Secretariat of Sub-committee on OELs
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# OELs and international cooperation

A discussion paper concerning international cooperation as the basis for developing OELs

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## 1. Introduction

It is a fact that in the Netherlands (and in other countries), no occupational exposure limits (OELs) have yet been established for the vast majority of substances which occur in the workplace and to which employees may be exposed. It is also a fact that at the current rate at which OELs *are* being set, it will take hundreds of years before an OEL has been defined for most substances.

One way to alter this situation and increase the "output" of OELs is for countries to join together in taking action; in other words, through international cooperation. This paper proposes a form of international cooperation, the conditions under which it could take place and possible working methods.

Section 2 of this paper describes the status of OELs in occupational health & safety policy and the procedure for defining OELs in the Netherlands. Section 3 discusses the results of this procedure, while Section 4 looks at the problems it raises. Section 5 focuses on the conditions and basic principles for European cooperation, and Section 6, finally, suggests one way in which the output of OELs can be increased, i.e. through international cooperation.

**This paper is intended to spark off a national and international debate. Your comments and suggestions are therefore welcome[1].**

## 2. OELs, occupational health & safety policy and the OEL procedure

There has long been a pressing need to set specific standards within the field of occupational health and safety. Specific, quantified standards clarify things for both employers and employees and make enforcement an easier task for the Labour Inspectorate. The same holds true for substances which are irritating or harmful to health. The more that exposure in the workplace places health at risk, the stricter the standards (in other words, the lower the exposure limits) should be. In the Netherlands, OELs play an important role in this respect.

OELs are applied by the government and by trade and industry when testing exposure levels and assessing working conditions. They are also used to monitor the effectiveness of occupational hygiene or other measures intended to reduce exposure to levels at which health will not be harmed (effectiveness criterion). OELs furthermore provide guidelines for the minimum level of protection required when designing new plants or when monitoring sources of emissions.

In other words, OELs play a role in determining a policy protecting the health of workers.

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The importance attributed to OELs when it comes to protecting health and assessing the feasibility of actually applying such standards led in the Netherlands to the adoption of a so-called three-step procedure in 1976. In this procedure, all the various parties concerned are involved in setting OELs: the government, scientists, employers and employees.

*The various stages of the three-step procedure*
In the *first step*, the Health Council of the Netherlands (*Gezondheidsraad*) adopts a health-based recommended exposure limit (airborne concentration) for a substance in the workplace. It does this based on a study of the literature performed by a scientific institute (contracted to do so by the Ministry of Social Affairs and Employment). The procedure also provides for the publication of a draft report which is made available to the public for scientific comments. The report is in English so that comments may also be received from abroad.

In the *second step*, a committee of employer and employee representatives from the Social and Economic Council tests the technical and economic feasibility of the recommended exposure limit in the field and advises on it. In addition to the trade union federations and employers' associations, the test also involves industry associations, health & safety services (*Arbodiensten*) and research institutes. These organisations can sign up ahead of time to be involved in the advisory process for particular substances.

In the *third step*, the Ministry of Social Affairs and Employment establishes an OEL based on the recommendations of the Health Council of the Netherlands and of the Social and Economic Council.

The term "occupational exposure limit" (OEL) is not used in Dutch legislation; instead, the law refers to a "statutory" or to an "administrative" limit value (*grenswaarde*).

Certain restrictions apply when it comes to working with OELs. These restrictions are inherent to the concept of OELs and are related to the procedure for the establishment of OELs. The restrictions concern not only the associated health-based scientific evidence (lack of data, wide margin with respect to sensitivity, exposure to multiple substances), but also other factors, for example you cannot use them in case of incidens or catastrophes, their being tailored to healthy employees, an eight-hour working day and a forty-hour working week, their only considering absorption of substances by means of breathing and the restrictions associated with the measurement strategy and measurement method.

