

Expert consultations on “Mercury from oil and gas” under the UNEP Global Mercury Partnership - Kick-off meeting (23 April 2020)

- Summary of main discussion points -

Background:

At its tenth meeting (Geneva, 23 November 2019), the Advisory Group of the UNEP Global Mercury Partnership (PAG) requested the Secretariat of the Partnership to convene targeted discussions with interested partners and stakeholders on the issue of mercury from oil and gas, which it had identified as cross-cutting, i.e. where the collaboration of Partnership areas of work would facilitate the development of needed information, interventions and projects¹.

In response to this request, expert consultations were launched on 23 April 2020, with the overall objective to identify potential useful contributions from the Partnership, within the context of its mission and its existing areas of work. The meeting was attended approximatively 65 participants, both partners and non-partners, with representatives from Governments, intergovernmental and non-governmental organizations, academia, scientific community and private sector.

Participants were invited to attend in their expert capacity, to share views and ideas, and any useful background material². The list of participants is annexed.

Summary points from the discussions:

(1) Needs and challenges associated with the management of mercury from oil and gas production, distribution and infrastructure decommissioning

Amongst others, the following aspects were raised during the discussions:

- Mercury may enter the environment through various pathways and at different stages of the oil and gas value chain, from the extraction to the production, transportation, refining, distribution, use to the decommissioning of infrastructure and management of waste generated at the different stages of the process;
- A significant fraction of mercury released may be captured, including for operational, health and environmental reasons, and subsequently treated as waste or traded as a commodity. This is especially significant in natural gas cleaning;
- Significant variations in levels of mercury present as a contaminant in oil and natural gas are observed both between and within geographical areas, as well as possibly over time in individual wells;
- There are limitations in public information on mercury content, emissions and releases from the sector, particularly at certain steps of the process such as extraction. This lack of information makes it difficult to quantify sector as a source of mercury at the global scale, as highlighted in

¹ <https://web.unep.org/globalmercurypartnership/partnership-advisory-group-meeting-10>

² Background material shared by participants in the meeting may be found at:
<https://owncloud.unog.ch/index.php/s/GBRNJmDFZF9JfsJ>

the UNEP Global Mercury Assessment 2018³. Highly variable process technologies complicate the lack of comprehensive activity data and of emission factors are complicating factors.

- A comprehensive overview of removal efficiency and the extent of uncontrolled releases to the environment is lacking;
- Potential needs were expressed with respect to (listing does not reflect any hierarchical order):
 - Further information gathering on certain aspects, including:
 - The geographical distribution of oil and gas fields with high mercury concentrations;
 - Mercury mass balances for natural gas processing plants and petroleum refineries;
 - The issue of oil and gas as a source of mercury supply, in particular when recovered from mercury capturing equipment;
 - Character of environmental releases as well as fate and transport of released mercury;
 - Refineries processes where mercury tends to accumulate;
 - Sludges, including those stored and/or accumulated at oil storage tanks and ships, which can contain large amounts of mercury;
 - Mercury in crude deposits at offshore operations, including FPSO (Floating Production Storage and Offloading) and FSO (Floating Storage and Offloading);
 - Inventories of tanks;
 - Analytical measurement data on mercury in oil and gas to allow their comparability at global level;
 - Further dissemination of information and awareness raising on best practices, including on:
 - The analysis of mercury content and fate, including removal, along the oil and gas value chain;
 - The environmentally sound decommissioning of production, transportation, and refining infrastructure, including pipeline installations, tank cleaning and floating storages of tanks which may be contaminated with mercury;
 - Mercury waste from shipbreaking, including sludges, contaminated oil, condensate and scrap residues, steel of holds and systems connecting to the holds and the associated transboundary issues;
 - The environmentally sound disposal of mercury waste generated in the sector;
 - The treatment and disposal of produced water containing mercury, and data collection by upstream operators on mercury in produced water.

(2) Existing relevant work and guidance on best practices

Amongst others, participants shared information with respect to the following:

- Available guidance, tools and resources, including:
 - The EU 2019 “Best Available Techniques Guidance Document on upstream hydrocarbon exploration and production” (available [here](#)), which covers best available techniques on off stream, on and off shore activities, including with respect to the management of produced water;

³ <https://web.unep.org/globalmercurypartnership/global-mercury-assessment-2018>

- IPIECA's 2014 [Good Practice Guide on “Mercury management in petroleum refining”](#);
- The “[Catalogue of Technologies and Services on Mercury Waste Management - 2020 version](#)” compiled by the leads of the Partnership area on mercury waste management, which highlights services provided by some partners of relevance to the sector⁴;
- Ongoing relevant work, including:
 - Intersessional work called for by the Conference of the Parties to the Minamata Convention on Mercury in relation to mercury releases and to mercury waste, which includes consideration of mercury from the oil and gas sector;
 - Ongoing work in Canada on the monitoring of mercury in the atmosphere, on modeling depositions, on aircraft measurements, on impacts of mercury from oil and gas industry on water systems, wildlife, and the local environment;

(3) Possible contribution of the Partnership to support the promotion of best practices and support moving the issue forward

The discussions highlighted the cross-cutting nature of the topic, which could benefit from the complementarity and cooperation of several Partnership Areas, including on “mercury air transport and fate research”, “mercury supply and storage” and “mercury waste management”.

