

**NATURAL EMISSIONS, GLOBAL CHANGE AND THE GLOBAL MERCURY
CYCLE – A 2-DAY WORKSHOP.**

Venue: Department of Earth Sciences, University of Oxford, UK, 24-25 May 2011.

Organised by: The IKIMP project: Integrating Knowledge to Inform Mercury Policy
<http://www.mercurynetwork.org.uk/>

Background.

IKIMP is a three-year knowledge exchange initiative, which aims to use existing scientific and technical knowledge to inform public policy relating to mercury. This 3-year initiative, which started in October 2008, is funded by the UK Natural Environment Research Council. One aim of the project is to use focussed workshops to produce short policy briefings. Our last workshop, on mercury storage, led to a policy briefing¹ on the safe storage and disposal of redundant mercury and a strategic framework² to inform decision making on mercury storage that have informed negotiations in the UNEP-led initiative to establish a global treaty on mercury.

This workshop will involve about 20 participants, and will focus discussion around two areas where we will aim subsequently to produce policy briefings: uncertainties and unknowns in the natural inventory of mercury; and potential effects of global change on the natural mercury cycle.

IKIMP Steering Committee:

David Pyle (Oxford; Principal Investigator), Murray Gardner (Oxford/NERC; coordinator), Warren Corns (PS Analytical), John Holmes (Oxford), Tamsin Mather (Oxford), Mike Roberts (DEFRA), Lesley Sloss (IEA CCC), Melanie Witt (Oxford).

¹<http://bit.ly/h8QMoA>

²<http://www.unep.org/hazardoussubstances/Mercury/Negotiations/INC1/Technicalbriefingpresentations/tabid/4118/Default.aspx>

Day 1 - The natural inventory of mercury: where are the uncertainties?

Aim: To carry out a 'SWOT' (*strengths, weaknesses, opportunities, threats*) analysis of the present state of knowledge of (and knowledge gaps in) the natural inventory of mercury, guided by short summary presentations from invited experts.

Key questions:

1. Policy context: what do policymakers need to know about the natural inventory of mercury, and to what level of confidence? How can we best present what we know, and associated uncertainties, to inform policy processes?
2. What are the current natural reservoirs for mercury, and what are the current exchange fluxes between them? How have these reservoirs and fluxes changed [e.g. (a) during the last 2000 years? (b) the last 200 years? (c) the last 20 years?].
3. What do we need to do better in future to improve the knowledge available to policy makers? (e.g. More measurement, or just better measurement? More synthesis? Better modelling?)

Written briefing notes will be circulated shortly.

Plan for day 1.

10.00 am – Arrive and coffee

10.30 am – Introduction.

1.1 The policy context (15-20 minutes)

Gunnar Futsaeter (United Nations Environment Programme)

11.00 am – Emissions and fluxes (20-30 minutes each)

1.2 Natural archives (of mercury deposition).

Peter Outridge (Geological Survey of Canada)

1.3 Natural primary emissions - crustal degassing.

Sandro Aiuppa (INGV/University of Palermo)

1.4 Emissions from the biosphere.

Hans Friedli (University Corporation for Atmospheric Research)

12.30 pm – Discussion

12.45 pm – Lunch

1.45 pm – Emissions, measurements and modelling. (20-30 minutes each)

1.5 Mercury evasion from Earth's natural surfaces: sea and ice.

Henrik Skov (Aarhus University)

1.6 Measurement networks.

Peter Coleman (Dept. for Environment, Food and Rural Affairs, UK)

1.7 Models of atmospheric transport, processing and deposition.

Deanna Donohue (University of East Anglia)

3.15 – 5.30 pm Breakout/discussion (in two groups, with rapporteurs. Rotate groups between questions to ensure that we cover all of the intended questions, and to stimulate discussion).

Provisional topics:

(a) ***What can we tell the policymakers now?*** (How well do we understand the natural mercury cycle and the natural variability of the system? What are the uncertainties and unknowns? Can we make the right measurements/models to verify the impacts of changing mercury policies, e.g. on anthropogenic activities and emissions).

(b) ***What do we need to do to advance the science*** (tracing and quantifying the natural mercury cycle; understanding the history of the natural mercury cycle over the recent geological past)?

6.00 pm – Drop in at the Rose and Crown (traditional pub) on the way to dinner.
<http://www.rose-n-crown.com/>

7.00 pm Conference dinner and informal discussions. Venue: The Cherwell Boathouse. (<http://www.cherwellboathouse.co.uk/>)

Day 2: The potential effects of global change on the natural mercury cycle.

9.00 am. 4 talks (20-30 minutes each)

2.1 Future anthropogenic emissions and policy outlook

Lesley Sloss (International Energy Agency, Clean Coal Centre)

2.2 The future of the marine mercury cycle.

Henrik Skov (Aarhus University)

2.3 The future of the terrestrial mercury cycle

Noelle Selin (MIT)

2.4 Arctic futures and the mercury cycle

Peter Outridge (Geological Survey of Canada)

11.00 am Coffee

11.30 am Break out groups 1 (*specific themes to be confirmed in the morning*)

12.15 pm Lunch

1.15 pm Break out groups 2

2.00 pm Break out groups 3

2.45 pm Rapporteurs report back

3.00-4.00 pm General discussion; reflection on what we have achieved, and plans for completing draft discussion documents.

4.00 pm Meeting ends.