## 3. Result of the process of setting OELs in the Netherlands

The current procedure for the establishment of OELs was introduced in 1976, and it was from that year on that scientists, employers and employees became involved in establishing these limits. Before then, the Labour Inspectorate adopted the exposure limits set by the American Conference of Governmental Industrial Hygienists (ACGIH) and used these in its inspection policy.

One of the first outcomes of the new procedure was the first National OEL List 1978/1979, published in October 1978. This first official list gave OELs for approximately 600 substances or groups of substances. Most of the exposure limits had been adopted from the ACGIH. On the advice of a special OEL committee (*Nationale MAC-Commissie*), the limits for six substances had been adopted either from Germany, (the *Deutsche Forschungs Gemeinschaft*; *Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe*) or from the US National Institute for Occupational Safety and Health (NIOSH), or a provisional OEL had been determined.

The most recent OEL list (2002) indicates OELs for more than 700 substances or groups of substances. Of these, 176 of the exposure limits have been set by means of the three-step procedure and are backed up by a recommendation from the Health Council of the Netherlands. The former OELs for most of these 176 substances had been adopted from foreign sources and today a Dutch scientific review and opinion concerning their feasibility are available. This means that these OELs have become "statutory" requirements. The other exposure limits have been adopted from foreign sources (in Germany, the UK, Sweden or from the ACGIH) upon the recommendation of the Social and Economic Council's Sub-committee on OELs (Subcommissie MAC-waarden) or one of its predecessors. These OELs are "administrative" requirements.

If we compare the first National OEL list from 1978 with the list from 2002, we see that OELs for approximately 100 substances have been added and that 25% of the substances with an OEL on the current list are backed up by a scientific review produced by the Health Council of the Netherlands. The increase in the number of substances assigned an OEL can be attributed largely to the fact that OELs have been adopted from foreign sources.

## 4. The present Dutch procedure: the most significant problems

In addition to the more common problems associated with the availability of toxicological data on which an OEL can be based, the most significant problem is the lack of financial and human resources.

Increasing the financial resources does not mean that the output, i.e. the scientifically substantiated recommended exposure limits, would increase immediately[2]. It takes the experts much time and effort to consider and evaluate the toxicological data. Only a small group of scientists are available to do this work, placing constraints on what can

[2] In the long run, increasing the financial resources will lead to a larger output, since doing so will generate a labour market that can be filled via training and specialisation.

be achieved every year. It is hardly possible that improving the efficiency of the present working method will improve the result in quantitative terms.

Not only is the pool of scientists available to sit on committees such as the Health Council's Dutch Expert Committee on Occupational Standards (DECOS) too small, but a further problem is that, for financial reasons, their employers are not always prepared to "lend" them.

The reality is that an OEL has only been established for a fraction of the substances which can occur in the workplace. It is estimated that employees in the workplace may be exposed to anywhere from a few thousand to approximately 20 thousand different substances. At the current rate at which (properly substantiated) OELs are being established, it may take hundreds of years before OELs can be established for all the substances present in the workplace.

The introduction of the Strategy for Dealing with Substances (SOMS) developed by the Dutch Ministry of Housing, Spatial Planning and the Environment, combined with European legislation based on the White Paper on Europe's chemical agents policy, is expected to fill in some of the gaps in information by making more toxicological data available in the long run. The expectation is that the number of properly substantiated OELs will increase as a result. Whether that is in fact the case depends on the new substances policy[3] and how trade and industry and its associated organisations, health & safety services and scientific institutes will co-operate in implementing it. Even then, the restricted resources will set limits on how many properly substantiated OELs can be added.

As long as the procedure for the establishment of OELs is restricted to being a national activity, it will take a very long time to increase the number of exposure limits by any significant amount. The answer to this problem can be summarised in two key words: international cooperation.

