



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 28.01.2005
COM(2005) 20 final

**COMMUNICATION FROM THE COMMISSION TO THE COUNCIL AND THE
EUROPEAN PARLIAMENT**

Community Strategy Concerning Mercury

{SEC(2005) 101}

1. INTRODUCTION

In December 2002 the Commission presented a report to the Council concerning mercury from the chlor-alkali industry¹. This considered the fate of 12-15 thousand tonnes of surplus mercury resulting from the sector's conversion away from the mercury cell process. The Council reacted by inviting the Commission to present "a coherent strategy ... with measures to protect human health and the environment from the release of mercury based on a life-cycle approach, taking into account production, use, waste treatment and emissions". The strategy also provides a basis for the Community's input to international debate on mercury at the UNEP Governing Council in February 2005.

This Communication is accompanied by an Extended Impact Assessment² (ExIA) looking at the mercury problem and policy options in detail. It also takes account of a wide range of expressions on the need to act made during stakeholder consultation on the strategy, the processes and results of which are described in the ExIA.

2. THE MERCURY PROBLEM

2.1. The mercury threat

Mercury and its compounds are highly toxic to humans, ecosystems and wildlife. Initially seen as an acute and local problem, mercury pollution is now also understood to be global, diffuse and chronic. High doses can be fatal to humans, but even relatively low doses can have serious adverse neurodevelopmental impacts, and have recently been linked with possible harmful effects on the cardiovascular, immune and reproductive systems. Mercury also retards microbiological activity in soil, and is a priority hazardous substance under the Water Framework Directive³.

Mercury is persistent and can change in the environment into methylmercury, the most toxic form. Methylmercury readily passes both the placental barrier and the blood-brain barrier, inhibiting potential mental development even before birth. Hence exposure of women of child-bearing age and children is of greatest concern.

The largest source of mercury exposure for most people in developed countries is inhalation of mercury vapour from dental amalgam. Exposure to methylmercury mostly occurs via diet. Methylmercury collects and concentrates especially in the aquatic food chain, making populations with a high intake of fish and seafood particularly vulnerable.

¹ COM(2002) 489 final, 6.9.2002.

² SEC(2005) 101.

³ Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, OJ L 327, 22.12.2000, as amended by Decision 2001/2455/EC of the European Parliament and of the Council of 20 November 2001 establishing the list of priority substances in the field of water policy, OJ L 331, 15.12.2001.

Most people in central and northern Europe show bioindicators of exposure below internationally accepted safe levels for methylmercury. However, most people in coastal areas of Mediterranean countries, and around 1-5% of the population in central and northern Europe, are around these levels, and large numbers among Mediterranean fishing communities and the Arctic population exceed them significantly.

2.2. A global perspective

Although mercury is released by natural sources like volcanoes, additional releases from anthropogenic sources, like coal burning and use in products, have led to significant increases in environmental exposure and deposition. Past releases have also created a “global pool” of mercury in the environment, part of which is continuously mobilised, deposited and re-mobilised. Further emissions add to this global pool circulating between air, water, sediments, soil and biota.

Elevated mercury concentrations occur in many parts of the world. Some are largely due to local sources, especially small scale gold mining in South America, Africa and Asia. But as a transboundary pollutant, mercury also can be transported globally to regions far from its source. This means that some pollution of a local character, viewed in the short term, adds to the global pool in the long term. It has also led to contamination of regions with few or no mercury sources, like the Arctic.

3. OBJECTIVES

A key aim is to reduce mercury levels in the environment and human exposure, especially from methylmercury in fish. But eliminating the problem of methylmercury in fish will probably take decades, as present levels are due to past emissions, and would take time to fall even without further releases. The Community has already taken much action to reduce mercury emissions and uses. This does not mean that no more can be done, but highlights the importance of full implementation of existing measures by Member States, and of making progress at the global level.

The strategy therefore has the following objectives:

- Reducing mercury **emissions**.
- Reducing the entry into circulation of mercury in society by cutting **supply** and **demand**.
- Resolving the long-term fate of mercury **surpluses** and societal **reservoirs** (in products still in use or in storage).
- Protecting against mercury **exposure**.
- Improving **understanding** of the mercury problem and its solutions.
- Supporting and promoting **international action** on mercury.

