
EVALUATION OF THREE YEARS ENFORCEMENT OF THE CHLOROFLUOROCARBONS (CFC) REGULATIONS IN THE NETHERLANDS

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SUMMARY

An evaluation has been made of three years' enforcement of the chlorofluorocarbon (CFC) regulations in the Netherlands between 1993 to 1995. The results are compared with the original objectives in order to establish the follow up for the coming years. All target groups show an improved degree of compliance, in some cases to an extent which is even better than was expected. The objectives have not been reached in the areas of refrigeration installations and trade in chlorofluorocarbons. These target groups will receive the focus of attention in the coming years.

1 INTRODUCTION

1.1 Background

A number of countries decided to reduce or terminate the production and use of substances which cause depletion of the ozone layer, in view of the effect of these substances on the ozone layer and the associated consequences for man and for the environment. This is laid down in the Montreal Protocol (December 16, 1987) on the protection of the ozone layer.

The international regulations dealing with substances which cause depletion of the ozone layer resulted in the inclusion of action point A.1 in the 1989 National Environmental Policy Plan (NEPP):

"... At home the Netherlands is striving after terminating the use and emissions of fully halogenated chlorofluorocarbons in 1995 or as rapidly as possibly thereafter, assuming that replacement substances are available."

To carry out this part of the environmental policy plan a chlorofluorocarbon action program was drawn up in the form of a collaborative project between government and industry. The action program was published on June 21, 1990, and contains voluntary agreements concerning the termination of the use of substances which cause depletion of the ozone layer. The action program also stipulated that legislation would be drawn up in order to provide support to these agreements. This legislation appeared in the form of the "Ozone Depleting Substances Decree" (Chlorofluorocarbon (CFC) Decree) which came into effect on the first of January 1993.

1.2 Organization of the enforcement

In 1991 the Inspectorate for the Environment decided that in order to achieve the objectives of the national policy plan the enforcement of the Decree should be carried out on a project basis. The preparations for this project were started in 1991 with an inventory of the total target group.

In 1991 and 1992 agreements were made with Customs, the provinces, the municipalities, the Shipping Inspectorate and the State Supervision of Mines that these authorities would include matters pertaining to the chlorofluorocarbon regulations in their regular company inspections. Table 1 shows the number of companies for each target group, and the division of responsibilities between the various enforcement authorities involved.

TABLE 1. TARGET GROUPS AND ENFORCEMENT AUTHORITIES

Target group	Number of companies ¹	Division of responsibilities between the enforcement
Production and trade in CFC's and halons	200	Inspectorate for the Environment, Customs
Installers of refrigerating installations	1500	Inspectorate for the Environment
Users of refrigerating installations	200.000	Provinces and municipalities, Shipping Inspectorate, State Supervision of Mines
Users of solvents and cleaners	600	Inspectorate for the Environment, provinces and municipalities
Users of halon fire extinguishing systems	270.000	Inspectorate for the Environment, provinces and municipalities, Shipping Inspectorate, State Supervision of Mines
Traders/users of insulation material	75 ²	Inspectorate for the Environment

¹ The figures are based on information from the Chambers of Commerce.

² This does not include the number of end-users of insulation material containing CFCs.

The enforcement program was published in July 1992. This program set down the broad outlines of the required form of the organization, as well as the necessary training and facilities, the working arrangements with the other authorities, the information to be directed towards the various branches of industry, and the approach with regard to prosecution.

A chlorofluorocarbon (CFC) team was then formed. This team was responsible for the enforcement of the Regulations from February 1993 until the end of 1995. 1993 was a "test" year, during which information and warnings were given to companies in the target groups. At the end of 1993 an interim evaluation was made. This evaluation resulted in the following:

- For each target group a clear objective was established, which was expressed as the required degree of compliance.
- It was decided to adopt a procedure whereby a series of campaigns would be carried out, each directed at one of the target groups.

- It was decided to make more official reports when offences were discovered.

A comprehensive description of the design of the project is given in Tijink and Kesselaar.¹ The project was completed with a final evaluation. A summary of the way in which the final evaluation of the activities of the team was conducted is shown below, together with the results of the evaluation.

2 OBJECTIVE OF THE EVALUATION

The objective of the evaluation is to examine the effect of the enforcement activities of the team on the degree of compliance of the various target groups.

3 CALCULATION OF THE DEGREE OF COMPLIANCE

The degree of compliance of a target group is calculated as the number of companies visited where no violations were found, divided by the total number of companies visited. It is expressed as a percentage.

It should be realized that this calculation is only valid under the following conditions:

- The companies visited must constitute a representative sample of the entire target group.
- The degree of compliance is only applicable to those regulations which were the subject of the inspection.
- The quality of the inspections must be such that when a company is in violation of the regulations then it is also recognized as being in violation.

Trends in the degree of compliance were examined by comparing measured degrees of compliance from different years. This is only possible when:

- The same aspects of the regulations have been the subject of inspections in the different measurements.
- The regulations have not been changed during the period being reviewed.

