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

**on the exemption from the ban on cadmium granted for portable batteries and  
accumulators intended for use in cordless power tools**

**pursuant to Article 4(4) of Directive 2006/66/EC of 6 September 2006 on batteries and  
accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC**

## INTRODUCTION

The Batteries Directive (Directive 2006/66/EC<sup>1</sup>) seeks to improve the environmental performance of batteries and accumulators and of the activities of all operators involved in their life-cycle. It lays down specific rules on placing batteries and accumulators on the market and on collection, treatment, recycling and disposal of waste batteries and accumulators. In particular, it prohibits placing on the market batteries and accumulators containing mercury and cadmium.

This prohibition applies above set thresholds and is subject to a number of exemptions. One specific exemption, laid down in Article 4(3)(c) of the Directive, is for use of cadmium in portable batteries and accumulators intended for use in cordless power tools (CPTs). This exemption is discussed in this report. Examples of CPTs include tools used by consumers and professionals for turning, milling, sanding, grinding, sawing, cutting, shearing, drilling, making holes, punching, hammering, riveting, screwing, polishing or similar processing of wood, metal and other materials or for mowing, cutting and other gardening activities.

Article 4(4) of the Directive requires the Commission to review the exemption granted by Article 4(3)(c) and to submit a report to the European Parliament and to the Council by 26 September 2010. The report is to be accompanied by relevant proposals with a view to prohibiting cadmium in batteries and accumulators, if appropriate. In this report, the term 'batteries' is used to mean both portable batteries and accumulators.

## INFORMATION GATHERED TO ASSESS THE EXEMPTION

In preparation for potential proposals for legislation concerning the exemption, the Commission gathered evidence on the advantages and disadvantages of possible policy options, including their economic, social and environmental impact, in line with its impact assessment guidelines<sup>2</sup>.

In 2003 the Commission published the 'Impact assessment on selected policy options for revision of the Batteries Directive'<sup>3</sup>, carried out by Bio Intelligence Service, in order to prepare the review of the old Batteries Directive (Directive 91/157/EEC, subsequently repealed by Directive 2006/66/EC). The experts stated that, in the case of portable nickel-cadmium (NiCd) batteries and the related local risks, a calculation of risk factors data did not rule out the relevance of a ban on use of cadmium. However, no viable substitutes for portable NiCd batteries in CPTs appeared to be available at the time of the report. Collection and recycling rates for portable NiCd batteries, along with enforcement of existing regulations applicable to incinerators and landfill facilities, were described as other significant factors in reducing local risks.

New information, going beyond that available in 2006 when the Directive was adopted, has been generated since then, especially by the European Union Risk Assessment Report (RAR, 2008), a study entitled 'Cadmium in power tool batteries' published by the Swedish

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<sup>1</sup> OJ L 266, 26.9.2006, p. 1. Directive as last amended by Directive 2008/103/EC (OJ L 327, 5.12.2008, pp. 7–8).

<sup>2</sup> See [http://ec.europa.eu/governance/impact/commission\\_guidelines/docs/iag\\_2009\\_en.pdf](http://ec.europa.eu/governance/impact/commission_guidelines/docs/iag_2009_en.pdf).

<sup>3</sup> See [http://ec.europa.eu/environment/waste/batteries/pdf/eia\\_batteries\\_final.pdf](http://ec.europa.eu/environment/waste/batteries/pdf/eia_batteries_final.pdf).

Environmental Protection Agency (2009) and a specific study ordered by the Commission in 2009 in order to synthesise and assess the information available.

In 2008 the Commission published a Risk Assessment Report<sup>4</sup> (RAR) on the risks to human health and the environment from substances containing cadmium (i.e. cadmium metal and cadmium oxide). The RAR found that in the European Union cadmium is used mainly in the manufacture of NiCd batteries. The assessment of the risks showed a need for further specific measures to limit the risks to workers and the environment from exposure to cadmium. However, the RAR, like the related EU risk reduction strategy for cadmium adopted by the Commission in 2008<sup>5</sup>, did not identify any need for further measures to address the potential risks associated with placing on the market, handling, recycling and disposing of NiCd batteries.

In 2009 the Swedish Environmental Protection Agency published a report on ‘Cadmium in power tool batteries - The possibility and consequences of a ban’<sup>6</sup>. The report stated that it is possible to replace NiCd batteries in power tools. In particular, development of one alternative technology - lithium-ion (Li-ion) batteries - has progressed extremely rapidly over the last few years. The different types of battery technologies all have advantages and disadvantages. Today Li-ion and nickel-metal hydride (NiMH) are fully competitive alternatives to NiCd battery technologies, in terms of both price and performance.

In 2009 the Commission ordered a synthesis study to assist it with the review of the exemption. The study was published on the DG ENV website<sup>7</sup> in March 2010. The objective was to assess the available data and information and to identify and address remaining needs for a review of the exemption. The available data indicated that it could be technically feasible today to replace NiCd batteries by existing Li-ion and NiMH battery technologies, with certain reservations in applications where the temperature lies below 0°C.

