

# UNEP's Work On Lead-Acid Batteries

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The Sustainable and Environmentally Sound Management of Used Lead Acid Batteries in Latin  
America and the Caribbean 23 October 2020

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# Outline

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- Lead-acid batteries and climate change
- Pilot project on the environmentally sound management of used lead-acid batteries in Bangladesh
- UNEP's mandate on lead

# Background

## Overview

**Lead ores** are mined as a by-product of copper, zinc and silver mining

- primary mining in 42 countries in 2018 (ILZSG 2018)

- secondary sources account for ~60% from recycling Lead products

Lead is a heavy metal; a cumulative, poisonous and persistent neurotoxicant; when released into the environment, does **not** break down



## Health and environmental impacts

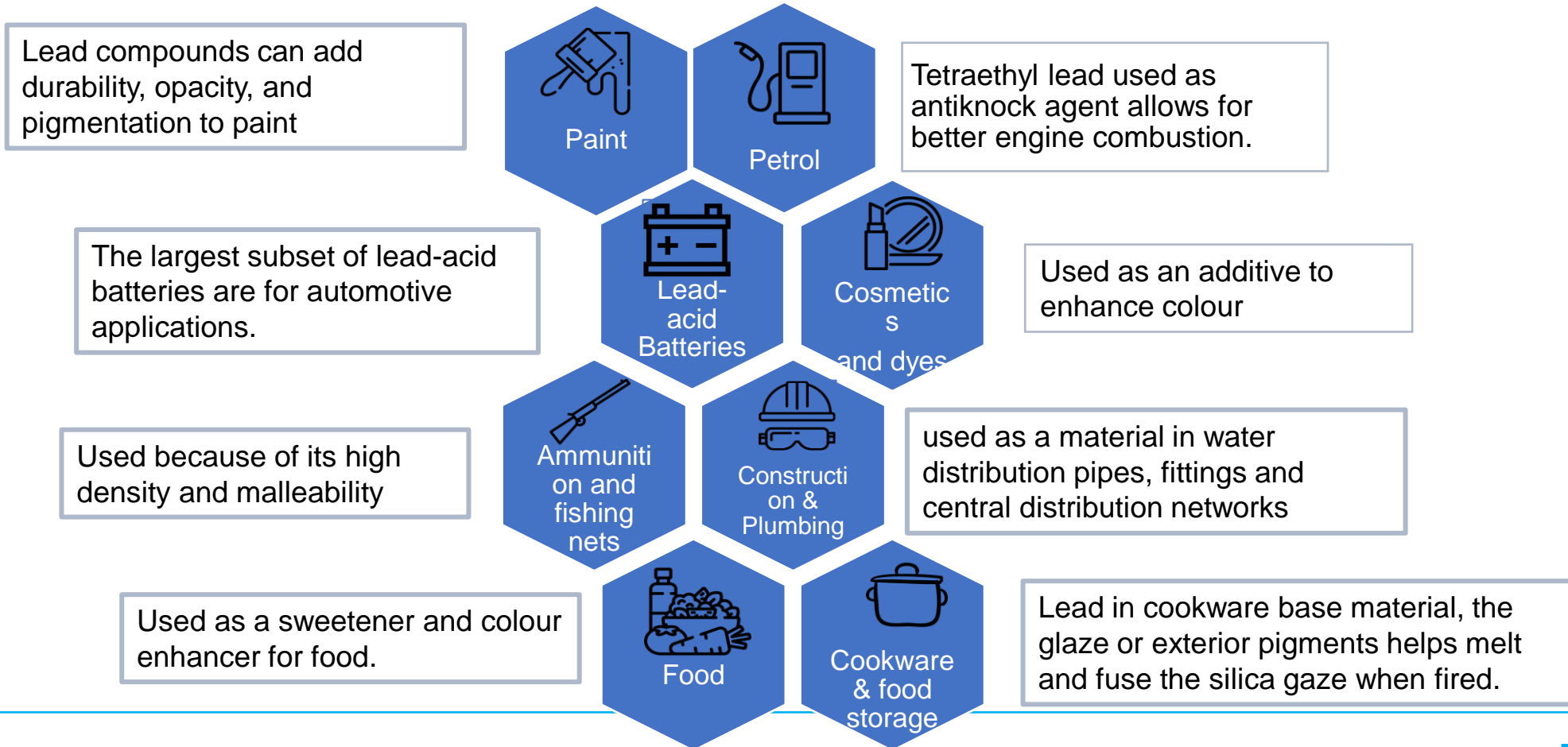
### Humans:

There is no level of exposure to lead that is known to be without harmful effects (WHO, 2019)

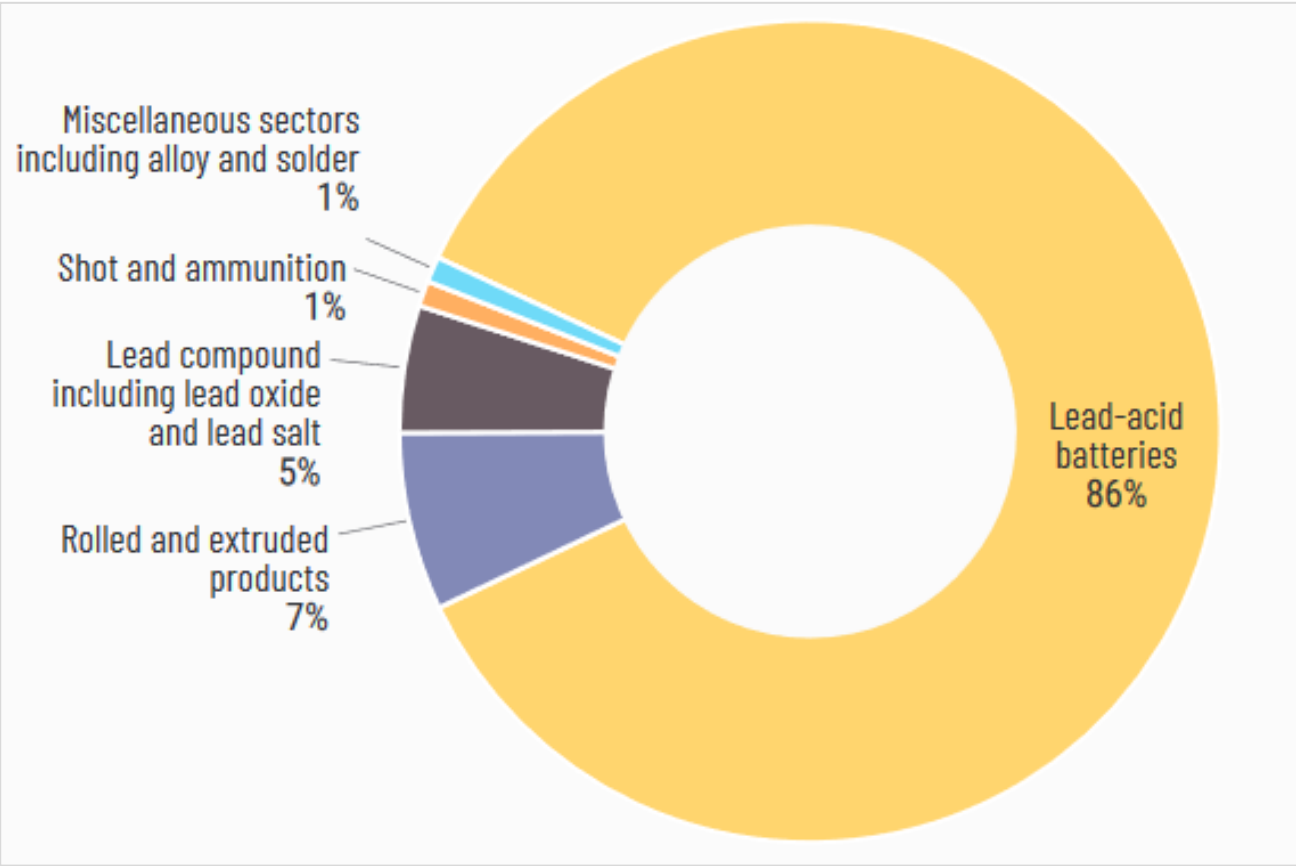


**Environment:** Lead is a significant source of environmental contamination

# Uses of Lead – Past and Present

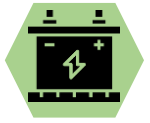


# Global Lead Consumption by Product in 2018



Source: International Lead and Zinc Study Group (2019)

