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EXPERT GROUP ON BEST AVAILABLE
TECHNIQUES AND BEST ENVIRONMENTAL
PRACTICES

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REPORT BY THE SECRETARIAT ON PREPARATORY WORK FOR THE MEETING

Submission by Thailand and Germany to the sixth session of the Intergovernmental Negotiating Committee for an International Legally Binding Instrument for Implementing International Action on Certain Persistent Organic Pollutants on the regional workshop held in Bangkok, Thailand, in March 2002 on national action on measures to reduce or eliminate the releases of by-products from unintentional production as requested by the Stockholm Convention on Persistent Organic Pollutants²

Note by the secretariat

Subparagraph (a) of Section VI of the terms of reference for the Expert Group on Best Available Techniques and Best Environmental Practices contained in Annex VII of UNEP/POPS/INC.6/22 and also in Appendix 3 of UNEP/POPS/EGB.1/INF/7 lists as possible reference material for the first meeting of the Expert Group the conference room paper UNEP/POPS/INC.6/CRP.1 submitted by Thailand and Germany to the sixth session of the Intergovernmental Negotiating Committee for an International Legally Binding Instrument for Implementing International Action on Certain Persistent Organic Pollutants on the regional workshop held in Bangkok, Thailand, from 13 to 15 March 2002, on national action on measures to reduce or eliminate the releases of by-products from unintentional production as requested by the Stockholm Convention on Persistent Organic Pollutants. Attached is the text of UNEP/POPS/INC.6/CRP.1 as it was submitted. This should not be confused with the attachment to UNEP/POPS/EGB/INF/4 which provides the final proceedings of the Bangkok Workshop.

¹ UNEP/POPS/EGB.1/1.

² This document has not been formally edited.

Annex

**INTERSESSIONAL ACTIVITIES RELATING TO RESOLUTIONS 4,6 AND 7 IN PREPRATION
FOR THE CONFERENCE OF THE PARTIES**

ON

Guidance on best available techniques and best environmental practices pursuant to Article 5 of
the Stockholm Convention on Persistent Organic Pollutants **

Regional Workshop on
National action on measures to reduce or eliminate the releases of by-products from unintentional
production as requested by the Stockholm Convention on POPs

Final – Report

I. Introduction

1. A “Regional Workshop on National Action on measures to reduce or eliminate the releases of by-products from unintentional production as requested by the Stockholm Convention on POPs” was organized and held by the governments of the Kingdom of Thailand, the Federal Republic of Germany together with UNEP Chemicals, from 13 to 15 March 2002 in Bangkok.
2. The aim of the workshop was to discuss how to develop regional and national action for reducing or eliminating releases of unintentionally produced by-products, such as PCDD/PCDF (polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans), HCB (hexachlorobenzene) and PCB (polychlorinated biphenyls), when implementing Article 5 and Annex C of the Stockholm Convention on POPs. Contributions were presented by representatives and experts from Southern and Eastern Asia and from OECD countries.
3. It was intended to achieve a common understanding of Article 5 and Annex C and to discuss methods and strategies to develop national or regional action plans based on experiences made by countries of the region and OECD countries including the following elements:
 - Release Inventories,
 - Release Reduction Instruments: Strategies and instruments to minimize and, where feasible, to eliminate emissions of by-products as there are:
 - best available techniques (BAT),
 - best environmental practices (BEP)
 - Implementation Measures.
4. An important task of this workshop was also to prepare first elaborations for a more comprehensive concept of implementation of ‘best available techniques’ (BAT) and ‘best environmental practices’ (BEP). The conclusions and recommendations of this workshop could be the basis for the development of future guidance on BAT and BEP according to resolutions 4 and 7 of the Diplomatic Conference on interim activities on POPs to facilitate further discussions on the by-product related issues.
5. Based on presentations and discussions the elements of a national action plan were highlighted considering information from industrialized countries and socio – economic conditions of developing countries from the region.

** Stockholm Convention, Article 5; Conference of Plenipotentiaries of the Stockholm Convention, resolutions 4 and 7.

II. Conclusions and recommendations of the Workshop

6. The participants of the workshop agreed, that a general structure of an action plan includes a stepwise approach as foreseen in Article 5:
- a) Identification of sources and creation of source and release inventories
 - b) Evaluation of the relevance of the sources in the inventory,
 - c) Evaluation of available release reduction measures (BAT/BEP) for relevant sources according to relevant criteria (see Section B),
 - d) Implementation of release reduction measures,
 - e) Control of effectiveness by measurement and monitoring.

including as focal pillars the elements

- **Source and release inventories** (dealt with in **Section A**),
- **Release reduction measures (BAT, BEP** – dealt with in **Section B**) and
- **Implementation** (dealt with in **Section C**).

