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Study on hazardous substances in electrical and electronic equipment, not regulated by the RoHS Directive

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1 Background and Objectives

Following the requirements of Article 4 (1) of the Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS Directive), Member States of the European Union have to ensure that "from 1 July 2006, new electrical and electronic equipment put on the market does not contain lead, mercury, cadmium, hexavalent chromium, PBB or PBDE." The Annex to the Directive lists a limited number of applications of lead, mercury, cadmium and hexavalent chromium, which are exempted from the requirements of Article 4 (1).

Article 4 (3) mentions that "as soon as scientific evidence is available, and in accordance with the principles on chemicals policy" EU bodies shall decide on the prohibition of other hazardous substances and the substitution thereof by more environment-friendly alternatives which ensure at least the same level of protection for consumers.

Under Article 6, it is provided that the Commission has to review the list of restricted substances in Article 4 (1) on the basis of scientific facts and taking the precautionary principle into account. In particular the Commission has to present proposals for including in the scope of this Directive equipment which falls under categories 8 and 9 set out in Annex IA to Directive 2002/96/EC (WEEE) [1]. It is further mentioned, that particular attention shall be given to impacts on the environment and human health of other hazardous substances and materials used in Electrical and Electronic Equipment (EEE) and that the Commission shall examine feasibility of replacing such substances and materials. It shall then "present proposals to the European Parliament and to the Council in order to extend the scope of Article 4 as appropriate".

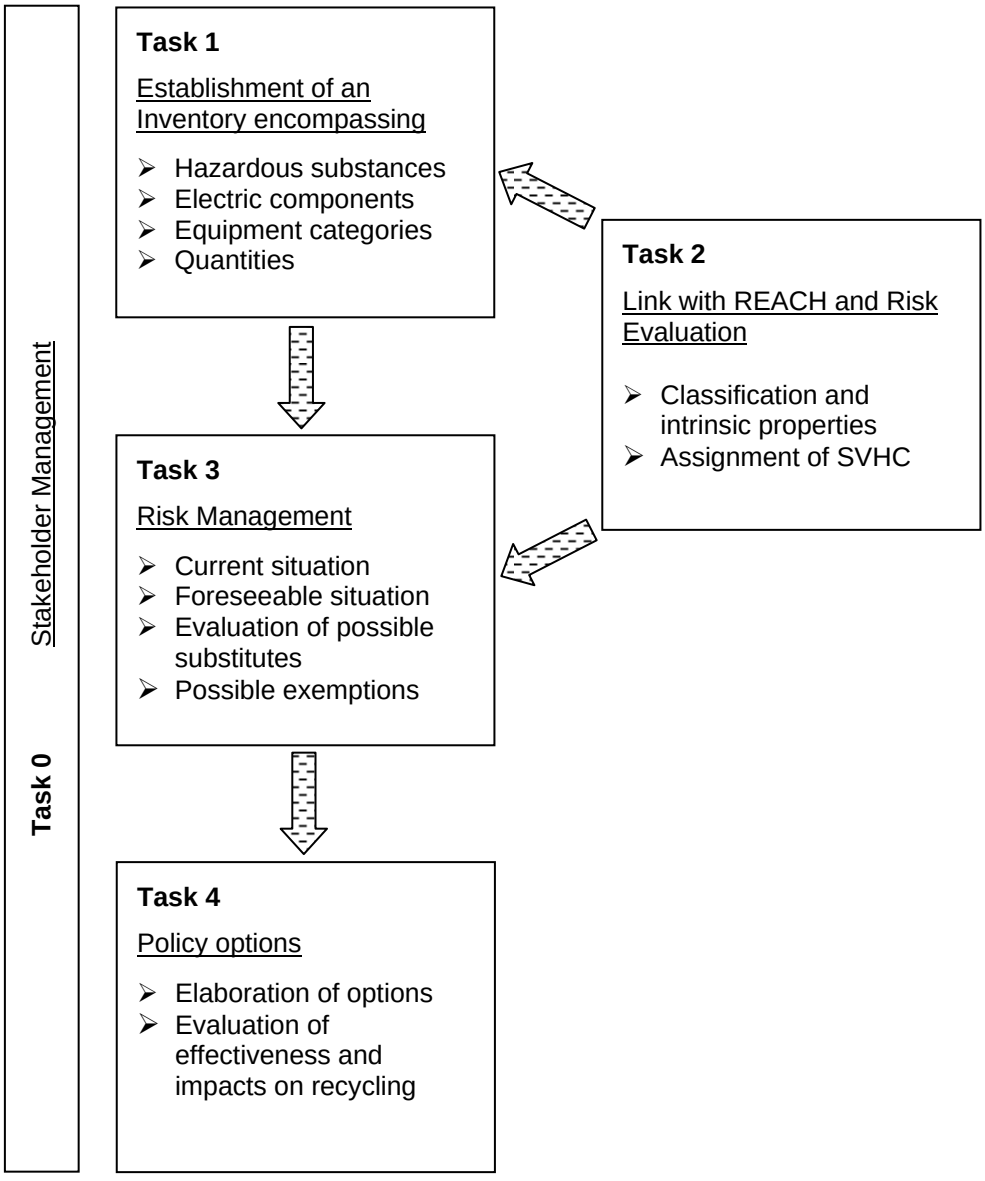
The objective of the present study is thus to provide the necessary support to the Commission services for fulfilling RoHS Article 6 requirements, including investigation on:

- Other hazardous substances or materials used in EEE
- How they are managed currently
- Possible substitutes as well as the sustainability (environmental, economic, social) characteristics of these other hazardous substances and possible substitutes
- Appropriate policy options

[1] Categories 8 and 9 set out in Annex IA to Directive 2002/96/EC (WEEE) comprise medical devices (with the exception of all implanted and infected products) as well as monitoring and control instruments, respectively.