This is certainly not a new idea. In the past, even the recent past, the Social and Economic Council, the former Working Environment Council and the present Health Council of the Netherlands emphasised the need for international cooperation in providing scientific evidence to support OELs.[4] The various member states and organisations involved in determining OELs evidently have other priorities, however, and have not, up to now, shown much inclination to cooperate more closely. Nor does the working programme of the Scientific Committee for Occupational Exposure Limits (SCOEL) appear to coincide with the programmes of those member states that have

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3 What will be decisive is the extent to which producers will be obligated to carry out research and the capacity of the chemical substances office envisaged by the EU.

4 This resulted, among other things, in a partnership between the Health Council's DECOS Committee, the Nordic Expert Group for Criteria Documentation of Health Risks from Chemicals (NEG) and the Swedish Criteria Group (SCG), close communication with the German *MAK* committee and with the British Health and Safety Executive (HSE). Other agreements were made with the US National Institute for Occupational Safety and Health (NIOSH) about dividing up a number of substances, similar to the arrangements made with the NEG. Developments within the Scientific Committee for Occupational Exposure Limits (SCOEL) are also being followed closely. Despite the various efforts made, co-ordination of the different national working programmes has turned out to be almost impossible and has in fact been restricted to co-ordination between the Netherlands and the NEG, the SCG and NIOSH, and then only for a (small) number of substances.

their own OEL procedure. SCOEL does make use of member state evaluations, but all that means is that the review is carried out twice and that the work is duplicated, regardless of whether opinions differ. This also places limits on the role played by the European Commission. It is odd in that respect that the Commission itself has not attempted to promote European cooperation.

Actually, what happens every year is that the member states of the EU place substances on their working programmes even if they could have known that another member state is already investigating the substance or has completed its evaluation. Both the experts involved and the financial resources are not used efficiently, within either the national or the European context, and in view of the many "blind spots", their deployment is furthermore ineffective. The following is a case in point. Every year, a list is drawn up for the Dutch MAC Values Sub-committee of the changes made to the OEL lists produced by Germany (DFG) and the UK (HSE), which are published annually, and by Sweden, which is published every three to four years. In 1996, there were a total of 67 new or amended OELs on these lists. Of these, only 13 exposure limits were tested to see whether it would be feasible for the Netherlands to adopt them as well. Thirty-six of the limits were not subject to the Dutch feasibility test because they had either already been reviewed in the Netherlands or were listed on the Dutch working programme. In essence, those 36 substances thus appeared on two various working programmes. The number of duplicates in 2000 came to 20 substances.

It may be assumed that if there had been some form of international cooperation and division of substances at that time, the Dutch OEL output for both years taken together – 16 OELs – would have increased by another 56 OELs in the most favourable case (see also Appendix 1). A quick check for 1997 to 1999 shows that international cooperation in these three years would have produced 33 new OELs for the Netherlands.

## 5. The conditions and basic principles for European cooperation

As it is the aim to harmonise the policy on protecting workers within the European Union, efforts will naturally need to be made to investigate and establish OELs which are adopted in all the various member states. Employees are, after all, entitled to the same level of protection everywhere in Europe. A further advantage is that potential economic competition with respect to working conditions can be avoided.

Harmonisation of this kind cannot, as yet, be achieved, however. In our opinion the differences between the countries (differences related to the degree of industrialisation, the size and composition of the industrial sector and the state of technology) are so large that the member states cannot, for the time being, be brought into line with one another.

It is no doubt for this reason that the Commission has set *indicative* OELs. The national governments must bear these indicative exposure limits in mind when setting their own national OELs, but they are not obliged to adopt them. For now, a European OEL is merely an ideal. For practical reasons, limited international cooperation – i.e. with respect to investigating and determining the scientific evidence for OELs within the European Community – is preferable.

The question is how to start the process of European cooperation and which conditions should be set in that regard. There is a risk that efforts to cooperate at European level will become bogged down in discussions about the details, about infringements of national activities, about competencies, about the division of costs (not all member states have an OEL procedure and those that do not have one will benefit from the work of the others), etc.