Section A

Inventories - development and maintenance of source inventories and release estimates

7. The development and maintenance of source inventories for unintentionally produced POPs are provisions laid down in the Stockholm Convention, Article 5 (a) (i).
8. **Aims of the discussions in section A** were identified:
- (i) To present UNEP's methodology to establish PCDD/PCDF inventories (the "Toolkit");
 - (ii) To present experiences with inventory making from developed and developing countries;
 - (iii) To propose/agree about a strategy to fulfil the provisions on inventory making under the Stockholm Convention.
9. Assistance in source identification is given by the Convention in Annex C, Parts II and III. However, this list should not be understood as exhaustive. In individual countries other sources may contribute significantly to the overall releases.

Conclusions of Section A

10. The development of a release inventory is an obligation from the Convention and part of the national action plan on unintentionally produced POPs.
11. A methodology is needed that reliably identifies major PCDD/PCDF sources and releases to all media (air, water, land, products, residues).
12. A prioritization of major sources will be the basis for any strategy for elimination or reduction of unintentionally produced POPs.
13. At the national level, the development of a release inventory will need participation and buy-in from all stakeholders in a country. Countries with experiences in dioxin inventories had established an intragovernmental steering group to lead the process.
14. The basic approach for the establishment of release inventories includes the following steps:
- (i) Identification of relevant processes and activities in the country by a screening matrix of source categories ,

- (ii) Examination of the relevant processes to identify key characteristics, which influence releases of by-products (taking into consideration all sources in Annex C). This step may be assisted by the development of questionnaires where appropriate to compile information on activity, input materials, technology, performance, operational parameters, outputs, *etc.*
- (iii) Quantification of releases by multiplying the national activity with emission factors. For this purpose, either emission factors provided in the Toolkit or own nationally measured data (Note: these should have been subject to QA/QC) can be used.
- (iv) Expand results from each individual sub-category to nation-wide basis and make full inventory as part of the national action plan.
- (v) Report the PCDD/PCDF inventory according to established guidelines to ensure comparability and identify gaps. Data gaps may include:
 - no reporting for sources that are known to exist in a country but could not be covered;
 - source not mentioned in the Toolkit (or in Annex C, Part III) at all;
 - no emission factor available (either not yet determined or process differs largely from processes described in the Toolkit)

15. The developed release inventory will

- (i) be complete for identified sources, in a consistent and comparable format and easy to update;
- (ii) cover all identified (and quantified) industrial and non-industrial sources in a country / region,
- (iii) cover all release vectors (air, water, land, products, residues),
- (iv) identify gaps in the inventory (and the methodology),
- (v) prioritise sources according to major releases; however it will not be suitable to set reduction targets;
- (vi) serve as starting point of a national Pollutant Release and Transfer Registers (PRTRs)
- (vii) initiate strategies for release reduction, research, monitoring, legislation, *etc.*

16. Some felt that while the Toolkit is a useful initial management tool for setting priorities and identifying possible unnoticed sources, it cannot be considered an accurate measure of actual PCDD/PCDF releases.

17. Some cautioned that the methodology of the Toolkit should not be considered a tool for pollution control in the absence of monitoring or testing.

Recommendations

18. The Toolkit serves as a useful starting point for all countries to report their first inventories to the INC/COP;

19. The Toolkit should be further developed to:

- (i) Fill data gaps of emission factors in the Toolkit;
- (ii) Revise existing emission factors as new information becomes available;
- (iii) Include newly identified sources to the inventory.

20. It was recommended that for future inventories sampling and analysis of PCDD/PCDF sources will be included into the inventory making.

21. The development of a national database containing activity data and emission factors of all sources covered in the inventory may assist countries to update their inventories.
22. Consideration of the approach described in the Toolkit will result in comparable national release inventories and will include a priority list of major sources, which will enable countries to start actions to minimize or eliminate sources of unintentionally produced POPs according to Article 5 and Annex C. It may also serve as a starting point for national Pollutant Release and Transfer Registers (PRTRs).