Progress, gaps and additional actions to be taken are described below for each objective. References to the short and medium terms relate to the next 3 years and 4-6 years respectively. Longer term actions will be identified following review of the strategy.

4. REDUCING EMISSIONS

Mercury releases have generally risen with industrialisation. Global atmospheric emissions grew about 20% from 1990-2000. European emissions fell about 60% over this period, but Europe remains a major source of mercury deposited in other continents and the Arctic.

One of the main source of mercury releases is coal burning. Coal burning in plants above 50 MW_{th} is covered by the IPPC Directive⁴ – as are other major sources like the metals, cement and chemical industries – and Directive 2001/80/EC⁵.

The IPPC Directive is therefore a key Community tool to reduce emissions of mercury and other pollutants. Permitting of IPPC installations, with limited exceptions for some new Member States, is to be complete by 30 October 2007. The Commission is publishing a series of BAT reference (BREF) documents to support IPPC implementation.

Action 1. The Commission will assess the effects of applying IPPC on mercury emissions, and consider if further action like Community emission limit values is needed, as data under the IPPC and EPER⁶ reporting requirements are submitted, and in a broader strategy review by the end of 2010. This will include review of the co-benefit effect of controls to be implemented by 1 January 2008 under Directive 2001/80/EC to reduce sulphur dioxide emissions from large combustion plants.

Action 2. The Commission will encourage Member States and industry to provide more information on mercury releases and prevention and control techniques, so conclusions can be drawn in BREFs helping to reduce emissions further. The second edition of the chlor-alkali BREF will include information to address the risk of releases in decommissioning mercury cells.

Small combustion plants and residential coal burning are also significant mercury sources. Control of such facilities is more likely to be cost-effective when considered on a multi-pollutant, rather than a single substance, basis. This is already being examined in the Clean Air for Europe (CAFE) programme for “classical” air pollutants such as ammonia and sulphur dioxide.

⁴ Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control, OJ L 257, 10.10.96.

⁵ 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, OJ L 309, 27.11.2001.

⁶ Commission Decision 2000/479/EC of 17 July 2000 on the implementation of a European pollutant emission register (EPER) according to Article 15 of Council Directive 96/61 concerning integrated pollution prevention and control, OJ L192, 28.7.2000.

Action 3. The Commission will undertake a study in 2005 of options to abate mercury emissions from small scale coal combustion, to be considered alongside the broader CAFE assessment.

Some Member States identify dental amalgam as a significant source of mercury releases, including via dental surgeries and cremation. Treatment of dental amalgam waste is covered by Community waste law⁷.

Action 4. The Commission will review in 2005 Member States' implementation of Community requirements on the treatment of dental amalgam waste, and will take appropriate steps thereafter to ensure correct application.

Emissions from crematoria are not covered by Community law, but are regulated in several Member States, and are also the subject of an OSPAR Recommendation. Reports on emissions by parties to this Recommendation, first due by 30 September 2005, will give an indication of effectiveness and whether further action is required. Similar control is encouraged in other Member States where cremation takes place.

More broadly the proposal for a Directive on priority substances under the Water Framework Directive will include quality standards for mercury to be met by 2015, which will be relevant in IPPC permitting, for example. Adoption of the measures will start the framework Directive's 20-year period for cessation or phasing-out of emissions, discharges and losses.

5. REDUCING SUPPLY

Mercury is traded freely on the world market. Current global supply is around 3,600 tonnes per year. The EU is the major exporter, with a net annual export of around 1,000 tonnes. The price of mercury has fallen dramatically since its peak in the 1960s, standing relatively stably at around €5 per kilogramme for most of the past decade. The economic impact of the mercury trade is therefore very small. The low price and ready supply also encourage continued use of mercury outside Europe in activities such as gold mining.

Mercury compounds used as pesticides are subject to the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade. This is implemented in the Community by Regulation (EC) No. 304/2003⁸, which also bans export of cosmetic soaps containing mercury and requires export notification of mercury compounds for all other uses. There are no Community or international restrictions on trading metallic mercury. However, analysis in the ExIA suggests that the export of mercury from the Community should be phased out.

