member States.

Done at

For the Council,

The President.

ANNEX IMeasurement results, units, decimal places and averaging times1. Measurement results

The results of the measurements shall be expressed as follows :

- strong acidity as sulphur dioxide equivalent,
- suspended particulate matter as measured by a direct gravimetric technique, by beta-ray or by electron absorption, or by a nephelometric technique, in gravimetric units,
- black smoke as determined by reflectance or absorbance, converted into gravimetric equivalent.

2. Units, decimal places and averaging times

The following units shall be used to record the measurement results for each pollutant :

<u>Pollutant</u>	<u>Units</u>
Sulphur compounds	$\mu\text{g}/\text{m}^3$
Suspended particulates	$\mu\text{g}/\text{m}^3$
Suspended particulates of heavy metals	$\mu\text{g}/\text{m}^3$
Nitrogen oxides (NO_2 , NO_x , NO)	$\mu\text{g}/\text{m}^3$
Carbon monoxide	mg/m^3
Ozone	$\mu\text{g}/\text{m}^3$

The preferred decimal places and preferred averaging times should be used when transmitting the data. The computer files will, however, retain the decimal places and averaging times submitted with the original data but the tabular presentations will normally be printed using the preferred decimal places in the interest of uniformity.

<u>Pollutant</u>	<u>Preferred decimal places</u>	<u>Preferred averaging times</u>
Sulphur compounds	Integer	24 hrs
Suspended particulates	Integer	24 hrs
Suspended particulates of heavy metals	3	24 hrs
Nitrogen oxides (NO ₂ , NO _x , NO)	Integer	1 hr
Carbon monoxide	1	1 hr
Ozone	Integer	1 hr

ANNEX II

**Reciprocal Exchange of Information and Data
from networks and individual stations measuring air pollution
within the member States.**

SITE DESCRIPTION FORM

to be used in this reciprocal exchange.

The answers to questions marked * are optional.

In most questions the appropriate answer should be circled.

The figures in parentheses are for Commission use only.

SITE DESCRIPTION FORM

1. General

1.1 Member State (0.01-2+.15-40)

1.2 Responsible Authority & Contact : (0.41-75)

.....

Telephone : Telex :

2. Urban area/town

2.1 Class of town by number of inhabitants : (0.03)

+ 2 million	1	1-2 million	2	0.5-1 million	3
0.1-0.5 million	4	-0.1 million	5	-1000("rural")	6

2.2 Name of town (0.04-5+.15-40)

Urban area (0.41-75)

3. Station

3.1 Station name (0.08-10+.15-40)

Address

3.2 Type of area : (0.76)

Undefined	0	Urban	1	Suburban	2	("Rural"	3)
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3.3 Type of zone : (0.77)

Undefined	0	Industrial	1	Commercial	2
Industrial & Commercial	3	Residential	4		
Industrial & Residential	5	Commercial & Residential	6		
Industrial & Commercial & Residential ('Mixed')	7				

* 3.4 Traffic density around station : (0.78)

Undefined 0 Very light 1 Light 2
Moderate 3 Heavy 4

* 3.5 The overall level of pollution at this station, based on either a knowledge of all the pollutants measured or on an arbitrary scale, could be considered as : (0.79)

Undefined 0 High 1 Average 2 Low 3

3.6 Geographic coordinates in degrees, minutes & seconds or in decimal degrees :

Longitude E or W Greenwich (2.16-24)

Latitude N (2.25-33)

3.7 The station is a part of which type of network? (3.16)

Single station S Local L Regional R

National N Community C International I

* 3.8 Date when the station first operated for any pollutant :

Year Month Date (3.17-22)

3.9 Altitude above Mean Sea Level, metres (3.23-27)

* 3.10 Estimated area of representativity, km² (3.28-30)

* 3.11 Station reference numbers, maximum 10 characters :

Local (3.31-40)

National (3.41-50)

Other (3.51-60)

* 3.12 Main/Principal sources of pollution : (4.16-75)

.....
.....
.....

Approximate distance from station, kms (4.76-80)

* 3.13 Closest/Local sources of pollution (5.16-75)

.....

Approximate distance from station, kms (5.76-80)

* 3.14 Comments on the site or station : (6.16-80)

.....

4. Pollutants measured at station (0.11-12)

Sulphur dioxide 01 Suspended particulates 02
 Black smoke 03 Strong acidity 04 Particulate lead 19
 Nitrogen dioxide 08 Nitrogen monoxide 07 Ozone 14
 Mixed oxides of nitrogen 12 Carbon monoxide 06
 Particulate cadmium 28 Others :

.....

