

World Chlorine Council Submission on Global Mercury Partnership for the Reduction of Mercury in the Chlor-alkali Sector

Introduction

The World Chlorine Council (WCC) is a global network of national and regional chlor-alkali associations in over 27 countries. The WCC membership includes associations and companies in Africa, Asia, Europe, Latin America, and North America; representing over 80 percent of global chlorine and caustic-soda production. Additional information regarding the WCC can be found at www.worldchlorine.com.

The World Chlorine Council (WCC) has been an active supporter of the UNEP Global Mercury Programme and has made a sustained effort to help mercury-based chlorine producers around the world reduce mercury uses and emissions. As part of this effort, WCC agreed to support and contribute to the *Global Partnership on Mercury Reduction in the Chlor-Alkali Sector*. The Global Mercury Partnership builds upon WCC's long-standing commitment to share best practices globally for reducing the use and release of mercury from mercury-cell chlor-alkali facilities. WCC has strived with governments, chlor-alkali producers, and UNEP to help make this partnership a success. As requested in GC decision 23/9 IV, the following submission attempts to outline WCC's role and contributions towards implementation of this Partnership.

Background

The mercury cell process is one of the three types of manufacturing processes utilized by the chlor-alkali sector for the production of chlorine and caustic soda. The mercury contained in the cells, is used in a non-dispersive way and is recycled within the cells. Strict safety procedures and process controls are followed to prevent workplace exposure and to minimise emissions of mercury. In addition, the member companies of WCC have committed not to sell or transfer mercury cells after plant shutdown to any third party for re-use¹. WCC voluntarily engages in several global programs to reduce mercury use, consumption and emissions from the mercury cell manufacturing process. WCC's global programs augment the programs and commitments made by regional WCC organizations, which have in many cases reduced mercury use and release by over 90%.

Today, chlorine production is a relatively small source of mercury emissions, contributing less than 1% of the total global emissions of mercury from all natural and man-made sources. This will continue to decline as the industry implements best available techniques and transitions to alternative non-mercury technologies.

While over time the industry is shifting towards non-mercury technologies, it is important to note that chlor-alkali plants are extremely capital intensive and costly to build. Therefore, this transition will take time and significant financial resources. In many cases, some plants may not be rebuilt with implications for local markets. It is the position of WCC that until mercury-cell units reach the end of their economic life, these facilities can continue to be operated utilizing best available techniques so as to minimize mercury use and emissions. The WCC estimates that there are roughly 135 mercury-cell plants operating in 44 countries.

¹ WCC recognizes that an exception could be allowed for transfer/sales of end-of-life mercury cells with the purpose to replace an operating facility with better performing cells in order to reduce mercury emissions, provided that both the authorities from the area of origin and the receiving area have been notified and have approved the sales/transfer.

WCC Support and Contributions to the Partnership

As noted above, the chlor-alkali industry has been actively working for many years to reduce mercury use and emissions and will continue to do so. As part of the *Global Partnership on Mercury Reduction in the Chlor-Alkali Sector*, the WCC has focused on the following:

- **Promotion & Implementation of Best Practices** – WCC continues to encourage the adoption of best management practices to facilitate reductions in mercury releases and use from mercury-cell facilities around the globe. This includes the development and sharing of technical information that can be used by facilities to reduce mercury use and emissions. A key mechanism for sharing and implementing these best practices has been in-country workshops designed to allow industry experts and facility managers to share best practices and analyze how these practices could be applied to a specific facility so as to further reduce mercury use and emissions. Where appropriate, these workshops have included follow-up demonstration projects that when implemented are expected to result in tangible reductions in the amount of mercury used and released at specific mercury-cell chlor-alkali manufacturing facilities.

The WCC Mercury Workshops are part of a long-standing WCC commitment to share best practices. Prior to the formation of the Partnership, WCC organized workshops in **Brazil** (2003) and **India** (2004). A report on each of these workshops was presented at the 23rd UNEP Governing Council in 2005. As part of the *Global Partnership on Mercury Reduction in the Chlor-Alkali Sector*, additional workshops were organized in Russia and Mexico. More detailed information on these workshops is outlined below and is also available on the UNEP Partnership website.

- **Russia Mercury Workshop (2005):** Working with Ruschlor (the Russian chlor-alkali industry association), the United States, Canada, Norway, the Russian Cleaner Production and Sustainable Development Center, Volgograd Regional Environment Authority, and WCC sponsored a Russia Mercury Workshop in November 2005. In preparation for the workshop, Ruschlor completed mercury audits at three Russian mercury cell chlor-alkali facilities and presented the results of the audits at the workshop. This information was used to identify potential areas for improvement and best practices for reducing mercury use/releases. Through Euro Chlor, WCC provided technical support for the workshop and also helped coordinate a tour of state-of-the-art chlor-alkali facilities in Germany, Spain and Italy for representatives of the Russian chlor-alkali industry. For more information, please see the attached [Russia Mercury Workshop Report](#).