The contractors attempted to calculate the economic and social impact of a possible ban for CPTs, but ran into great difficulties in estimating the health and environmental benefits. Taking only the well-founded annual costs and benefits into account, the annual benefits are estimated to be about equal to the costs. The available data are highly uncertain today to identify the possible health and environmental benefits. A comparative life-cycle assessment of the three main battery technologies in question does not yet exist, but is needed in order to complete a comprehensive cost-benefit analysis for the review of the exemption.

## **STAKEHOLDER CONSULTATION BY THE COMMISSION**

The Commission organised an on-line public stakeholder consultation from 10 March to 10 May 2010, based on the synthesis study published. Stakeholders were invited to give their

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<sup>4</sup> See the EU Risk Assessment Report (RAR) on Cd and CdO at:

[http://ecb.jrc.ec.europa.eu/DOCUMENTS/Existing-Chemicals/RISK\\_ASSESSMENT/REPORT/cdmetalreport303.pdf](http://ecb.jrc.ec.europa.eu/DOCUMENTS/Existing-Chemicals/RISK_ASSESSMENT/REPORT/cdmetalreport303.pdf).

<sup>5</sup> See the Commission Communication on the results of the risk evaluation and the risk reduction strategies for the substances cadmium metal and cadmium oxide at:

[http://ecb.jrc.ec.europa.eu/DOCUMENTS/Existing-Chemicals/RISK\\_ASSESSMENT/OJ\\_RECOMMENDATION/ojrec7440439.pdf](http://ecb.jrc.ec.europa.eu/DOCUMENTS/Existing-Chemicals/RISK_ASSESSMENT/OJ_RECOMMENDATION/ojrec7440439.pdf).

<sup>6</sup> See <http://www.naturvardsverket.se/Documents/publikationer/978-91-620-5901-9.pdf>.

<sup>7</sup> ESWI study (2010) available at:

[http://ec.europa.eu/environment/waste/batteries/pdf/cadmium\\_report.pdf](http://ec.europa.eu/environment/waste/batteries/pdf/cadmium_report.pdf).

views on the environmental, social and economic impact that might result from any future ban on cadmium in portable batteries and accumulators intended for use in cordless power tools. They were invited to make additional comments and to provide technical and scientific evidence on the exemption.

Some stakeholders favoured withdrawal of the exemption for use of NiCd batteries in cordless power tools, since they viewed the economic costs as minimal and the environmental benefits as substantial in the long term. Others opposed withdrawal of the exemption and underlined that the data on the economic, environmental and social impact do not justify withdrawal. Overall, the stakeholder consultation confirmed the need for a comparative life-cycle assessment in order to provide a firm basis for the cost-benefit analysis. A summary of the stakeholders' comments is available on the DG ENV website<sup>8</sup>.

## CONCLUSION

Article 4(4) of the Directive requires the Commission to review the exemption granted by Article 4(3)(c) and to submit a report to the European Parliament and to the Council by 26 September 2010. The report is to be accompanied by relevant proposals with a view to prohibiting cadmium in batteries and accumulators, if appropriate.

A study carried out for the Commission in 2003 concluded that no viable substitutes for the exemption existed at the time. In the meantime, new information has become available, including a new Risk Assessment Report, a report from the Swedish Environmental Protection Agency and a study for the Commission synthesising the information available. Today Li-ion and NiMH appear fully competitive alternatives to NiCd battery technology, albeit with certain advantages and disadvantages. While withdrawal of the exemption could possibly yield substantial environmental and health benefits, estimation of the benefits is highly uncertain. It cannot currently be demonstrated that the benefits of withdrawing the exemption would clearly outweigh the costs.

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<sup>8</sup> Results of stakeholder consultation: [http://ec.europa.eu/environment/consultations/batteries\\_en.htm](http://ec.europa.eu/environment/consultations/batteries_en.htm).

The studies available and the discussion with and between stakeholders all suffer from the lack of substantive comparative data on the impact of the battery types available for cordless power tools. Only a comparative life-cycle assessment of the three main alternatives can lay the foundation for a sound impact assessment on the exemption and dispel the current uncertainty.

The Commission concludes that at this juncture it is not appropriate to bring forward proposals to withdraw the exemption for cordless power tools from the ban on cadmium in batteries and accumulators. Any proposal for legislation on this matter, based on an impact assessment in line with Commission policy, would require comparable technical and scientific information on the costs and benefits of cadmium and its substitutes in portable batteries and accumulators for CPTs. The Commission will therefore order a comparative life-cycle analysis, generating this information beyond the existing scientific literature and including a peer review, as required by scientific quality standards. Based on that information and in line with Article 4(4) of the Batteries Directive (Directive 2006/66/EC), the Commission will, if appropriate, then proceed with proposals for legislation with a view to prohibiting cadmium in batteries and accumulators in CPTs by withdrawing the existing exemption.