5. Meteorological parameters

5.1 Measured at the station : (0.11-12)

Wind velocity 81 Wind direction 82 Average
 temperature °C 83 Maximum temperature °C 84
 Minimum temperature °C 85 Relative humidity % 86
 Barometric pressure mb 87 Sunshine, hours 88
 Rainfall, mms 89 Atmospheric stability 90
 Cloud coverage % 91

5.2 Measured at some distance from station : (0.11-12-80)

Wind velocity? Wind direction? Average temperature?

Maximum temperature? Minimum temperature? Relative

humidity? Barometric pressure? Hours of sunshine?

Rainfall? Atmospheric stability? Cloud coverage?

Others (0.15-75)

Distance from station, kms (0.76-79)

SPECIFIC POLLUTANTS - complete one sheet per pollutant!

- Urban area/town Station
1. Pollutant : (0.11-12 = PL)
 2. Methods : (0.13-14 = TM)
 - 2.1 Sampling method :
..... (0.15-75)
 - 2.2 Analytical method :
..... (0.15-75)
 - * 3. The contribution of this pollutant to the overall pollution level at this station could be described as :
Undefined 0 High 1 Average 2 Low 3 (0.79)
 4. Calibration :
 - 4.1 Calibration technique/method :
..... (1.16-75)
 - 4.2 Calibration frequency : days/weeks/months (1.76-80)
 5. Normal duration of sampling : hrs/mins (7.16-20)
(For continuous, non-integrating equipment put 'C')
 6. Time of day when first sample begins :hrs.... (7.21-24)
 - * 7. Time of day when last sample ends :hrs.... (7.25-28)
 8. Technique first used at this station :
Year Month Date (7.29-34)
 9. Technique discontinued at this station :
Year Month Date (7.35-40)
 10. Distance from intake to road/street : metres (7.41-43)
 11. Height of intake above ground/street level :m (7.44-48)

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FINANCIAL STATEMENT

1. Budgetary lines concerned (Exercise 1982).

- post 6601 : measurement of pollution, intercalibration and surveillance networks (part of old line 3512);
- post 6640 : operation of juridical acts relating to pollution and nuisances; report on the exchange of information relating to atmospheric pollution in the member States (part of old line 3543).

The division of the costs between these posts is defined in the text.

2. Juridical base and description of the action.

2.a Juridical base

Article 235 of the Treaty.

"Proposed Council decision establishing a reciprocal exchange of information and data between the networks and isolated stations measuring air pollution within the member States."

2.b Description of the action

This foresees the continuation and the enlargement of the procedure for the exchange of information established by Council Decision 75/441/EEC of 24 June 1975; in particular, other pollutants to be included are :

lead and other heavy metals, as particulates,
nitrogen oxides,
carbon monoxide and
ozone.

The Commission agrees to organise, in collaboration with interested member States, intercomparison programmes with the aim of improving the comparability of air pollution data collected as well as the harmonisation of the methods of measurement.

3. Nature of the expenditure.

Costs of studies and costs of interventions.

4. Justification for the action.

Article 5 of Council Decision 75/441/EEC of 24 June 1975 requires the Commission to submit an appropriate proposal for a new procedure.

5. Financial implications of the action on intervention credits.

5.1 One part of the action (exchange of information - post 6640, point 4 hereunder) is of unlimited duration; the other part, of limited duration (harmonisation of measurement methods - post 6601, points 5 & 6 hereunder) may last for more than the six years foreseen in the following tables.

Unlimited duration : 90,000 Euas in 1982, 75,000 Euas in 1983 and 50,000 Euas per year thereafter.

cost 1982	-	90,000 Euas
cost 1982-86	-	315,000 Euas
1987 onwards	-	50,000 Euas/year.

FINANCIAL STATEMENT (page 2)

Limited duration	: cost 1982	-	110,000 Euas
	cost 1982-86	-	3,825,000 Euas
	cost 1987	-	105,000 Euas
	total cost	-	3,930,000 Euas.
Totals	: cost 1982	-	200,000 Euas
	cost 1982-86	-	4,140,000 Euas
	cost 1987	-	155,000 Euas
	following	-	50,000 Euas/year.

5.2 0.004 % of 1980 budget (assumption: divided uniformly over 5 years).

