# Keep the Promise at COP4

## Ongoing review and updating of the Standardized Toolkit for Identification and Quantification of Dioxin and Furan Releases – An IPEN Perspective

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**UNEP/POPs/COP.4/11** summarizes decisions by COP2 and COP3 with respect to the Toolkit; describes actions taken by the Secretariat, in cooperation with UNEP Chemicals, in response to those decisions; and proposes the following ***"Possible Action by the Conference of Parties:"***

*"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."*

### Issues of Concern

Paragraph (d) of the proposed action is of greatest concern to IPEN. If this paragraph is accepted as written, COP4 will request the Secretariat *"to support developing countries in their efforts to verify their emission factors,"* but it will not make an equally important request for the Secretariat to support countries in identifying sources, including those not specifically addressed in the Toolkit.

While some countries may have only those sources listed in the Toolkit, this is not the case in all countries. For example, the manufacture of triclosan was recently identified as one of the main sources of PCDD/PCDF[i] in China.[ii] Another group of Chinese scientists has reported PCDD/PCDF in phthalocyanine green and phthalocyanine copper, which are used in are used in industry, toys and ornaments, as well as other chemicals.[iii] In Japan, some unlisted sources that have been identified are production of caprolactam, an intermediate step in nylon production; manufacture of monochlorobenzene; acetylene production via the carbide process; and alumina fiber production.[iv] Acetylene production via the carbide process has also been identified as a source in South Korea.[v] In the U.S., catalytic oxidizers for thermal treatment of gases volatilized from contaminated soils have been identified as sources. [vi,vii] Also in the U.S., one single titanium dioxide production facility was the second leading dioxin source in 2000, according to the U.S. Environmental Protection Agency Toxic Release Inventory.[viii]

Non-combustion waste treatment technologies, which do not fit into any category in the Toolkit, have the potential to generate high concentrations of PCDD/PCDF.[ix] For example, PCDD/PCDF are generated by supercritical water oxidation, depending on operating conditions. [x]

Assistance with source identification will also facilitate the identification of contaminated sites –"Hot Spots." For example, the summary article in a recent series of studies of sites contaminated by PCDD/PCDF and other POPs emphasized the need for screening any process using chlorine, oxidizing processes in the presence of HCl/chlorides, or other chlorinating reagents.[xi]

**IPEN Recommendation**

IPEN recommends that paragraph (d) of *"Possible Action by the Conference of Parties,"* presented in UNEP/POPs/COP.4/11, is modified as follows:

(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 and countries with economies in transition in their efforts 1) to identify their sources, including those not specifically addressed in the Toolkit and 2) to verify their emission factors; and to organize training and capacity-building activities on Toolkit use, subject to the availability of funds;

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[i] PCDD/PCDF = polychlorinated dibenzo-*p*-dioxins and polychlorinated dibenzofurans.

[ii] Zheng, G., Leung, A., Jiao, L., Wong, M., 2008. Polychlorinated dibenzo-p-dioxins and dibenzofurans pollution in China: Sources, environmental levels and potential human health impacts. Environment International 34: 1050–1061.

[iii] Ni, Y., Zhang Z., Zhang, Q., Chen, J., Wu, Y., Liang, X., 2005. Distribution patterns of PCDD/Fs in chlorinated chemicals. Chemosphere 60:779–84.

[iv] Kawamoto, K., 2002. New sources of dioxins in industrial processes and their influences on water quality. Organohalogen Compounds 56: 229-232.

[v] Jin, G.Z., Lee, J.-M., Lee, J.-W., Chang, Y.-S., Shin, S.-K., 2007. Emission characteristics of PCDD/Fs in wastes from industrial sources in South Korea. Organohalogen Compounds 69: 1463-1466

[vi] Hart, J., 2004. Emissions of polychlorinated dibenzo-p-dioxins and dibenzofurans from catalytic and thermal oxidizers burning dilute chlorinated vapors. Chemosphere 54: 1539–1547.

[vii] Hart, J., 2008. Verification of dioxin formation in a catalytic oxidizer. Chemosphere 72: 75–78.

[viii] U.S. EPA Toxics Release Inventory (TRI) Program, 2000. TRI Data Release. http://www.epa.gov/tri/tridata/tri00/index.htm

[ix] Weber, R., 2007. Relevance of PCDD/PCDF formation for the evaluation of POPs destruction technologies – Review on current status and assessment gaps. Chemosphere 67: S109–S117.

[x] Weber, R., 2004a. Relevance of PCDD/PCDF formation for the evaluation of POPs destruction technologies. – PCB destruction by super critical water oxidation (SCWO). Organohalogen Compounds 66: 1263–1269.

[xi] Weber, R., Gaus, C., Tysklind, *et al.*, 2008. Dioxin- and POP-contaminated sites—contemporary and future relevance and challenges. Environ Sci Pollut Res: 15:363–393.