



**Stockholm Convention
on Persistent Organic
Pollutants**

Original: English

**Conference of the Parties of the Stockholm
Convention on Persistent Organic Pollutants
Fourth meeting**

Geneva, 4–8 May 2009

Item 5 (b) (ii) of the provisional agenda*

**Matters for consideration or action by the Conference of the Parties:
measures to reduce or eliminate release from unintentional
production: identification and quantification of releases**

**Ongoing review and updating of the Standardized Toolkit for
Identification and Quantification of Dioxin and Furan Releases****

Note by the Secretariat

1. In its decision SC-2/5, the Conference of the Parties, among other things, welcomed the second edition of the Standardized Toolkit for Identification and Quantification of Dioxin and Furan Releases¹ and noted the requests from Parties and others to verify emission factors and address gaps and other issues to improve the usefulness of the Toolkit, including training in the use of the Toolkit. The Secretariat was requested to initiate an open, transparent process, in cooperation with the Chemicals Branch of the United Nations Environment Programme's Division of Technology, Industry and Economics (UNEP Chemicals) and in consultation with users and specialized experts in the field of emission factors and measurements related to releases of Annex C persistent organic pollutants, to develop the Toolkit further.

2. In its decision SC-3/6, the Conference of the Parties, among other things, took note of the Toolkit Expert Roster,² adopted the process for the ongoing review and updating of the Toolkit, as set forth in the annex to that decision, and requested the Secretariat to implement the process and report on progress made to the Conference of the Parties at its fourth meeting. The Secretariat was further requested to place adequate emphasis on the key sources for which limited monitoring data were available, including sources of hexachlorobenzene and polychlorinated biphenyls, and to support developing countries in their efforts to verify further their emission factors.

* UNEP/POPS/COP.4/1.

** Mandate for the action described in the present note contained in: report of the Conference of the Parties on the work of its second meeting (UNEP/POPS/COP.2/30), annex I, decision SC-2/5 and on the work of its third meeting (UNEP/POPS/COP.3/30), annex I, decision SC-3/6.

1 UNEP/POPS/COP.2/INF/5 and UNEP/POPS/COP.2/INF/11.

2 UNEP/POPS/COP.3/INF/24.

3. In response to the request, the Secretariat, in cooperation with UNEP Chemicals:
 - (a) Organized the second Toolkit expert meeting from 13 to 15 December 2007 to develop the Toolkit further. An expert panel structure and a workplan for the intersessional period were adopted at that meeting, the report of which can be found in annex I to document UNEP/POPS/COP.4/INF/5.
 - (b) Launched projects to verify or establish emission factors from category 6 (open burning of waste and biomass) and provided support to the intersessional work of the Toolkit experts;
 - (c) Received and reviewed projects launched elsewhere on emission factors to support the ongoing review and updating of the Toolkit and shared this information with the Toolkit experts;
 - (d) Organized the third Toolkit expert meeting from 3 to 5 December 2008 to evaluate the intersessional work and prepare a report on the progress of the Toolkit review process to the Conference of the Parties. The report of the meeting can be found in annex II to document UNEP/POPS/COP.4/INF/5.
4. A report on the progress of the ongoing review and updating of the Toolkit, prepared at the third Toolkit expert meeting, is set out in the annex to the present note. The report is reproduced as received and has not been formally edited.

Possible action by the Conference of the Parties

5. The Conference of the Parties may wish:
 - (a) To take note of the reports of the Toolkit expert meetings and to consider the progress report set out in the annex to the present note;
 - (b) To encourage Parties to use the Toolkit, including the new information generated so far, when elaborating source inventories and release estimates under Article 5, and for reporting these releases under Article 15, taking into consideration the source categories identified in Annex C, and to provide comments on their experience in that regard to the Secretariat;
 - (c) To request the Secretariat to continue to implement the process for the ongoing review and updating of the Toolkit, in accordance with decision SC-3/6, and to report on progress made to the Conference of the Parties at its fifth meeting;
 - (d) To request the Secretariat, when implementing the Toolkit review and updating process, to place adequate emphasis on the key sources for which limited monitoring data are available, including sources of hexachlorobenzene and polychlorinated biphenyls; to support developing countries in their efforts to verify their emission factors; and to organize training and capacity-building activities on Toolkit use, subject to the availability of funds;
 - (e) To invite Parties, States not party to the Convention, intergovernmental organizations, non-governmental organizations and industry:
 - (i) To generate relevant data and information on Annex C chemicals, as identified in the Toolkit review and updating process, and provide that information to the Secretariat;
 - (ii) To participate actively in the Toolkit review and updating process;
 - (iii) To facilitate transfer of knowledge and capacity-building through strategic partnership and joint activities, including informal support to small-scale screening projects by well-equipped laboratories;
 - (f) To invite Parties and others in a position to do so to provide funding to support the work outlined in subparagraphs (c), (d) and (e) above.