5.3 Five-year costs 1982 - 1986.

5.3.1 Total credits : 4,140,000 Euas

5.3.2 Calculations made on the basis, for each pollutant, of :

- 2 measurement stations per member State,
- for each station, 1 reference method apparatus supplied by the Commission, i.e., 20 apparatus total (*), plus at least two other apparatus supplied by the member State concerned,
- all sampling, measurements and maintenance will be done by each member State at their own expense; only the costs of the reference laboratory will be borne by the Commission.

After 1982 the costs are not definitive; the uncertainty is estimated at +/- 15 % for the costs of the intercomparison programme; the inflation rate must also be taken into consideration.

6. Financial implications on personnel and current operational credits.

6.1 1 agent, grade A plus 1 agent grade B.

6.2 6 months in 1983, full time from 1984 (points 1 & 2 hereafter).

6.3 Convocation of experts (point 3 hereafter).

6.4 Always based on 1981 levels (for points 1 to 3 hereafter).

7. Financing intervention expenses.

7.1 For nitrogen oxides only, a total of 90,000 Euas has been expended during the years 1980 & 1981.

7.2 & 7.3 Nothing.

7.4 Future credits are detailed in the following tables.

8. Effects on resources.

These credits must be allocated from our resources.

9. Controls foreseen.

As foreseen by Article 82 of the Financial Regulations dated 21 December 1977, as for all study contracts, for studies by contractants and also by the procedures of the Study Committee or the CCAM.

* The actual price for each apparatus lies approximately between 17,500 and 30,000 Euas according to the pollutant.

Explanations concerning the calculations.

POINT 1 - Need for supplementary personnel. (Chap. 11)

Even allowing that all the intercomparison work will be done under contract, one must nevertheless foresee one employee grade A plus one employee of grade B to assure the scientific and administrative organisation of the total of the contracts and also the running of the exchange of information. The estimations are based on 1981 levels and give, therefore, :

for 1983 - 6 months only - 20.011 + 14.677 = 34.688 eua,
 from 1984 - full time - 40.022 + 29.354 = 69.376 eua.

POINT 2 - Missions by personnel. (Chap. 11)

On the basis of 1 mission of 2 days duration per official to each member State each year one estimates 5,000 eua/official/year; only half in 1983.

POINT 3 - Convocation of experts. (Chap. 22)

On the basis of 2 experts per member State for a meeting of 2 days; 1 meeting in 1982, 3 meetings per year between 1983 and 1986, 2 per year thereafter.

POINT 4 - Reports on exchange of information including management (post 6640).

		1982	1983	1984, etc
- management of data	} 25,000	25,000	25,000	25,000
- management of computer programs				
- reports *		10,000	25,000	25,000
- adaption of computer programs		55,000	25,000	nil
		<u>90,000</u>	<u>75,000</u>	<u>50,000</u>

* from 1983 the exchange of information contains 6 pollutants in place of only 2 previously.

POINT 5 - Harmonisation programme. (Post 6601)

The details of the estimated costs for each pollutant are to be found in Tables A & B following. They have been estimated under 6 headings :

1. Examination of problems and definition of programme.
2. Intercalibration, evaluation of results and definition of the intercomparison programme itself.
3. Management of intercomparison programme, including secretarial costs, those of a technician and his/her travel expenses.
4. Provisioning, costs of the reference laboratory and transport of materials.
5. Data treatment by computer.
6. Preparation of reports.

POINT 6 - Purchase of equipment. (Post 6601)

The details are to be found in Tables A & B following.

TABLE A

POST 6601

Details of estimated costs per pollutant

	NO	NO ₂	NO _x	Pb	O ₃	CO	Totals
<u>Point 5</u>							
1	-	-	-	30,000	50,000	30,000	110,000
2	-	170,000	(170,000)	120,000	150,000	70,000	510,000
3	25,000	25,000	(50,000)	50,000	50,000	50,000	200,000
4	125,000	125,000	(250,000)	80,000	350,000	150,000	830,000
5	30,000	30,000	(60,000)	50,000	70,000	50,000	230,000
6	25,000	25,000	(50,000)	40,000	70,000	40,000	200,000
Total 5	205,000	375,000	(580,000)	370,000	740,000	390,000	2,080,000
<u>Point 6*</u>			600,000	400,000	500,000	350,000	1,850,000
Totals Post 6601	205,000	375,000	600,000	770,000	1,240,000	740,000	3,930,000

Notes

The same equipment will serve for the measurement of both nitrogen oxides and these two intercomparison programmes will be operated simultaneously, the expenses being shared between NO and NO₂. The intercalibration programme for NO is already finished but that for NO₂ has still to be done.