# Lead Acid Batteries



Batteries are the largest and still increasing use of lead globally, with over 86% in 2018, largely due to the rapid motorization in emerging economies; increasing needs in the green energy efficiency sector



Lead recycling in batteries:

- predominant in African country: high lead content of batteries is economically attractive
- Important source of environmental contamination (terrestrial and aquatic ecosystems);
- human exposure mostly coming from emissions.

**Promoting the Environmentally sound Management of Lead Acid Batteries is linked to UNEP's priorities on Climate Change, Nature and Pollution**

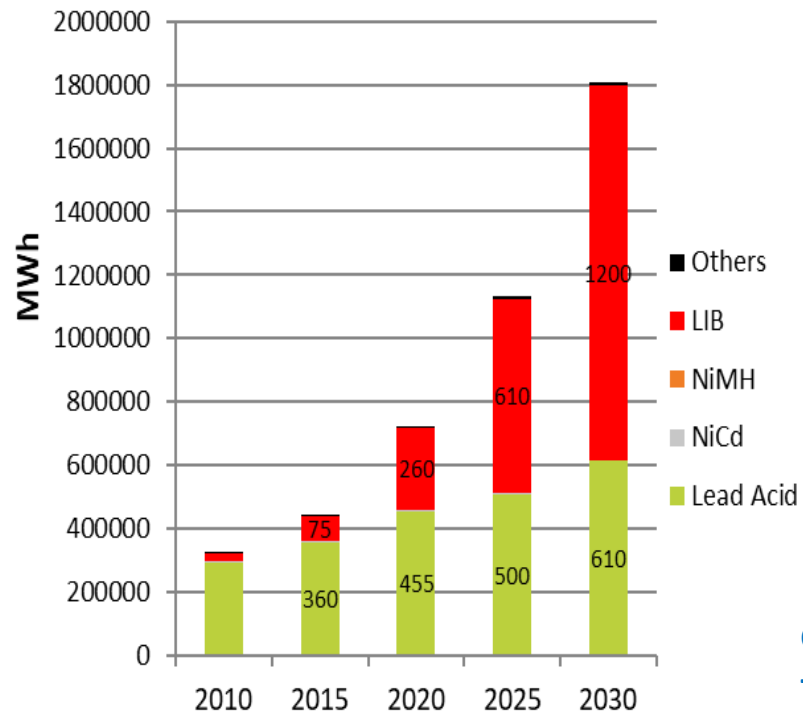


# LAB, Climate Change and Energy Efficiency

- With Green Energy Generation (solar and wind) growing rapidly to reduce greenhouse emissions and therefore mitigate climate change, LAB is the dominant energy storage media, so ULAB generation is expected to rise
- ESM of ULAB is linked to lower energy combustion, resulting in lower GHG emissions
- Recycling of ULAB reduces consumption of primary materials and uses approximately four times less energy than primary sourced Lead



# LAB, Climate Change and Energy Efficiency (cont.)



Global battery market trends to 2030

Source: Avicenne Energy 2019

Together lead and lithium batteries will play an important role in delivery of the vision to decouple economic growth and CO<sub>2</sub> emissions



# Charging the low carbon future: batteries are needed to greener world

Net zero carbon by 2050



# UNEP's Mandate on lead

UN Environment Assembly adopted the resolution 3/9 “ [Eliminating Exposure to lead Paint and Promoting the Environmentally Sound Management of Lead-Acid Batteries](#)” (December 2017)

## From GC to UNEA 3/9 resolution:

- Mobilize resources; advancing implementation of the MEAs as well as SAICM.
- Undertake capacity building activities to assist countries in implementing policy and strategic actions for the ESM of chemicals by
  - Convening and participating in partnerships
  - Developing, sharing technical and policy tools
  - Raising awareness - jointly with Secretariat of the Basel Convention.
  - Providing training and advice for policy development to aid development of new or improved policies or legislations to tackle ESM of chemicals.