2 Scope

Figure 1 below gives an overview on the tasks that will be accomplished by Öko-Institut.



The technical, scientific and policy evaluation procedure foreseen under Tasks 0 – 4 is described in more detail in Table 1 below. The goal of these tasks is to perform a critical review of existing data, to consult involved parties, to carry out a sound analysis followed by an assessment of the best options.

Table 1: Analysis and assessment procedure

Tasks	**Steps**	**Procedure, methodological background**
Task 0 Stakeholder involvement	Involvement of stakeholders at all stages of the analysis: • to provide all necessary information about progress of the project • to provide opportunity for a timely and appropriate contribution and participation	• Establishment of the project-specific website http://hse-rohs.oeko.info • Establishment of the project-specific e-mail address hse-rohs@oeko.info • Regular newsletter to registered stakeholders • Stakeholder workshop on results of Task 4
Task 1 Inventory of other hazardous substances in EEE	Check: • Which other hazardous substances (not regulated by RoHS) are used in EEE? • Current and future quantities in WEEE categories? • Other regulations (EU/national level/third countries) applying?	• Review of existing lists of hazardous substances (e.g. Annex I of Directive 67/548/EEC, CMR1,2,3 substances[2], PBT/vPvB substances[3], etc.) • Review of literature and research databases • Direct consultation with stakeholders, experts, EU or third country national authorities • Elaboration of stakeholder questionnaire on need for further information
Task 2 Link with REACH and risk evaluation	• Classification and intrinsic properties of identified substances in inventory according to REACH • Identify production volume band of the substances and data requirements corresponding to Annex VI-X REACH • Are the identified substances considered SVHC[4] following REACH? • For which substances are there Risk Assessment Reports (RAR) available? • Have the identified substances been assessed by the EU PBT Working Group?	• Systematically work through inventory established under Task 1 in order to apply REACH classification • Establish a ranked table with overview on REACH classification and intrinsic properties as well as risk characterisation and exposure assessment • Mark a limited number of SVHC and their EEE applications that could be candidates for inclusion into RoHS scope; include short summary of risk assessment

[2] Substances that are classified as cancerogenic, mutagenic and reprotoxic

[3] Substances that are considered as persistent, bioaccumulative and toxic or as very persistent and very bioaccumulative

[4] Substances of Very High Concern (SVHC) under REACH (Art. 57, a-f)

Tasks	Steps	Procedure, methodological background
	• What could be a possible outcome of a risk assessment under REACH?	
Task 3 Risk management	• Identify indications about the risks for environment and human health • Analyse how these risks are managed at the various stages of the life cycle of the product • Identify a limited number of substances and their EEE applications that have particular concern (combine assessment of intrinsic properties with risk characterisation and exposure assessment) • Analyse possible substitutes available today, the advantages and disadvantages of these substitutes • Compare potential assets and drawbacks caused by substitution	• Expert consultation, esp. component and equipment manufacturers, chemical manufacturers, NGOs and scientific community • Review of scientific and patent literature • Check whether LCAs or risk assessments exist • Assessment of hazardous properties of substances as well as expected exposure situation and effects on occupational health on basis of available information • Rely on publicly available information on potential negative impacts of substitution
Task 4 Elaboration of policy options	• Examine what policy options exist for identified substances in EEE applications • Screening of other substance-related legislation in the EU and third countries • Carry out a stakeholder and risk analysis for each option • Take elements of the EU impact assessment into account; check increase of costs • Draw conclusions and final recommendation for the Commission	• Establish different policy scenarios in an overview, raking them according to practicability, risk reduction, other regulations available, impacts, effect on costs and stakeholder analysis • Choose for each substance two “best” options depending on different priority criteria • Work through guidelines of EU impact assessment including aspects of administrative costs

3 Project set-up

The project is lead by Carl-Otto Gensch, Head of the Sustainable Products and Material Flow Division at Öko-Institut; project management and co-ordination is done by Rita Groß.

The project tasks will be performed in close co-operation with the European Commission and stakeholders (manufacturers, retailers and distributors of EEE and its associations, NGOs, independent experts, etc.). This includes:

- Project-specific website on http://hse-rohs.oeko.info where relevant documents and project activities will be published.
- Central communication access for stakeholders via the project specific e-mail address hse-rohs@oeko.info .
- Information about the progress of the evaluation process via e-mail, telephone and / or announcements on the project specific website.
- Stakeholder workshop in April 2008 to receive input on results of task 4 (i.e. discuss proposed policy options that will have been elaborated to deal with risk and impacts of the use of hazardous substances in EEE).

If necessary, another technical stakeholder workshop may be held at an earlier point of time (November/December 2007) to discuss the inventory on hazardous substances.

4 Time schedule

The project started 4 October 2007 and will run over a period of 8 months. State of affairs concerning the progress of the project will be reported in regular newsletters to the Commission and to registered stakeholders. An interim report will be submitted to the Commission by 4 February 2008. The draft final report will be submitted to the Commission by 4 April 2008 and published on the project specific website. A stakeholder workshop will be held after publishing the draft final report in April 2008. The final report will be submitted by 4 June 2008 and published on the dedicated website.