The initial focus of international cooperation will therefore have to be on co-ordinating the working programmes and preventing duplicates on the lists of substances. The most appropriate place for this form of co-ordination is within the European Commission.

A further basic principle should be that the various components of the procedures already in place in the member states should be retained as much as possible. That means that the committees set up in the members states to produce scientific evidence would continue their work. After all, many of these committees acting together will get much more done than a single European SCOEL. The document in which SCOEL describes its own working methods and criteria could be used as the starting point. That document reflects the consensus of scientists working within SCOEL and is compatible with the working methods of the DECOS Committee.

For international cooperation to be successful, it is important for the member states to commit themselves to the decisions taken. It should, of course, continue to be possible for member states to place a (limited) number of substances on their own working programmes for national political reasons.

The member states will furthermore have to be prepared to adopt the toxicological evidence and the associated recommended exposure limit of the other expert committees as the scientific basis for their own OELs. Such willingness cannot be forced on them by the European Commission but should be a logical outcome of the quality of the procedure for collecting toxicological evidence set up by them as a group (for example the aforementioned SCOEL document on working methods and criteria).

The procedure must hence be clear and transparent, particularly as concerns such aspects as: accessibility of the literature consulted, international accessibility (reports drawn up in English, with a summary in the language of the country concerned), the opportunity to submit comments (similar to the public draft report phase in the Netherlands), publication of the final report, and a uniform report format. It is important in this connection to review the extent to which differences between the national procedures can be amended without too much difficulty. Sudden and dramatic changes must be avoided, however, as they may pose a risk to cooperation. Eventually, the differences between the national procedures might disappear.

The biggest problem is perhaps of an entirely different nature. Up to now, only a (small) number of member states have invested in setting up scientific reviews and have the expertise required to do so. If cooperation is to take place as described, the burden will have to be more evenly distributed in order to generate enough support.

## 6. Proposal for European cooperation

The Committee's proposal for European cooperation with respect to producing scientific evidence for OELs is the following:

- A meeting organised under the auspices of the European Commission to co-ordinate a joint working programme of substances for which an OEL is to be established or amended, as well as the division of substances between the various member states to be reviewed by the national expert committees. This debate could take place in the Advisory Committee for Safety, Hygiene, and Health Protection at Work in Luxembourg, which already consists of employer and employee representatives and the governments of all the member states. This Committee furthermore advises the European Commission on the introduction of indicative OELs. Agreement on the criteria for selecting substances is required. The Commission could propose a joint working programme which the Advisory Committee could advise upon. The Committee of Experts of the member states could also be involved in preparing the EC's proposal.
- Scientific evidence and recommended exposure limits drafted by the national expert committees for each member state (like the Netherlands' DECOS Committee). A national expert committee would produce a draft report and send it to the other expert committees for their comments. See also below.
- The testing of the national proposals by SCOEL, after the public commentary phase in which the trade unions and employers comment on the scientific substance. This would mean changing the tasks and role of SCOEL, which would no longer produce its own recommended limits, but assess the findings of the national scientific expert committees. In effect, it would monitor the quality and intervene whenever the groups of experts threaten to differ too widely in their opinions. It could also serve as an international consultative body for resolving differences of interpretation or for drawing conclusions from or assessing new toxicological research techniques. SCOEL would therefore no longer draft advisory reports itself. The procedure could, for example, be that a national expert committee incorporates comments on the public draft report and submits this report to the SCOEL for assessment. SCOEL would then have to respond within a specific period of time (as yet to be determined). Upon its approval, the report can be published by the national expert committee (or the member state) involved, with the SCOEL's opinion being included. If the national committee and SCOEL differ in their opinions, they can consult one another, but ultimately the national committee will decide which exposure limit is to be recommended. If SCOEL agrees, the European Commission will automatically adopt the same recommended limit when it establishes indicative OELs. Changing the tasks of the SCOEL could also mean that its composition will need to be reviewed. It would also be advisable to investigate how the national expert committees might participate in SCOEL. To avoid any conflict of interest, participation will have to be restricted to observer status.
- Publication of the final report by the member state or expert committee involved. For practical reasons, we propose that the final reports are published by the various member states in the same way in which they are now published. The ideal situation is for the European Commission to publish the final reports in the Official Journal and on the Internet. The reality is that it sometimes takes many years before a report authored by SCOEL is published; that was also the case with reports by its predecessor. Financing and the budgets allocated play a major role