The figures in brackets represent the total sums for NO and NO₂ and have not been taken into the totals except for the equipment.

For the division into expenses per year see Table B following.

* For 20 apparatus.

TABLE B

POST 6601

Division of expenses by budgetary year

	1982	1983	1984	1985	1986	Totals 1982-6	1987
POINT 5							
NO - 3		13,000	12,000			25,000	
4		50,000	75,000			125,000	
5			15,000	15,000		30,000	
6				25,000		25,000	
Tot. NO		63,000	102,000	40,000		205,000	
NO ₂ - 2	110,000	60,000				170,000	
3		12,000	13,000			25,000	
4		50,000	75,000			125,000	
5			15,000	15,000		30,000	
6				25,000		25,000	
Tot. NO₂	110,000	122,000	103,000	40,000		375,000	
(Tot. NO_x)	(110,000)	(185,000)	(205,000)	(80,000)		(580,000)	
Pb - 1		30,000				30,000	
2		50,000	70,000			120,000	
3			25,000	25,000		50,000	
4				80,000		80,000	
5				25,000	25,000	50,000	
6					40,000	40,000	
Tot. Pb		80,000	95,000	130,000	65,000	370,000	
O ₃ - 1		50,000				50,000	
2		100,000	50,000			150,000	
3			25,000	25,000		50,000	
4			50,000	150,000	150,000	350,000	
5				30,000	40,000	70,000	
6					30,000	30,000	40,000
Tot. O₃		150,000	125,000	205,000	220,000	700,000	40,000
CO - 1			30,000			30,000	
2			30,000	40,000		70,000	
3				25,000	25,000	50,000	
4				50,000	100,000	150,000	
5					25,000	25,000	25,000
6						-	40,000
Tot. CO			60,000	115,000	150,000	325,000	65,000
Total 5	110,000	415,000	485,000	530,000	435,000	1,975,000	105,000
POINT 6							
NO		600,000				600,000	
Pb ^x			400,000			400,000	
O ₃			500,000			500,000	
CO				350,000		350,000	
Total 6		600,000	900,000	350,000		1,850,000	
TOTALS Post 6601	110,000	1,015,000	1,385,000	880,000	435,000	3,825,000	105,000

SUMMARY TABLE OF FINANCIAL ACTIONS

	1982	1983	1984	1985	1986	Totals	Later
<u>PERSONNEL & OPERATION</u>							
<u>Chap. 11</u>							
Point 1		34,688	69,376	69,376	69,376	242,816	69,376/y
Point 2		5,000	10,000	10,000	10,000	35,000	10,000/y
Totals Chap. 11		39,688	79,376	79,376	79,376	288,816	79,376/y
<u>Chap. 22</u>							
Point 3	3,000	24,000	24,000	24,000	24,000	104,000	16,000/y
TOTALS Ch. 11 + 22	8,000	63,688	103,376	103,376	103,376	392,816	95,376/y
<u>INTERVENTION (Chap. 66)</u>							
Point 4*	90,000	75,000	50,000	50,000	50,000	315,000	50,000/y
Point 5**							
NO		63,000	102,000	40,000		205,000	
NO ₂	110,000	122,000	103,000	40,000		375,000	
(NO _x)	(110,000)	(185,000)	(205,000)	(80,000)		(580,000)	
Fb		80,000	95,000	130,000	65,000	370,000	
O ₃		150,000	125,000	205,000	220,000	700,000	40,000
CO			60,000	115,000	150,000	325,000	65,000
Tots 5**	110,000	415,000	485,000	530,000	435,000	1,975,000	105,000
Point 6							
NO _x		600,000				600,000	
Fb			400,000			400,000	
O ₃			500,000			500,000	
CO				350,000		350,000	
Tot 6**		600,000	900,000	350,000		1,850,000	
Totals Ch. 66	200,000	1,090,000	1,435,000	930,000	485,000	4,140,000	155,000 [@]
GRAND TOTAL	208,000	1,153,688	1,538,376	1,033,376	588,376	4,521,816	250,376 ^{@@}

* post 6640

** post 6601

@ Future interventions : 1987 = 50,000 (point 4, post 6640) + 105,000 (point 5, post 6601); later 50,000 eua/year (point 4).
 @@ To foresee : 1987 = 155,000 (Chap. 66) + 95,376 (Chaps. 11 + 22); later 50,000 (point 4, post 6640) + 95,376 (Chaps. 11 + 22) = 145,376 eua/year.

