Results of the pilot mercury release inventory in the Russian Federation

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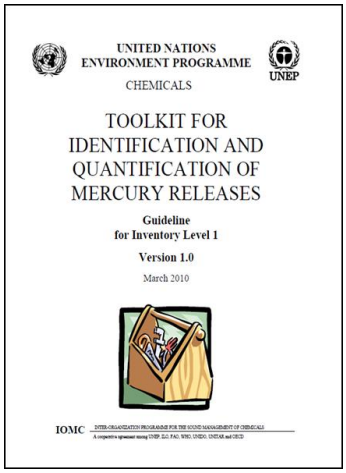
* Context

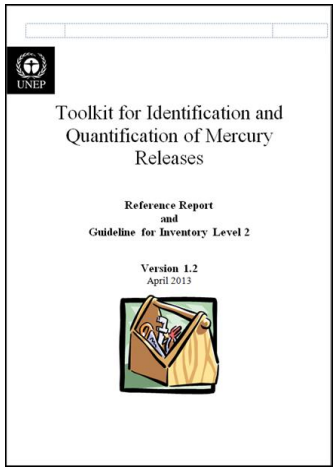
* Russian Federation signed the Minamata Convention on mercury on 24 September 2014;
* 7th session of the Intergovernmental Negotiating Committee, 10-15 March 2016
  - Preparations to the 1st session of COP;
  - BAT/BEP Guidelines developed and presented;
* 2016-2017 UNEP Global Mercury assessment

Project aim and objectives

- **Aim:** Protection of human health and the environment from adverse toxic influence of mercury
- **Objective:** Strengthen Russian Federation's capacity for identification of mercury sources, quantification, monitoring of mercury releases and priority actions to address mercury issues under a future global convention

Methodology





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* Overall results

Source category	Estimated mercury release, kg/year							
	Air	Water	Land	Byproducts	Regular waste	Special treatment/ disposal	Net release per category	% in total release
Extraction and use of fuels/energy sources	32 277	440	-	183	-	5 762	38 663	3%
Primary (virgin) metal production	45 334	18 206	712138	195344	187874	52 919	1 211 818	90%
Production of other minerals and materials with mercury impurities	5409	-	-	2030	74	-	7 515	1%
Intentional use of mercury in industrial processes	3977	400	5 158	397	-	36 004	45 937	3%
Consumer products with intentional use of mercury	3609	952	3 966	-	15202	7 657	31 388	2%
Other intentional products/process uses	143	2 577	143	-	2 577	2 434	7 876	1%
Production of recycled metals ("secondary" metal production)	72	87	-	-	-	4	164	<1%
Waste incineration	625	-	-	-	-	69	695	<1%
Waste deposition/landfilling and waste water treatment	751	18	-	-	6	4	780	<1%
Crematoria and cemeteries	334	-	4430	-	-	-	4 766	<1%
TOTAL RELEASE	92535	22672	725837	197 956	205 735	104856	1 349 592	100%

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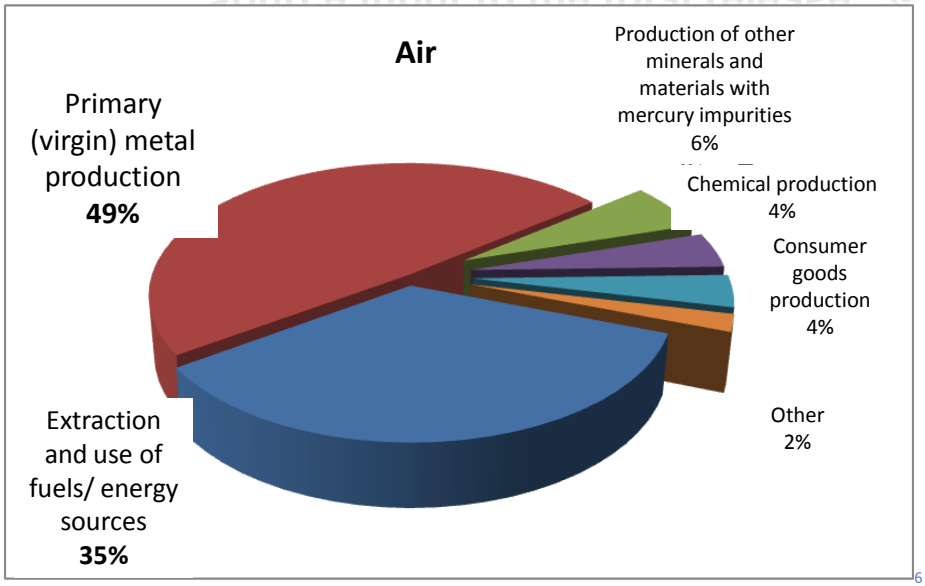
Source input to the total release, %



