UNEP Global Mercury Partnership Cement Industry Partnership Geneva Meeting June 18, 2013



The objective of this partnership area is to minimize mercury releases to the environment from cement manufacture in ways that ensure reductions are globally significant.

The partnership area aims to support such efforts while providing additional information on cost-effective approaches for enhancing reductions of mercury emissions.

UNEP 2013 Global mercury assessment attributes 9% of emissions to Cement sector









Mercury Content of Fuels

Mercury co	ntent	mg/kg (ppm)
Coal		0.1 – 13
Lignite		0.03 – 0.11
Petcoke		0.01 – 0.71
Heavy oil		0.006
Liquid-waste der	ived fuel	< 0.06 - 0.22
Solid-waste deriv	ved fuel	< 0.07 – 2.77
Sewage sludge		0.31 – 1.45
Tyre-derived fue	l	0.01 - 0.4





Mercury Content of Raw Materials

Raw material	Mercury content in mg/kg
Limestone, lime marl, chalk	< 0.005 - 0.40
Clay	0.002 - 0.45
Sand	< 0.005 - 0.55
Fly ash	< 0.002 - 0.8
Iron ore	0.001 – 0.68
Blast furnace slag	< 0.005 – 0.2
Shale	0.002 – 3.25
Earth crust7 (avg.)	0.05 - 0.08





Raw Material & Fuel Influence on Mercury Emissions

20 ppb of mercury in mix \rightarrow 0.031 g/t-clinker 75 ppb of mercury in fuel \rightarrow 0.010 g/t-clinker Average mercury emissions \rightarrow 0.041 g/t-clinker

UNEP Global mercury inventory $\rightarrow 0.058$ g/t-cement University of Liège study (Europe) $\rightarrow 0.035$ g/t-cement Major cement company reporting $\rightarrow 0.032$ g/t-clinker

European Regulation:

maximum 0.050 mg/Nm³ (~0.11 to 0.13 g/t-clinker)

https://www.yunbaogao.cn/report/index/report?reportId=5_14065



ement Partnership Business Plan Priority Areas

sectoral mercury inventories and baselines

- emercury monitoring techniques
- e sectoral mercury emission inventories
- methodology for determining plant/process specific remission factors

n database of global mercury emissions with focus on ing countries which do not have such systems

nd encourage techniques to minimize mercury o the environment

of mercury abatement technologies for cement

etter understanding of effectiveness of various abatement es for specific plant configurations

guide for plants to determine appropriate control es for mercury – could be a basis for future BEP / BAT