Section B

Instruments for reduction and/or elimination – Best available techniques, best environmental practices

23. **Aims of the discussions in section B** were identified:
 - (i) A first part of the section was to create a common understanding of the concept BAT and to discuss potential problems of implementing BAT in Asian countries with their specific socio-economic conditions and to contribute to resolution 4 (Interim activities) of the Conference of Plenipotentiaries in Stockholm.
 - (ii) A second part of the section was to develop first ideas and elements of a future more comprehensive concept for implementing BEP according to Article 5 in connection with Annex C of the Stockholm Convention on POPs to be presented to INC 6 for future BEP guidance. See resolution 7 of the Conference of Plenipotentiaries in Stockholm.

Conclusions of Section B

24. The relation of preventive and release reduction instruments according to the definitions in the Stockholm Convention in Article 5 (f) were highlighted:
 - Best environmental techniques (BAT) and
 - Best environmental practices (BEP) with.
25. For both **release reduction instruments** (BAT/BEP) as a main point was agreed on, that:
 - (i) BAT and BEP cannot be identified separately from each other. There is an overlap between both, which conducts to an additional interpretation of BEP:
 - BEP measures cover those release reduction activities, which include the available range of technical activities or measures defined by BAT and which also address all kinds of infrastructural action and management, planning of general procedures and strategies how to implement them
 - (ii) Basing on the understanding of BAT and BEP as connected instruments for release reduction - consolidated conclusions are summarized.
26. The elements, which could constitute BEP and BAT measures were discussed. Some elements being BEP as well as BAT were identified:
 - (i) Substitution principle according to Stockholm Convention in Article 5 (c) and
 - (ii) The elements of general guidance on BAT and BEP listed according to the Stockholm Convention Annex C, Part V (A):
27. For BAT it was emphasized that an effective information exchange is needed to enable Parties to make an informed choice in the selection of BAT. For the priority source categories in Annex

C, Part II, such guidance may be developed as a list of appropriate technical measures with some information about benefits and drawbacks and be adopted by the COP. For other source categories, such as in Part III, which may be dominant categories in individual countries, a decentralized network of information and expertise may help Parties to get appropriate information. Industrialized countries should make their information on BAT measures accessible and transparent. Data provided by this network should be assessed independently. This network should also be built up as interim information exchange mechanism for the categories listed in Annex C, Part II as long as a centralized guidance does not exist.

28. As developed in Annex C, the BAT concept does not represent the prescription of any specific technology but is directed at fulfilling the aim of continuously minimization and, where feasible, elimination of releases. Within this concept, requirements may be expressed as release limit values (concentrations or fluxes).
29. BAT does not mean the same requirement in each country. Depending on its individual circumstances, each Party decides by comparison and ranking which options can be regarded as BAT and which not. For this decision the criteria listed as General Considerations in Annex C, Part V B (a) should be taken into account.
30. Taking into consideration that BAT according to the definition in the Convention covers not only technological solutions some additional measures and elements were identified as BEP. In determining what combination of measures constitutes best environmental practices, in general or individual cases, particular consideration should be given to:
 - (i) the provision of information and education to the public and to users about the environmental consequences of choice of particular activities and choice of products, their use and ultimate disposal;
 - (ii) the development and application of codes of environmental practice which covers all aspects of the activity in the product's life;
 - (iii) the application of labels or other information tools informing users of the environmental risks or of the environmental friendliness of the product (e.g. green labels) related to a product, its use and ultimate disposal;
 - (iv) efficient use of energy and resources;
 - (v) putting in place appropriate waste management systems;
 - (vi) the application of economic instruments to activities, products or groups of products;
 - (vii) establishing a system of licensing, involving a range of restrictions or a ban;
 - (viii) training of staff with respect to understanding the operating procedure;
 - (ix) establishing of an environmental management system (e.g. ISO 14 000);
 - (x) emergency plans to reduce the impact of accidents;
 - (xi) extended producer responsibilities.
31. It was highlighted that according to the Convention "priority consideration should be given to alternative prevention/release reduction processes, techniques or practices that have similar usefulness but which avoid the formation and release of POPs" and agreed that before deciding on a specific technology options for a source category, it is appropriate to consider broader alternative approaches to the problem of unintentional POPs releases (e.g. does autoclaving or other disposal technologies represent a feasible alternative to the combustion of medical waste?). For question how to select the appropriate alternative or measure (BAT and/or BEP) when addressing existing sources or considering new activities that could lead to releases of unintended by-products a stepwise approach was discussed:

