

# Guest editorial

## Reflections on the Workshop on International and National Landscape of Atmospheric Mercury and the NACA Conference, 1-2 October 2015

It was a great privilege to be invited to talk at the 'Workshop on International and National Landscape of Atmospheric Mercury', and to give a presentation at this year's National Association for Clean Air Conference with the conference theme of "Shifting Challenges of Air Quality in South Africa".

The signing of the Minamata Convention on Mercury does indeed present a new challenge, not only for South Africa but for many countries around the world. While the reduction of the use of mercury in commercial and industrial products, or switching to mercury-free alternatives should be a relatively simple process, for nations such as South Africa which rely heavily on coal for power production, the reduction of mercury emissions is a significant challenge.

Mercury as an environmental cause for concern is not an issue that stands isolated from other environmental concerns; coal combustion has air quality and climate change implications as well as releasing mercury. The United Nations held its Sustainable Development Summit in the week preceding the NACA conference, and published its Sustainable Development Goals. Among these Goals is the necessity to provide "affordable, reliable, sustainable and modern energy for all". Policy makers are going to have to hard job to find a balanced approach to ensure wider energy provision while seeking to maintain a healthy environment and limit carbon emissions.

Reducing mercury emissions, however, is often a co-benefit of other measures taken to ensure reasonable air quality. The techniques used to remove sulphur and nitrogen oxides from exhaust or flue gases also reduce mercury emissions. Equally, the methods used to remove particulate matter will reduce the amount of mercury associated with particulates which is emitted.

One aspect of mercury cycling in the environment which really needs to be addressed, and particularly in the Southern Hemisphere, is that measurements are so scarce. A priority for all signatories to the Minamata convention will be the establishment of a monitoring network for mercury. Ideally, this

will involve measurements of mercury in the atmosphere and in precipitation. The precipitation measurements are probably the most important, except in very polluted environments, as they provide direct evidence of the fluxes of mercury impacting rivers and reservoirs, and also agricultural and forested land. Monitoring and modelling together provide the tools necessary for a robust assessment of the environmental impact of the local and regional impact of mercury on the environment.

The NACA conference was unusual for me for one particular reason, and that was the mix of academia, government, industry and environmental consultancy representatives to be found all under one roof. And round one table. Many people helped make my stay in South Africa memorable, but special thanks must go to Prof Hannes Rautenbach, Dr Greg Feig and Bev Terry.

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