Several avenues were suggested as possible contributions of the Partnership, amongst which supporting an enhanced overview of mercury along the different stages of the oil and gas value chains, including its fate and transport, measurement techniques and the species of mercury found; as well as facilitating information and experience sharing on the topic of mercury from oil and gas and best practices for its environmentally sound management.

Next steps

The type of output from the consultations process will be explored in consultation with the PAG co-chairs as well as interested Partnership Area leads and partners, and experts.

⁴ <https://web.unep.org/globalmercurypartnership/catalogue-technologies-and-services-mercury-waste-management-2020-version>

Annex – List of participants

GOVERNMENTS	
Canada, Environment and Climate Change	Alexandra Steffen
Canada, Environment and Climate Change	Andrea Darlington
Canada, Environment and Climate Change	Augustin Soinel
Canada, Environment and Climate Change	Geoff Stupple
Jamaica, Mines and Geology Division	Suresh Bhalai
Mexico, Agencia Nacional de Seguridad Industrial y de Protección al Medio Ambiente del Sector Hidrocarburos	Adriana López de Alba
Mexico, Agencia Nacional de Seguridad Industrial y de Protección al Medio Ambiente del Sector Hidrocarburos	Maxime Le Bail
Spain, Ministry for the Ecological Transition	Ana García González
Spain, Ministry for the Ecological Transition	Marina Arce Blanco
Spain, Ministry of Science, Innovation and Universities	Carlos López Alled
Thailand, Ministry of Natural Resources and Environment	Teeraporn Wiriwutikorn
United States, Department of Energy	Evan Granite
United States, Environmental Protection Agency	Ben Vauter
United States, Environmental Protection Agency	Paul Almodóvar
United States, Environmental Protection Agency	Rodges Ankrah
INTERGOVERNMENTAL ORGANIZATIONS	
Basel Convention Regional Centre Caribbean	Tahlia Ali Shah
IEA - Clean Coal Centre	Lesley Sloss
Secretariat of the Minamata Convention	Eisaku Toda
Secretariat of the Minamata Convention	Takafumi Anan
UNEP	Jacqueline Alvarez
UNEP	Sandra Averous
UNEP	Kenneth Davis
UNEP	Stéphanie Laruelle
UNEP	Josiane Aboniyo
ACADEMIA / SCIENTIFIC COMMUNITY	
AMAP	Simon Wilson
Institute of Geosciences and Earth Resources, National Research Council of Italy	Guia Morelli
Jožef Stefan Institute	Milena Horvat
Mineral and Energy Economy Research Institute	Magdalena Wdowin
University of Florence, Department of Earth Sciences	Marta Lazzaroni
University of Florence, Department of Earth Sciences	Orlando Vaselli
University of West Attica	Olga Cavoura

NON-GOVERNMENTAL ORGANIZATIONS	
Artisanal Gold Council	Jennifer O'Neil
Artisanal Gold Council	Richard Gutierrez
Congress of Aboriginal Peoples	Maeanna Merrill
Development Indian Ocean Network	Hemsing Hurynag
Environment Health and Disaster Management Initiative	Patrick Kamanda
Hazardous Waste Europe	Alain Heidelberger
International Association of Oil and Gas Producers	Sureiya Pochee
International Association of Oil and Gas Producers	Wendy Brown
International Society of Doctors for the Environment	Lilian Corra
IPIECA	Artemis Kostarelli
IPIECA	Rob Cox
IPIECA	Stephan Plisson-Saune
IPEN	Lee Bell
IPEN	Yuyun Ismawati Drwiega
Toxics Link	Satish Sinha
Toxisphera Environmental Health Association	Zuleica Nyocz
PRIVATE SECTOR	
Batrec	David Hunter
Batrec	Philippe Zanettin
Batrec	Tristan Cizaire
Best Mercury Technologies	Christine Sammut
Best Mercury Technologies	Robert Jan Dubbeldam
Chevron	Janelle Branch Lewis
Clairion	Zach Barnea
Concorde East/West Sprl	Peter Maxson
CPPE Carbon Process & Plant Engineering S.A.	Valentin Schmidt
Curium	Renaud Vencatassim
EX Research Institute Ltd.	Mai Kobayashi
EX Research Institute Ltd.	Takashi Nishida
Nomura Kohsan	Hiroki Iwase
Ohio Lumex	Rubin Bennett
Ohio Lumex	Joseph Siperstein
P S Analytical Ltd	Warren T Corns
SBB ENERGY SA	Dominika Bandoła
SBB ENERGY SA	Łukasz Lelek
SKK Migas	Kosario M Kautsar