After the workshop, facility representatives received comprehensive “cleaner production training” and worked to develop specific demonstration projects for reducing mercury releases. These projects have been catalogued and are being further evaluated for possible implementation by Russian industry with support through the Arctic Council and other donors. Approved demonstration projects are scheduled to begin late 2006 and some are expected to be completed in 2007.

Funding for this workshop and the follow-up work was provided by U.S. EPA through the Arctic Council Action Plan Program, Environment Canada, Norwegian Pollution Control Authority, Volgograd Caustic, and WCC. These same organizations are also working to fund implementation of specific demonstration projects. When complete these projects are expected to reduce mercury consumption and emissions from the chlor-alkali sector in Russia by as much as 25%.

- **Mexico Mercury Workshop (2006):** On 29-31 March 2006, in Coatzacoalcos, Veracruz, Mexico, WCC and the Mexican National Association of Chemical Industries (ANIQ) sector hosted a Mexico Mercury Workshop. Fifty participants attended the Workshop including representatives from chloralkali facilities in Mexico (20), chlor-alkali facilities in other Latin American countries (5), global industry experts (US(2), Europe(1), Brazil(2)), and WCC trade organizations (5); equipment and analytical service vendors (6); and governmental representatives (12) from UNEP, Mexico: Centro Nacional de Investigación y Capacitación Ambiental (CENICA) and Secretaría del Medio Ambiente y Recursos Naturales (SEMARNAT); United States: US Environmental Protection Agency (U.S. EPA); India: Ministry of Environment and Forests India; and Argentina: Unidad de Residuos Peligrosos Dirección Nacional de Gestión Ambiental. Participants included industry and government representatives from Mexico [SEMARNAT (The Secretariat of Environment and Natural Resources of Mexico) and CENICA (National Institute of Ecology)]; the United States; Argentina; Brazil; India; and UNEP, as well as equipment suppliers. The workshop focused on exchanging technical information on best practices for reducing mercury use and releases. As a result of the workshop, one of the Mexican facilities is implementing specific projects to reduce mercury emissions. For more information, please see the attached [Mexico Mercury Workshop Report](#).

Funding for this workshop was provided by UNEP, U.S. EPA, and WCC, with additional regional support from the two Mexican chlor-alkali companies Mexichem and Cydsa/IQUISA, as part of the Global Mercury Partnership.

- **Mercury Reporting & Measuring Progress** – WCC supports the partnership objective to collect data concerning mercury use and emissions within the chlor-alkali industry. WCC has worked to catalogue, to the best of its knowledge, those facilities utilizing mercury-cell technology. WCC is also working to facilitate the collection on mercury use and emissions from chlor-alkali facilities. As part of its commitment to the Global Mercury Partnership, starting in 2007, WCC will submit a report to UNEP summarizing regional mercury use, consumption, and emission. WCC recognizes that in some cases government assistance may be needed to collect data from non WCC members. Therefore, the WCC Mercury Reports may not be fully complete during the initial phase of the partnership.
- **Regional Reduction Programs** – The WCC member associations continue to work aggressively on reducing mercury uses and emissions at the national and regional level. These efforts have produced dramatic results. For example:
 - ❑ Mercury-based facilities in Europe have cut emissions by 98% since the mid-1970s, with producers committed to more reductions through the Euro Chlor Sustainability Program.
 - ❑ Mercury-based facilities in the United States have reduced overall mercury usage reduction to date over a nine-year period by 94%.¹
 - ❑ Mercury-cell facilities in Brazil have reduced emissions of mercury by over 95% since the 1970s.

Conclusions

WCC has contributed significant time, expertise and financial resources to the implementation of *Global Partnership on Mercury Reduction in the Chlor-Alkali Sector*. WCC's financial and in-kind contributions to the Partnership have exceeded USD \$100,000.

The WCC believes the *Global Partnership on Mercury Reduction in the Chlor-Alkali Sector* has directly resulted in tangible reductions of mercury use and emissions. Furthermore, we believe that the Mercury Chlor-Alkali Workshops and demonstration projects developed through the

partnership can be utilized as pilot programmes for implementation in other countries. As such the Partnership represents the most efficient and effective way to further reduce global mercury use and emissions from the chlor-alkali sector.

WCC looks forward to working with governments and other stakeholders in continuing to implement the Partnership for the chlor-alkali industry that will effectively contribute to international efforts to reduce the use and release of mercury.

¹ For more information see the Chlorine Institute 9th Annual Report to U.S. EPA on Mercury available at: <http://www.epa.gov/region5/mercury/9thcl2report.pdf#search=%22Chlorine%20institute%209th%20report%20to%20EPA%22>