in this respect. That is why we have not proposed changing the current procedures in the various member states. It would, however, be advisable to pay more attention to publicising these reports when they are published in the other member states.

The proposal does not deal with the follow-up, that is the feasibility test. For the time being, each country will have to decide whether or not to introduce the OEL. The next step towards establishing a European OEL would perhaps be to agree that the national governments (or national OEL committees) inform the Advisory Committee about the arguments that have led to defining a certain OEL.

Appendix

**Potential effect of international cooperation, viewed from the perspective of the Netherlands**

The question is whether co-ordinating the various national working programmes will in fact actually increase the output of OELs. In other words, will the total number of scientific reviews carried out to substantiate OELs per member state increase each year, and in turn the number of indicative OELs to be set by the Commission or by the member state?

The table below compares new or amended OELs defined in 1996 and in 2000 in the UK, Sweden, and Germany (German *MAK* committee) with the number of OELs tested on the basis of those amendments by the Social and Economic Council's MAC Values Sub-committee. The table also reports the number of OELs which were not tested in the Netherlands because they had already been through the Dutch procedure or were still listed on the Dutch working programme.

| **OELs** | **Year** | **Germany (*MAK* committee)** | **UK (HSE)** | **Sweden** | **Totals** |
|---|---|---|---|---|---|
| Number of new or amended limits | 1996 | 22 | 12 | 33 | 67 |
| | 2000 | 9 | 12 | 22 | 43 |
| Number of limits tested in the Netherlands | 1996 | 1 * | 2 | 10 | 13 |
| | 2000 | 3 | 4 * | 4 | 11 |
| Number of limits not tested in the Netherlands (listed on Dutch working programmes) | 1996 | 10 | 10 ** | 16 ** | 36 |
| | 2000 | 5 | 5 | 10 | 20 |

* The limit involved or one of the limits involved coincided with SCOEL's recommendation.
** The SCOEL limit had already been introduced in the Netherlands for one of these substances.

It should further be noted that Sweden, unlike the other countries concerned, only publishes a new OEL list every three to four years.

The difference between the number of new exposure limits and the total number of exposure limits tested plus the limits set for substances not tested because they were or had been listed on the Dutch working programme is the result of the new foreign OELs which are the same as or scarcely differ from the Dutch OEL in effect at that time. These exposure limits were also not tested to see whether they could be adopted, but they have not been included in the table.

In both years, the Dutch output of OELs based on the recommendations of the DECOS Committee came to eight. This does not include two substances for which an existing statutory OEL (2000) had been lowered or the seven (1996) and eight (2000) limits adopted from the European Commission (in particular recommended exposure limits issued by SCOEL and its predecessor).

Assuming that duplicates in the working programmes have been avoided (general co-ordination in advance), that an international, or at least a European form of cooperation (as explained in our proposal) can be achieved, and finally that adoption turns out to be feasible, the Netherlands' output of OELs would have increased in 1996 by a maximum of 36 OELs and in 2000 by a maximum of 20 OELs.

Although one can argue about the details, the figures show that if the European Commission were to co-ordinate the working programmes, the individual member states would benefit, even if co-ordination were to be restricted to producing the scientific evidence for the OELs in the various member states and if the feasibility of introducing an OEL were still tested on a country-by-country basis.