⁷ Commission Decision (2000/532/EC) of 3 May 2000 replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Directive 75/442 on waste and Council Decision 94/904 establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste, OJ L226/3, 6.9.2000 (as amended).

⁸ Regulation (EC) No. 304/2003 of the European Parliament and of the Council of 28 January 2003 concerning the export and import of dangerous chemicals, OJ L 63, 6.3.2003.

Action 5. As a pro-active contribution to a proposed globally organised effort to phase out primary production of mercury and to stop surpluses re-entering the market as described in section 10, the Commission intends to propose an amendment to Regulation (EC) No. 304/2003 to phase out the export of mercury from the Community by 2011.

The main global supplier is the Spanish state-owned firm MAYASA. Under an agreement made in 2001, MAYASA buys the EU chlor-alkali sector's surplus mercury for resale. MAYASA also sells mercury that it has made from ore mined in Almadén, Spain. Mercury production in Almadén peaked at around 2,800 tonnes in 1941, but has since fallen as the market has declined, and recently as the chlor-alkali industry has provided an alternative source. The recent total supply by MAYASA has been around 1,000 tonnes of mercury per year.

The ExIA finds that, even without an export ban, the negative environmental impacts of primary mercury mining and production, and their questionable economic viability, support the ending of these particular activities. Spain has stated that mining and production in Almadén had already been stopped temporarily before the adoption of this strategy, and does not anticipate that they will restart.

The Commission recognises the historical economic and social significance of mercury production and trade in Almadén, dating back to Roman times. The Commission also strongly supports the provision of help to develop new areas of business and employment. The area is already eligible for Community support as part of an Objective 1 region (Castile-la-Mancha), and is expected to remain so in the next Structural Fund programming period.

6. REDUCING DEMAND

Mercury demand is around 3,600 tonnes per year globally, and in 2003 was around 300 tonnes in the then 15 EU Member States. Use of mercury is declining, at both global and EU levels, yet some significant uses remain. The main global uses are gold mining, batteries and the chlor-alkali industry, together accounting for over 75% of consumption. Of these, only use in the chlor-alkali industry is presently significant across the EU, but the mercury cell process is not considered to be BAT⁹ under the IPPC Directive, and is being phased out. Mercury use in gold mining is known to be significant in French Guyana (where the French authorities are considering a ban) but not in the European region of the EU. Directive 91/157/EEC¹⁰ limits use of mercury in batteries.

⁹ Reference Document on Best Available Techniques (BAT) in the Chlor-Alkali Manufacturing Industry adopted by the Commission in December 2001, <http://eippcb.jrc.es>.

¹⁰ Council Directive 91/157/EEC of 18 March 1991 on batteries and accumulators containing certain dangerous substances, OJ L 078, 26.3.91.

As the chlor-alkali industry phases out mercury cells, dental amalgam will become the EU's major mercury use. It is therefore appropriate to re-examine the scope for substitution. This is especially important as Member States can encourage substitution, but the coverage of dental amalgam under the medical devices Directive¹¹ limits the scope for restrictive national measures.

Action 6. In the short term the Commission will ask the Medical Devices Expert Group to consider the use of mercury in dental amalgam, and will seek an opinion from the Scientific Committee on Health and Environmental Risks, with a view to considering whether additional regulatory measures are appropriate.

The main mercury product group not covered by Community law is measuring and control equipment. The Commission is due to present proposals to include medical devices and monitoring and control instruments under Directive 2002/95/EC¹², which already covers lighting and other electrical and electronic equipment. However, some of the larger mercury uses in this product group (thermometers, blood pressure gauges and barometers) are not electrical or electronic equipment, so would not be covered. The ExIA finds that additional action in this area is appropriate.

Action 7. The Commission intends to propose in 2005 an amendment to Directive 76/769/EEC¹³ to restrict the marketing for consumer use and healthcare of non-electrical or electronic measuring and control equipment containing mercury.

Action 8. The Commission will further study in the short term the few remaining products and applications in the EU that use small amounts of mercury. In the medium to longer term, any remaining uses may be subject to authorisation and consideration of substitution under the proposed REACH Regulation¹⁴, once adopted.