TABLE 2. RESULTS OF ENFORCEMENT IN THE YEARS 1993, 1994 AND 1995

Target group	1993			1994			1995			Totals		
	CV	WW	OR	CV	WW	OR	CV	WW	OR	CV	WW	OR
Production and trade in CFCs and halons	250	17	2	220	6	3	57	10	7	527	33	12
Installers of refrigerating installations	235	80	0	285	48	49	189	36	18	709	164	67
Users of refrigerating installations	245	205	0	203	111	46	517	116	100	965	432	146
Users of solvents and cleaners	590	238	0	221	80	8	110	18	5	921	336	13
Users of halon fire extinguishing systems	67	5	0	8	6	0	0	0	0	75	11	0
Traders/users of insulation material	73	11	1	44	4	0	18	0	0	135	15	1
Totals	1460	556	3	981	255	106	891	180	130	3332	991	239

Key:

- CV = Company visits (including repeated inspections)
- WW = Warnings in writing
- OR = Official reports

4 RESULTS OF THE CHLOROFLUOROCARBON (CFC) ENFORCEMENT TEAM**4.1 Summary of enforcement activities and results**

Table 2 shows a summary of the number of warnings in writing, official reports, and total company visits for each of the target groups made in the years 1993, 1994 and 1995.

Fewer companies were visited in 1994 and 1995 than in 1993. The reason is that more time was needed to prepare the visits and to make the official reports. The figures in the table are totals for the activities for each target group. Usually more than one campaign has been carried out for each target group. An assessment can be made of the degree of compliance for each campaign, but the figures shown in table 2 can be used for such an assessment in only a number of cases.

5 DEGREE OF COMPLIANCE AND FOLLOW UP FOR EACH TARGET GROUP

The required degree of compliance for each target group was established following the interim evaluation made in 1993. The practical feasibility was an important factor when assessing the required degree of compliance. For this reason the required degree of compliance for larger target groups such as the users of refrigeration installations was set at 80%. The necessary follow up can be established by a comparison of the required degree of compliance with the actual degree of compliance as measured during the various campaigns.

5.1 Production and trade in chlorofluorocarbons and halons

As a result of the change in the regulations during the course of the project it is not possible to make an assessment of the degree of compliance of this target group. In view of the position of the production and trade in the chlorofluorocarbon chain the required degree of compliance has been set at 100%; consequently the Inspectorate for the Environment will continue their activities towards this target group.

5.2 Installers of refrigeration installations

The required degree of compliance for installers has been set at >90%. During the 1995 campaign "recognized installers of refrigerating installations" it was found that 90% of the installers complied with the regulations. The compliance of the target group of installers of refrigerating installations (maintenance level) will be supervised in the coming years by means of random checks.

5.3 Users of refrigerating installations

Compliance with the regulations by users of stationary refrigerating installations is poor. In 1993 the degree of compliance was 17%, and in 1995 it was 30%. It should be noted that in 1993 the inspections were restricted to administrative requirements. In 1995 much more extensive inspections were made. For the administrative requirements the degree of compliance was found to be 98%; this was the only area of the regulations in which a considerable improvement was observed. The degree of compliance with the administrative requirements for *mobile* refrigerating installations improved from 15% in 1994 to 66% in 1995. In view of the present degree of compliance it has been decided that priority will be given to the target group of the users of refrigerating installations until the required degree of compliance (>80%) has been reached.

5.4 Users of solvents and cleansers

The degree of compliance of this group has risen from 60% in 1993 to 80% in 1995. In the coming year this group will not receive priority, as the required degree of compliance (>80%) has now been achieved. From 1997 onwards the enforcement activities will increase as a result of changes in the regulations, which will then become more stringent.

5.5 Users of halon fire extinguishing systems

No campaigns have been carried out towards this target group during the project. It is therefore not possible to make any assessment of the degree of compliance. Information from another source² indicates that halon is no longer available in the Netherlands. For this reason no enforcement activities are planned for this target group.

5.6 Trade in, and users of, insulation material

A number of random inspections at building sites have shown that insulation material containing chlorofluorocarbons is no longer in use in the Netherlands. The required degree of compliance has therefore been achieved, and for the time being enforcement activities are not necessary.

6 CONCLUSIONS

- The enforcement project can be considered to be a success in view of the improvements in the degree of compliance by industry, and the level of collaboration between the enforcement authorities.
- The Inspectorate of the Environment and the collaborating enforcement authorities will continue enforcement of the Chlorofluorocarbon (CFC) Decree until the required degree of compliance is achieved.
- In the future the same general procedure will be used, i.e.
- Brief campaigns will be conducted per target group.
- Warnings will no longer be given, and instead immediate action will be taken.
- Where possible there will be collaboration with other enforcement authorities.

REFERENCES

1. Tijink, G.A.H. and Kesselaar, Dr F.H., Enforcement of the CFC Regulations in the Netherlands, Proceedings of the Third International Conference on Environmental Enforcement, Oaxaca, 1994, Vol. I, p. 492
2. CFC Action program, annual report 1994; CFC Committee, 29 May 1995, p. 40-41.