Annex

Report on the progress of the ongoing review and updating of the Standardized Toolkit for Identification and Quantification of Dioxin and Furan Releases

Introduction

1. At its third meeting the Conference of the Parties in its decision SC-3/6, among other things, took note of the Toolkit Expert Roster³, adopted the process for the ongoing review and updating of the Toolkit as set forth in the annex to that decision, and requested the Secretariat to implement the process within available resources and report on progress made to the Conference of the Parties at its fourth meeting. The Conference further requested that adequate emphasis be placed on the key sources for which limited monitoring data is available, including sources of hexachlorobenzene and polychlorinated biphenyls, and to support developing countries in their efforts to further verify their emission factors.

General tasks

2. The general tasks to be undertaken in the Toolkit review and updating process have been outlined in the paragraphs 3 and 6 of the decision SC-2/5 of the Conference of Parties as follows:

- (a) Verifying of emission factors;
- (b) Filling in the gaps still existing in the Toolkit, in particular:
 - (i) Improving emission factors for technologies typically used in developing countries;
 - (ii) Filling in emission factors for hexachlorobenzene (HCB) and polychlorinated biphenyls (PCB);
- (c) Improving the overall usefulness and user friendliness of the Toolkit particularly for developing countries and countries with economies in transition;
- (d) Providing training in the use of the Toolkit.

Stakeholders, organization of work

3. All experts nominated by Parties and others included in the Toolkit Expert Roster (hereinafter "Toolkit experts"), were involved in the Toolkit review and updating process at least by electronic means;

4. Representatives selected from this roster were invited to participate in Toolkit expert meetings held annually, considering specific topics of the meetings, the expertise available with the particular experts, as well as geographic distribution and balance between developed and developing countries. The meetings were open to observers;

5. Two expert meetings took place from 13 to 15 December 2007 and from 3 to 5 December 2008. During these meetings the Toolkit experts focused on the following tasks: analyse and evaluate the information before them including the current Toolkit edition; identify still existing shortcomings and gaps, agree on priorities, and propose activities for improvement; identify possible activities to improve the overall usefulness and user friendliness of the Toolkit particularly for developing countries and countries with economies in transition; elaborate detailed workplan and timetable of the Toolkit revision and updating process for the forthcoming period based on the above; set up the necessary organisational structure (expert panels); agree on data quality criteria for validation of data/information, in order to secure that only scientifically sound information is included into the Toolkit; validate information and data to be included in the Toolkit according to the agreed data quality criteria and prepare revised/new Toolkit texts; assess training and capacity building needs for Parties to evaluate current and projected releases and develop release estimates and trends of Article 5 Annex C POPs.

Specific tasks and activities

6. The Toolkit review and updating process is driven by Parties. At the second meeting of Toolkit expert group, two expert panels have been established and four task teams to facilitate initial investigation of the identified additional issues of concern:

- (a) Expert panel on Toolkit Category 3 - Fossil fuel and biomass fuelled power plants; household heating and cooking (led by Ms. Ute Karl, Germany);
- (b) Expert panel on Toolkit Category 6 - Open burning of biomass and waste (led by Ms. Heidelore Fiedler, UNEP Chemicals). The following task teams have been established:
 - (c) Task team on brick production (lead: Gunther Umlauf, EC JRC-Ispra, Italy)
 - (d) Task team on simple stoves (lead: Beatrix Cardenas, Mexico)
 - (e) Task team on charcoal production and use (lead: João de Assunção, Brazil)
 - (f) Task team on metal industry (lead: Emmanuel Fiani, France).

The expert panels and task teams worked intersessionally, coordinated and facilitated by their leaders and supported by the Secretariat and UNEP Chemicals.

7. At the third meeting of the Toolkit expert group, the expert panels and task teams reported on progress of their work, discussed the outcomes and prepared workplans for the next intersessional period and proposed project concepts for the biennium 2010-2011. The task team on metal industry was changed to an expert panel lead by Emmanuel Fiani, France. A new task team on preliminary screening of unidentified sources lead by Pat Costner, IPEN, was established.

Outcomes

Toolkit Category 3 -Fossil fuel and biomass fuel power plants; household heating and cooking

8. Germany contributed to the updating and evaluation process with a study that compiled and evaluated emission factors in the Toolkit in general and for Category 3 specifically. The study included the assessment of about 60 publications and focussed on details of facilities (technology, manual vs. automatic feeding; size of plants, presence or absence of air pollution controls, *etc.*), fuel types (fossil, herbaceous vs. woody biomass; clean vs. contaminated), and residues (soot, mixed ashes, *etc.*). It was found that the current Toolkit emission factors are within the ranges set by the German proposal. The data have been placed into an appropriate format for use in the updating and review process. However, the levels of detail for the extended source category split are limited by data availability. A first proposal of emission factors for HCB and PCB is now available as well. The report has been placed at the UNEP Chemicals and Secretariat's WebPages'.