- (i) First step:
Alternative processes, techniques or practices that have similar usefulness, but which avoid the formation and release of Annex C POPs should be considered, when it is planned to construct a new facility or to significantly modify an existing facility for which one is obliged to require BAT under the provisions of Article 5 (d). Priority consideration should be given to (see Annex C, Part V, B (b)).
- (ii) Second step:
If no such alternatives can be identified, then the application of BAT should consist of release reduction measures including the consideration of the measures listed in Annex C, Part V, B (b).
32. When considering prevention or alternatives an assessment should be made that compares the characteristics of the facility proposed under step one with those of the alternatives. This comparative assessment should take into account the following criteria including, short-term costs as well as likely long-term costs.
33. Relevant decision criteria (taken from Annex F of the Stockholm Convention and **modified**) may be (not an exhaustive list):
- (i) technical feasibility;
 - (ii) costs, including environmental and health costs,
 - (iii) **cost efficiency**
 - (iv) efficacy (**infrastructural capacity: i.e. availability of well – trained staff etc.**),
 - (v) risk,
 - (vi) availability,
 - (vii) accessibility (**dependent on financial assistance**),
 - (viii) **Operator friendliness**,
 - (ix) positive or negative impacts on society **including**
 - health, including public, environmental and occupational health,
 - agricultural, including aquaculture and forestry,
 - biota (biodiversity),
 - economic aspects,
 - movement towards sustainable development; and
 - social costs.
 - (x) **Environmental performance standards (not only regarding the reduction potential for POPs but including other elements like waste, energy consumption etc.).**
34. The consideration of long-term costs should take into account an evaluation of the likelihood of future requirements for continuing minimization of release limit values. The consideration of infrastructural capacity should take into account national and local capacity to regulate and control releases of Annex C POPs including the capacity to adequately sample, test, monitor and perform other functions necessary to ensure established release limit values are consistently maintained.
35. For the evaluation of which measure may be appropriate in individual cases, the following additional aspects should be taken into account:
- (i) Geographic location,
 - (ii) Local environmental conditions,

- (iii) Technical characteristics of the (existing) installation concerned.

Recommendation

36. The conclusions could be the basis for the development of future guidance on BAT and BEP by the INC to implement resolutions 4 and 7 of the Conference of Plenipotentiaries in Stockholm.

Section C

Implementation

37. **Aims of the discussions in section C** were identified:

- (i) Identification of possible elements for implementation within action plans for by-product – reduction (in accordance with Article 5).
- (ii) Taking decision on appropriate elements for an implementation strategy taking into account different national backgrounds.
- (iii) As laid down in the Stockholm Convention Article 5 (a) provide that parties shall develop an action plan.

Conclusions of Section C

38. The action plans as described in Article 5 (a) are part of larger national implementation plans pursuant to Article 7. The establishment of action plans by developing countries is supported by financial funding by GEF if countries are signatories.

39. What actually could be implemented within the action plan depends *inter alia* upon the financial support and how mechanisms for incremental costs can be determined.

40. The representatives of the countries expressed the view that the structure of national action plans in Article 5 (a) including the establishment of strategies presents a good model.

41. The strategies should include the following main elements:

- (i) Establishment of an consultative group or forum of stakeholders including civil society.
- (ii) Carrying out a release inventory and identify important sources and the main problems.
- (iii) Survey of the existing legislation and policies taking into account socio-economic and cultural backgrounds. Evaluating their usefulness in reduction of releases.
- (iv) Set priorities and make decisions focusing on priority sources.
- (v) Identification of potential solutions for priority concerns, like changes in the legislative framework.
- (vi) Education and training of the public.
- (vii) Awareness raising and communication to the public.
- (viii) Voluntary programs for release reduction from industrial sectors.
- (ix) Direct legislative measures, e.g. setting emission limit values, requiring permits of installations.
- (x) Setting timetables for implementing the strategy

- (xi) Practicability and affordability
- (xii) In determining the costs of a strategy the criteria as set out in Annex F (a) to (c) may be useful tools

42. Additional components of the strategy may be

- (i) Research programs,
- (ii) International information exchange
- (iii) Monitoring the impacts on the environment and human health

Recommendations

43. It would be useful for INC 6 to request the development of a report that presents an initial compendium of techniques for reducing and eliminating releases of by – products of POPs. Special emphasis should be given on the conditions that prevail in developing countries. This report should also suggest some possible methodologies for calculating the incremental costs for implementation of measures according to Article 13.
44. Countries are encouraged to establish stakeholder advisory groups involving civil society groups to develop national action plans, set priorities and advise on appropriate measures to implement the strategy. Such groups should make special efforts to include public interest NGOs and representatives of civil society.