7. ADDRESSING SURPLUSES AND RESERVOIRS

The largest holding of mercury in the EU is that of the chlor-alkali industry. Given the intention to phase out exports, much of this mercury will need to be stored or disposed of. Some Member States are already developing policies in this area¹⁵. The ExIA finds that permanent disposal would be optimal from an environmental point of view, but is presently too expensive and technically uncertain to pursue at

¹¹ Council Directive 93/42/EEC of 14 June 1993 concerning medical devices, OJ L 169, 12.7.93.

¹² Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restrictions of the use of certain hazardous substances in electrical and electronic equipment (RoHS), OJ L 37, 13.2.2003.

¹³ Directive 76/769/EEC on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations, OJ L 262, 27.9.76.

¹⁴ Proposal for a Regulation of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency and amending Directive 1999/45/EC and Regulation (EC) {on Persistent Organic Pollutants}, COM(2003) 644 final, 29.10.2003.

¹⁵ For example, Sweden has introduced a requirement for stabilisation and storage of mercury in deep bedrock, while Germany is examining the idea of storing metallic mercury in disused salt mines.

Community level. The need to find cost-efficient storage arrangements is therefore an important area for further examination.

Action 9. The Commission will take action to pursue the storage of mercury from the chlor-alkali industry, according to a timetable consistent with the intended phase out of mercury exports by 2011. In the first instance the Commission will explore the scope for an agreement with the industry.

There is also a large amount of mercury in products already circulating in society. Once a product becomes “waste”, present Community policy generally encourages recovery over disposal. More active collection and recycling of mercury could be considered. However, some Member States argue that mercury should not be recovered for re-use, but rather should be taken out of circulation via storage or disposal.

Action 10. The Commission will undertake further study in the short to medium term of the fate of mercury in products already circulating in society.

8. PROTECTING AGAINST EXPOSURE

A recent opinion of the European Food Safety Authority (EFSA) on the risk from mercury in food¹⁶ found that people who eat a lot of fish and fishery products, in particular large predatory fish, can reach or exceed the established safe levels. The Commission is reviewing risk management options in the light of EFSA's opinion, including the maximum limits in Regulation (EC) No. 466/2001¹⁷ on the mercury content of fishery products. However, the scope to reduce these levels is limited. Other solutions, like the targeted consumer advice issued by the Commission¹⁸ and Member States, are also needed.

Action 11. In the short term, EFSA will investigate further specific dietary intakes of different types of fish and seafood among vulnerable subpopulations (e.g. pregnant women, children).

Action 12. The Commission will provide additional information concerning mercury in food as new data become available. National authorities will be encouraged to give advice in the light of local specificities.

¹⁶ http://www.efsa.eu.int/science/contam/contam_opinions/259_en.html.

¹⁷ Commission Regulation (EC) No 466/2001 of 8 March 2001 setting maximum levels for certain contaminants in foodstuffs, OJ L 77, 16.3.2001.

¹⁸ http://europa.eu.int/comm/food/food/chemicalsafety/contaminants/information_note_mercury-fish_12-05-04.pdf.

Community law also limits the mercury content of drinking water¹⁹. The recently agreed 4th air quality daughter Directive²⁰ does not set a target value or quality standard for mercury – levels observed in ambient air are below those believed to have adverse health effects – but concentrations and deposition are to be measured to show geographical and temporal trends.

The existing Community legislation on health and safety at work provides an adequate framework to protect workers against risks to their health and safety from exposure to mercury. Under this framework, the Commission is developing an occupational exposure limit value for mercury.

More broadly, action will be taken under the European Environment and Health Action Plan 2004-2010²¹ to improve determination of human exposure, by developing integrated monitoring of the environment and food and investigating the scope for a coherent approach to biomonitoring. This will cover a range of environmental stressors including mercury.

9. IMPROVING UNDERSTANDING

Gaps in knowledge on the mercury problem and its possible solutions can be filled by research, development and pilot projects. Areas for such activities include human health effects, how mercury moves or is retained in the environment, and questions of ecosystem sensitivity and toxicity. Effort should also be directed at addressing issues associated with mercury in products, emissions and wastes, particularly the development of techniques to reduce mercury releases from coal combustion and other major sources, and to treat, stabilise and permanently dispose of surplus mercury and mercury-containing wastes.

