

Simon, Nils

**Research Report**

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# The UN Minamata Convention on Mercury

## A Compromise with Potential

*Nils Simon*

In January 2013, United Nations (UN) delegates from over 140 countries meeting in Geneva came to an agreement on the substance of a mercury convention. Although the hazards of this heavy metal have been recognized for decades, and the economic benefits of its effective regulation are undisputed, the path to the Minamata Convention was marked by lengthy and arduous negotiations. A successful outcome was finally achieved as a result of intense pressures arising from the transboundary nature of the problem, but only after the inclusion of generous transitional arrangements and derogations in the final document. The result is a compromise that falls somewhat short of European expectations in terms of two of the most significant sources of emissions, but which establishes clear targets in other areas. Further negotiations are planned to close the remaining gaps in the agreement. In the coming years, the agreement could be gradually expanded and its provisions tightened—objectives that Europeans should actively promote.

The new convention aims to reduce mercury emissions worldwide. It will be officially signed in October 2013 at a conference in the Japanese city of Minamata. The Minamata Convention is one of the few multilateral environmental treaties that have been adopted in recent years, and the first new treaty since 2001 in the area of chemical use and regulation.

### The mercury problem

Mercury is a heavy metal that is liquid under standard conditions and occurs naturally in the earth's crust. It is used extensively in natural resource extraction—

in gold mining, in particular. As a waste product, atmospheric mercury emissions result from coal-fired power generation and cement production. Products such as batteries, fluorescent tubes, and medical equipment also contain mercury.

Mercury is toxic even at very low levels and is lethal at high doses. It can cause severe damage to the brain and other organs, particularly in young children and the unborn. The greatest health risks occur when mercury comes into direct contact with the skin or when it is inhaled; this risk primarily affects gold prospectors and other workers in the mining industry. For most people, the major source of exposure

comes from the accumulation of mercury in fish and seafood. Once released, mercury is transported through the air and deposited in soils and waters, where it passes into plants and animals.

The dire consequences of massive mercury poisoning first gained widespread public attention in 1956. At that time, numerous cases of severe illness were reported in the Japanese coastal city of Minamata, exhibiting symptoms ranging from headaches to dizziness, convulsions, unconsciousness, and even to comas. Three years later, the cause of what had become known as “Minamata disease” was determined: wastewater from a local chemical factory contaminated with methylmercury, which led to harmful concentrations of the heavy metal in local fish and seafood. Since then, the health risks of mercury have been widely recognized. The global regulation of mercury, however, has been long in coming.

In the 1970s, over 10,000 metric tons of this heavy metal were extracted annually from mercury mines. Around that time, a series of environmental laws and regional treaties were adopted, largely focused on marine protection. As a result, mercury emissions in industrialized countries fell considerably, and by the 2000s the extraction of mercury had decreased to one-tenth of previous levels. Recently, however, demand has once again risen sharply. The “Global Mercury Assessment 2013” of the United Nations Environment Programme (UNEP) estimates that 1,960 tons of anthropogenic mercury emissions are released into the atmosphere each year, although that figure comes with considerable uncertainties. Forty-four percent of these emissions result from activities in which mercury is utilized for specific purposes, including ore extraction and especially artisanal and small-scale gold mining (ASGM). The other 56 percent of mercury emissions are a by-product of industrial processes such as coal-fired power generation, operation of large ore and gold mines, and cement production.

Mercury emissions are unevenly distributed across the globe. East and Southeast Asia are responsible for the largest share of emissions at 39.7 percent. China alone accounts for one-third of global emissions, which can be attributed to the rapid increase in energy consumption within the country, a demand that is met primarily with coal power. Sub-Saharan Africa is the second-largest regional emitter, accounting for 16.1 percent of emissions, largely due to gold mining. It is followed by South America at 12.5 percent. The industrialized regions represent a relatively small share of global emissions, with the EU accounting for 4.5 percent and North America for 3.1 percent.

### **The path to concrete negotiations**

There has long been disagreement in the international community about how mercury should be regulated. The Protocol on Heavy Metals, established as part of the Convention on Long-Range Transboundary Air Pollution (CLRTAP) in 1998, provided an international legal framework. It was designed for industrialized countries, however, and was therefore not appropriate as a blueprint for a transregional agreement. At the global level, there were three existing chemical-related conventions addressing the cross-border transport and disposal of hazardous wastes, the international trade in chemicals, and organic pollutants, but these could not be extended in scope to cover heavy metals.

The unresolved problem of mercury regulation prompted Switzerland and Norway to take action and bring the issue repeatedly to the global agenda. In 2001, the UNEP Governing Council commissioned a “Global Mercury Assessment” whose results were released in 2003 and became the catalyst for further resolutions. In 2005, the Governing Council decided to create an independent mechanism to tackle the problem, but was unable to reach agreement on what form this should take. Europeans in particular favored a legally binding ap-

proach. The options under discussion were either to create a stand-alone agreement or to extend the scope of one of the three existing chemical-related treaties, preferably the Stockholm Convention of 2001. The US, together with China, preferred voluntary approaches such as the expansion of the UNEP Global Mercury Partnership.