Toolkit Category 6 - Open burning of biomass and waste

9. For many developing countries, sources listed in this category were the major sources in their national inventories due to high activities at national level and/or to relatively high emission factors in the Toolkit. Two projects have been initiated to improve knowledge and emission factors for open burning of biomass and waste. The project on biomass, with funds from the Secretariat and executed by UNEP Chemicals, will undertake comparative measurements for the sampling of fumes from forest fires and the burning of sugarcane. Comparison of the derived emission factors will result in recommendations for emission factors and for future field projects in developing countries. The project on open burning of waste, executed by UNEP Chemicals with funding from the government of Sweden and the Chlorine Chemistry Division, USA, is close to finalization. It has undertaken waste characterizations in China and Mexico, had burned these waste mixtures under controlled conditions to identify fractions as drivers towards high dioxin emissions and finally has undertaken field samplings of burning waste in China and Mexico. The results, including emission factors, are expected to be presented at the fourth meeting of the Conference of the Parties.

Brick production

10. A screening programme was developed and its implementation initiated. Soil samples from vicinity of small brick kilns in Kenya, South Africa and Mexico were collected and are being analyzed for PCDD/F. Emission samples were taken at two Mexican sites to complement soil data. An attempt to correlate emission data with deposition on soils is planned. On the basis of the screening results, to be

available in 2009, further steps will be decided at the next expert meeting, including the option to initiate release measurement studies.

Simple stoves

11. In order to fill the gap for simple stoves as used in most developing countries, a number of activities were conducted in Africa and Latin America. A division into sub-categories with and without chimney was proposed. In-stack measurements with the aim to determine emission factors were executed. For the open fire cooking a pilot experimental campaign is planned. Further steps will be decided at the next expert meeting on the basis of the results.

Charcoal production and use

12. Charcoal production is not covered by the Toolkit and charcoal seems to be a very important energy source in developing countries. So far no emission measurement data were found, therefore experiments to generate information on releases from charcoal production is needed. Information on releases from charcoal use is available and a literature survey will be performed to evaluate the available information.

Metal industry

13. A first information collection was performed to assess the need for revision of this category. The following shortcomings of the current Toolkit have been identified: missing data for some release routes (e.g., residues), many emission factors are derived from old references (more than 10 years old), some subcategories are missing. New data was identified and collected through this process for all subcategories already covered in the current Toolkit. These data are related to PCBs and HCB releases and more recent measurements of PCDD/F. New evidence was also identified about possible new subcategories/classes, especially those which are relevant for developing countries (e.g., e-waste recycling, secondary lead production without pre-sorting of raw materials).

14. Further investigation is needed to refine current Toolkit data through a more comprehensive assessment of newly published information and identification of installations operated in developing countries not properly covered by the current sub-categories/classes. Priorities will be identified at the next meeting of the Toolkit experts in 2009 and a more comprehensive collection of data and/or field studies in developing countries initiated. An expert panel on Toolkit category 2 was established to carry out these activities, lead by Emmanuel Fiani, France.

Other issues of concern

15. New elements to be included in the next Toolkit edition to increase its usefulness have been identified as follows:

- (a) Minimization and elimination of PCDD/PCDF formation and release;
- (b) Identification of possible sources of PCDD/PCDF releases;
- (c) Revisions and updates of source inventories and release estimates;
- (d) Data quality criteria;
- (e) Reference to the Guidelines on best available techniques and provisional guidance on best environmental practice (general information as well as source-specific information).

Conclusions and recommendations

16. The process for ongoing review and updating of the Toolkit, as adopted by decision SC-3/6, including the annual face-to-face meetings and the intersessional work carried out by expert panels and task teams is adequate and should continue also in the future.

17. New information resulting from the process, as well as call for additional specific information, is shared through the Stockholm Convention clearing house mechanism and the UNEP Chemicals web page. Parties and others are encouraged to consider this information and to submit any supplementing information if available.

18. The Toolkit expert group is mainly operating on voluntary contributions (personally and nationally); however, in order to implement the workplans additional human and financial resources are needed.

19. There is still major information gap with regard to measurements of releases from technologies typically used in developing countries. It is not likely that such information will become available soon. Therefore, targeted projects to generate such information should be developed and supported.
20. Any activity measuring releases of unintentional POPs should include all POPs listed in Annex C (PCDD/PCDF, HCB and PCB) as well as candidate POPs (pentachlorobenzene).
21. Opportunities should be sought and promoted to link the on-going Toolkit activities with BAT&BEP activities in support of unintentional POPs release measurements, deriving of emission factors and their better understanding.
22. Parties should be encouraged to use the Toolkit, including the new information generated so far, when elaborating source inventories and release estimates under Article 5, and for reporting of these releases under Article 15, taking into consideration the source categories identified in Annex C, in support of transparency and better comparability of data. Presently, Parties are required to report only source categories according to their action plans. Therefore, the inventory results can not be globally evaluated and compared.
23. Guidance and training on Toolkit use will be necessary in order to harmonise the approach for updating of the reported source inventories and release estimates (establishing a release inventory for a future point in time (time trend)), as well as to their revisions (recalculating the releases for a particular year if better activity data and/or emission factors became available) in support of data comparability and consistency of time trends.
24. Issue of biomass fuels is becoming more important at global level due to their promotion under activities related to climate change. Efforts on inter-linkages with climate change activities should be intensified and besides releases of greenhouse gases also releases of POPs from biomass combustion should be measured and evaluated.