Action 13. Priorities for mercury research will be addressed in the 7th RTD Framework Programme and other appropriate funding mechanisms.

10. SUPPORTING AND PROMOTING INTERNATIONAL ACTION

It is important to make progress in addressing the mercury problem globally, in particular to reduce emissions, and also to reduce supply and demand.

There is considerable potential to reduce mercury emissions and foster the use of BAT, especially in the power, metals, cement, chlor-alkali and waste sectors. EU action has already reduced emissions significantly, and can be offered as an example in international, regional and bilateral fora. Technology transfer will also be important.

¹⁹ Council Directive 98/83/EEC of 3 November 1998 on the quality of water intended for human consumption, OJ L 330, 5.12.98.

²⁰ Proposed Directive of the European Parliament and of the Council relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air, COM(2003) 423 final, 16.7.2003. Final text not yet published in the Official Journal.

²¹ COM(2004) 416 final, 9.6.2004.

Global demand for mercury is already decreasing, but the nature of the mercury problem makes it important to take steps to further manage demand downwards. Measures should be taken to phase out mercury use where suitable alternatives are available, and to strictly control it where they are not. The Commission considers that purposeful demand reduction efforts could cut global mercury use significantly – to around 1,000 tonnes or less by 2020. This relies especially on cutting use in the chlor-alkali sector and batteries, where great potential has again been illustrated in the EU, and in gold mining.

However, the fall in global demand will not meet its potential if mercury supply stays high and cost low, stimulating continued and new uses. Parallel action is needed to reduce supply. The US decision to store mercury previously stockpiled for strategic purposes is welcomed.

Action 14. The Community, Member States and other stakeholders should pursue input to international fora and activities, and bilateral engagement and projects with third countries, including technology transfer, to address the mercury problem.

Action 15. The Commission will consider establishing a specific funding scheme for research and pilot projects to reduce mercury emissions from coal combustion in countries with a high dependency on solid fuels, e.g. China, India, Russia, etc., similar to the CARNOT programme that promotes the clean and efficient use of solid fuels.

Action 16. The Community should promote an initiative to make mercury subject to the PIC procedure of the Rotterdam Convention.

Action 17. The Community and Member States should continue to support work under the Heavy Metals Protocol to the UNECE Convention on Long Range Transboundary Air Pollution.

Action 18. The Community, Member States and other stakeholders should also support the UNEP Global Mercury Programme, e.g. through review of materials and provision of technical knowledge and human and financial resources.

Action 19. The Community and Member States should support global efforts contributing to reduced use of mercury in the gold mining sector, e.g. the UNDP/GEF/UNIDO Global Mercury Project. They will also consider possibilities to support individual developing countries through the various instruments related to development cooperation assistance, taking national strategies for development into account.

Action 20. To reduce mercury supply internationally, the Community should advocate a global phase-out of primary production and encourage other countries to stop surpluses re-entering the market, under an initiative similar to that of the Montreal Protocol on substances that deplete the ozone layer. To support this objective, the envisaged amendment of Regulation (EC) No. 304/2003 would phase out the export of mercury from the Community by 2011.

11. REVIEW

The ExIA identifies a number of significant milestones in the short to medium term under current Community and international measures which will enable further review of the mercury problem, the success of policies and possible additional actions. More broadly, the Commission intends to review the mercury strategy as a whole by the end of 2010. This review will also meet the requirement to report under the 4th air quality daughter Directive by this time on the merit of further action on mercury, taking account of measures adopted pursuant to this strategy. The Commission intends to conduct the review using data from various sources and covering all media, rather than just from an air quality perspective.

12. CONCLUSIONS

Mercury poses a threat in the Community and globally. This Communication marks the first step in the implementation of a coherent Community strategy on this subject. It is presented ahead of the intended legislative proposals announced herein, to enable conclusion of a Community position on mercury in time for the UNEP Governing Council of February 2005.

The Commission requests the Council, in response to its invitation to present a mercury strategy, and the European Parliament, to endorse the approach set out in this Communication.