# Progress on the implementation of UNEA 3/9 on ULAB



## Partnership

- UNEP partnering with International Lead Association and Pure Earth / Blacksmith Institute



## Knowledge

- Trade and market analysis available
- Needs assessment survey conducted
- 14<sup>th</sup> Basel Convention COP made reference to UNEA 3 resolution



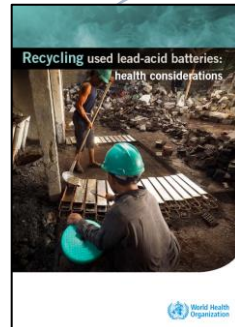
## Implementation

- Technical assistance and capacity-building provided
- Joint BRS-UNEP project proposal developed
- Proposal on best practices for lead-acid batteries



## Infrastructure

- UNEP joined the Global Battery Alliance
- Promote circular economy and alternatives for lead-acid batteries



## Awareness

Work with WHO

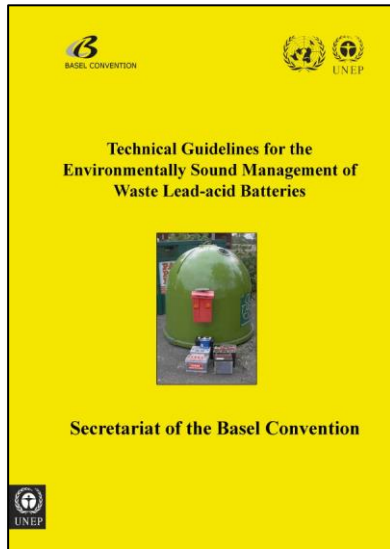
*Recycling of used lead-acid batteries: health considerations*



## Leadership

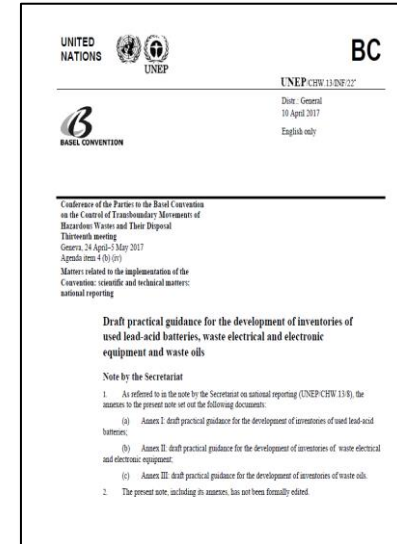
- Governments of Japan and Switzerland are providing leadership
- Supported related activities by the International Environmental Technology Centre

# UNEP Key Publications on Lead



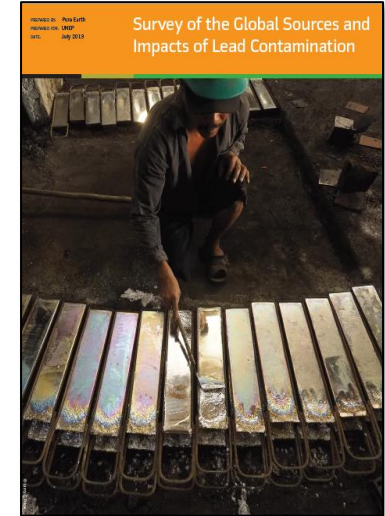
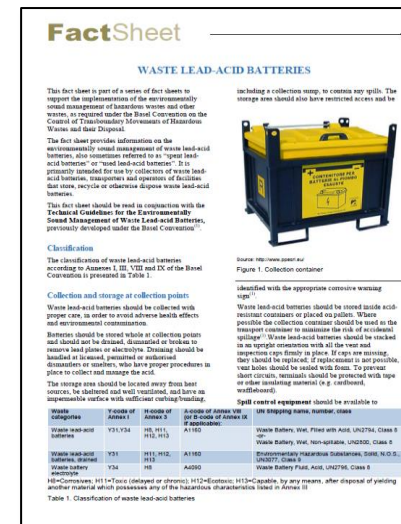
*Technical Guidelines for the Environmentally Sound Management of Waste Lead-acid Batteries (Secretariat of the Basel Convention, 2003)*