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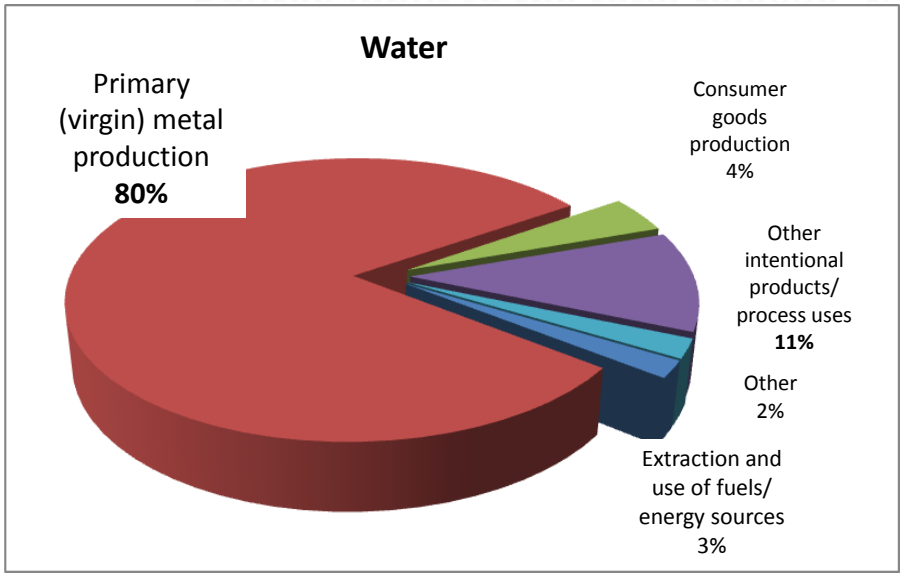
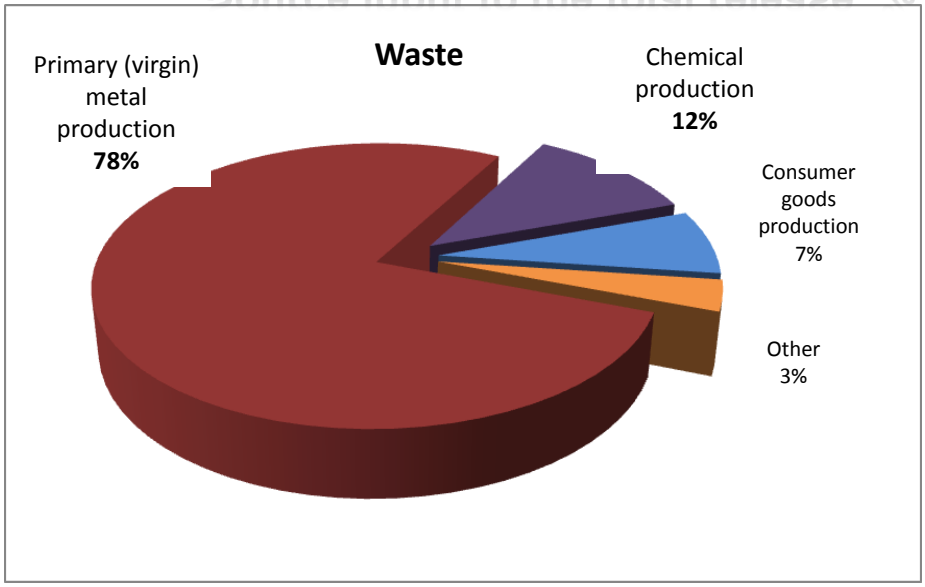
Source input to the total release, %



Source input to the total release, %



Mercury releases in copper production

Hg release into the environment
235,15 tonnes

Processing of concentrate
29,92 tonnes

Extraction and initial processing
205,23 tonnes

3132,9 thous.tonnes of concentrate processed
Hg content in concentrate
2.2-13.8 g/tonne

Major copper producers

352,5 thous.tonnes

387,9 thous.tonnes

145,5 thous.tonnes

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Mercury releases in gold production

284.7 tonnes of gold produced in 2012

Hg content in gold ore
1.02-18.2 g/tonne

52751000 tonnes of gold ore processed

Hg total release into the environment
791.3 tonnes

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Mercury releases from extraction and use of fuels/energy sources

Sources	Air	Water	Byproducts/ impurities	Special treatment/ disposal
Coal combustion in large power plants	18304	-	-	3887
Other coal use	12686	-	-	1656
Mineral oils - extraction, refining and use	634	358	-	154
Natural gas - extraction, refining and use	371	81	184	65
Other fossil fuels - extraction and use	199	-	-	-
Biomass fired power and heat production	81	-	-	-
TOTAL	**32275**	**439**	**184**	**5762**

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Mercury releases from intentional use of mercury in industrial processes

Source	Air	Water	Land	Byproducts / impurities	Special treatment/ disposal
Chlor-alkali production with mercury-technology	3974	397	397	397	34574
VCM (vinyl-chloride-monomer) production with mercury-dichloride (HgCl2) as catalyst	3	3	4760	-	1429
TOTAL	**3977**	**400**	**5157**	**397**	**36003**

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Mercury releases from consumer products with intentional use of mercury

Source	Air	Water	Land	Waste	Special treatment/ disposal
Thermometers with mercury	312	910	53	1785	65
Electrical switches and relays with mercury	1864	-	1864	7457	7457
Light sources with mercury	537	26	858	3889	103
Batteries with mercury	895	15	1189	2069	31
Biocides and pesticides	-	-	-	-	-
Cosmetics and related products	-	-	-	-	-
TOTAL	**3608**	**951**	**3964**	**15200**	**7656**

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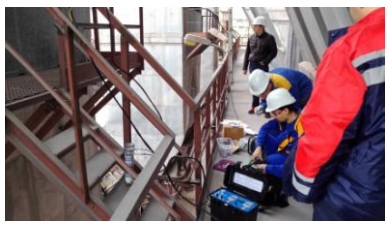
Measured mercury releases from industrial sources

Hg release tests performed:
1 copper smelter
2 cement plants
1 zinc plant (planned for June 2016)



Спасибо за внимание

THANK YOU FOR YOUR ATTENTION!