To reach a decision, an ad-hoc working group on mercury was formed in 2007. There China repeatedly emphasized its “right to development” and the necessity of emitting mercury in the process of growth. In contrast, the USA expressed a strong interest in reducing mercury pollution. The USA had reduced its own mercury emissions in the past, but continued to suffer negative impacts of globally increasing emissions. As a matter of political principle, however, Washington initially took a position against binding multilateral solutions. A reversal of this position only came with the Obama administration. Barack Obama had already taken on the issue of heavy metals during his tenure as a Senator: he had introduced a bill that eventually became the 2008 Mercury Export Ban, which entered into force on January 1, 2013. Under the Obama administration, the US Environmental Protection Agency (EPA) has also become more active on this issue. With its new Mercury and Air Toxics Standards (MATS), it has set the lowest limits on mercury emissions from coal-fired power stations of any country worldwide, rules which will go into effect in 2015.

Under President Obama, the USA agreed to the negotiation of a UN convention. Many emerging and developing countries were already favorably inclined toward a multilateral agreement, especially Latin American and African countries. Mercury emissions in these countries had risen significantly as a result of the numerous gold mines that have been built in response to rising global market prices for this precious metal. In February 2009, the UNEP Governing Council appointed an Intergovernmental Negotiating Committee (INC),

and over the course of five meetings between June 2010 and January 2013, the INC drafted the details of the convention.

### **The content of the convention**

The final text of the convention prohibits the production, export, and import of mercury-containing products such as batteries, thermometers, and certain types of fluorescent lamps starting in 2020. Vaccines in which mercury is used as a preservative are still allowed due to the lack of alternatives. No new mercury mines may be built, and existing mines must be closed within 15 years.

In contrast, the convention contains only non-binding reduction plans and generous transition periods for the two most significant sources of emissions—small-scale gold mining and coal-fired power generation. Nations with such operations in Africa, Latin America, and Asia are called upon to develop their own national strategies for reducing the use of mercury in gold excavation. The convention calls for the provision of financial and organizational support to these countries. New coal-fired power plants are to install Best Available Techniques (BAT), while mercury-reducing technologies are to be installed in existing plants within 10 years after the treaty comes into force—but only when this is considered possible and economically feasible.

In some areas, the Minamata Convention makes reference to existing chemical conventions. Trade in mercury is only allowed if the express written agreement of the importing country has been secured in advance—a principle that is already familiar from the Rotterdam Convention of 1998. Also the regulations applying to mercury-contaminated wastes are similar to rules controlling other hazardous wastes in the Basel Convention of 1989. A 15-member Compliance Committee is to be created to monitor compliance with the rules.

Financing of the proposed measures was one of the most contentious points in the last round of negotiations, the INC-5 in

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**SWP**  
Stiftung Wissenschaft und Politik  
German Institute for International and Security Affairs

Ludwigkirchplatz 3–4  
10719 Berlin  
Telephone +49 30 880 07-0  
Fax +49 30 880 07-100  
www.swp-berlin.org  
swp@swp-berlin.org

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Deborah Anne Bowen

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Geneva. The industrialized countries proposed that the Global Environment Facility (GEF) be designated as the funding mechanism. Emerging and developing countries in general tend to be skeptical of the GEF: they are critical of its bureaucratic application procedures and view the Facility as too strongly controlled by wealthier countries. Consequentially they preferred an independent mechanism.

As a compromise, agreement was reached on a hybrid solution in which the GEF would play a central role, although it will have to raise additional funding. In addition, a program to facilitate the implementation of the convention will also be established, based in an existing agency. Switzerland, Norway, and Japan have already pledged an initial funding amount of 1 million US dollars each in order to fast-track action until the new treaty enters into force and the regular financing mechanisms can become operational.

## Outlook

The Minamata Convention will enter into force as soon as it has been ratified by at least 50 countries. This can be expected sometime after 2015. For the EU, the treaty will necessitate only minor adaptations to existing guidelines; serious changes are not to be expected. The USA has announced its intention to ratify the treaty—despite its general practice of not ratifying environmental conventions. Since the USA has already implemented all major components of the convention, President Obama could conceivably ratify it without the consent of the Senate.

China also plans to ratify the convention, despite the fact that implementation there will be much more difficult, especially when it comes to upgrading older installations. Indeed, improved emissions controls would benefit China economically and help prevent damage to health. The use of flue gas filters on coal-fired power plants would significantly reduce the ubiquitous smog, and at the same time eliminate large quan-

ties of mercury, essentially as a side-effect. Yet it remains doubtful whether this realization will rapidly be translated into comprehensive and costly retrofitting programs by the Chinese government.

The greatest challenges this treaty poses are for regions with high mercury emissions because of mining activity—in particular, Sub-Saharan Africa and Latin America. Reducing emissions will be especially difficult in these areas due to limited government monitoring capacities and a lack of alternative occupation for gold miners. Whether the major anthropogenic sources of mercury emissions in these countries can be reduced will depend crucially on the level of funding for the planned mechanisms and how effectively the funded programs focus on achieving their designated targets. It will only become possible to predict the long-term effect of the convention with a measure of accuracy after 2020.

Even before the first Conference of the Parties (COP), which is currently anticipated to take place in the second half of this decade, further INC meetings are to be convened to facilitate rapid implementation of the convention. At the COP itself, negotiations should then take place to develop and refine specific points of the convention, and in some cases to tighten agreed provisions. Already on the agenda for this meeting are: further guidelines on mercury trade, an institutional base for the capacity-building program, the use of funds, and the type and extent of national reports.

Even if core provisions of the convention seem relatively unambitious, it could nonetheless over time be developed into an effective instrument for reducing mercury emissions. For European countries, which have shown a great deal of stamina in their long struggle for effective mercury regulation, the Minamata Convention therefore represents an important interim victory. To make it a full success, they will have to continue pressing ahead vigorously.