## Key scientific findings for lead (Chemicals and Health Branch 2010)



*Draft practical guidance for the development of inventories of used lead-acid batteries (Secretariat of the Basel Convention, 2017)*

## Fact Sheet on Waste lead-acid batteries (Secretariat of the Basel Convention, 2017)



*Survey of the Global Sources and Impacts of Lead Contamination (Chemicals and Health Branch, to be published)*



# BRS and UNEP Chemicals and Health Branch Joint Proposal

Enhancing the capacity of the Basel Convention Parties and UNEP member states to manage in a sustainable and environmentally sound manner Waste Lead Acid Batteries

## Aims of the project:

- Identification of hot spots due to inappropriate ULAB recycling
- Environmentally sound collection, storage, recycling, and transboundary movements of ULAB
- Provision of training and capacity building on adverse effects of human and environmental exposure to lead and on the ESM of ULAB

## Outcomes:

- Reduced lead exposure
- Exposed population informed about the procedure to minimize lead exposure
- Enhanced ESM of ULAB at the hotspot
- Raised awareness of policy makers at the national level on environmental and health risk of lead exposure

## Target audience:

National officials and the informal recycling sector and local communities exposed to lead.

## Regions:



# ESM of ULAB is a priority for the region

GEF Projects 5558 and 10279

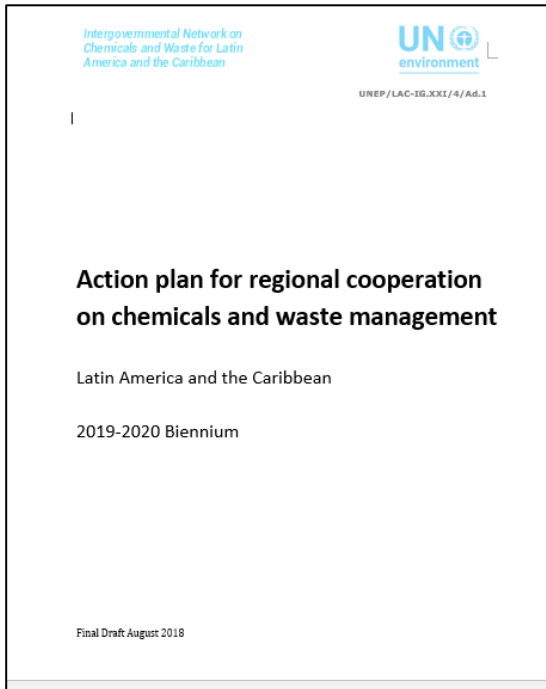
- Recent baseline and need assessment through GEF Projects 5558 “Development and Implementation of a Sustainable Management Mechanism for Persistent Organic Pollutants in the Caribbean” and 10279 “Implementing Sustainable Low and Non-chemical Development in Small Island Developing States” highlights **needs for tighter control on ULAB management by Caribbean government.**
- Focus on management of chemicals and wastes highlighted under the Stockholm Convention on Persistent Organic Pollutants and Minamata Convention on Mercury and the sound management of e-waste and end-of-life vehicles.



**Activities related to ULAB management are outside these project scopes.**

# ESM of ULAB is a priority for the region

## 2019-2020 Action Plan for Regional Cooperation on Chemicals and Waste Management



Adopted at the XXI Meeting of the Forum of Ministers of Environment (Buenos Aires, Argentina, 9-12 October 2018)



Waste is one of the **priority topics** identified.

- Sub-topic to be addressed: Promote best practices and best technologies to implement integrated management of hazardous waste (e.g. e-waste, used oils, used lead acid batteries, biomedical waste, and obsolete highly hazardous pesticides)

One of the priority activities requested by governments is to **facilitate the information exchange on the sound management of lead-acid batteries**



# ESM of ULAB is a priority for the region

BCRC Caribbean Business Plan 2020-2023



Proposed activities to allow for a more in-depth understanding of the current status of these waste streams with respect to their generation as well as their management at the ground level and to identify the best approaches for dealing with these wastes to protect human and environmental health:

Development of **inventories of ULABs** in the Caribbean, specifically for Saint Kitts and Nevis and Trinidad and Tobago, granted that funding can be obtained.

# Thank you



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