

Illicit Trade in Metal Waste

Focus on Batteries and Private Sector Led Solutions

UNCTAD Trade and Development Commission

Special session on illicit trade and waste

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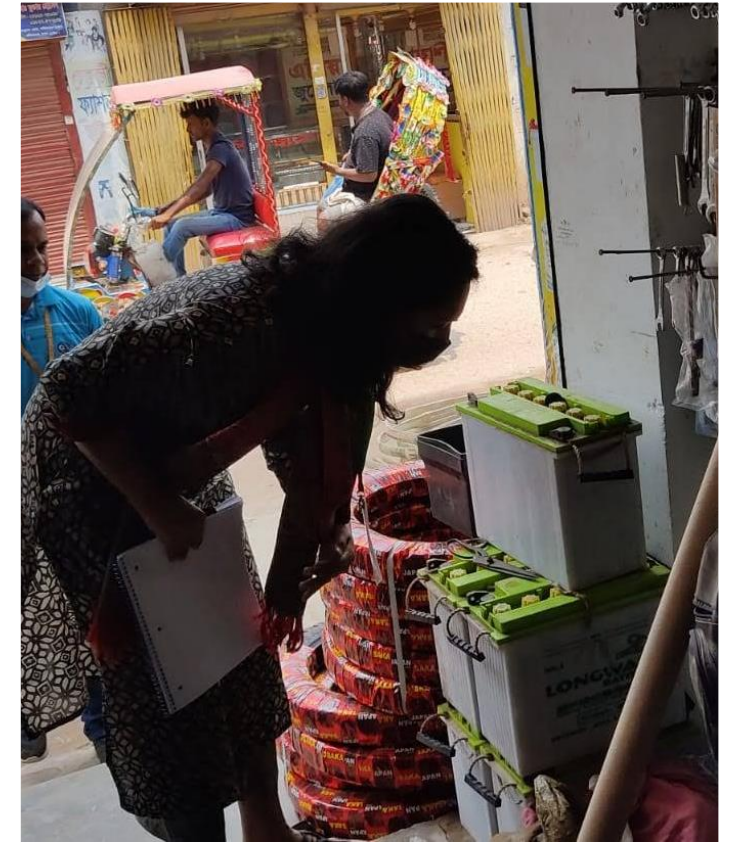
Georgetown University, Washington D.C.



Waste Metals – Large and Profitable Trade

- Metals are world's 5th most traded product, with a total trade of \$1.75 trillion in 2022 (OEC)
- This involves large metal waste and scrap trade, \$382 billion of it was exported in 2016 (OECD)
- Increase in electronics and renewable energy technology use is further increasing metal waste globally

Electric Three Wheelers in Bangladesh – Battery and Lead Waste



Around 2-4 million EZ Bikes in Bangladesh, running on a set of 5 lead acid batteries, sector is informal
Very poor quality batteries (life between 8 and 11 months) but very expensive (\$650 per set), \$1 billion market
High import tax on batteries ~ 60-80%, insulates the market, barrier to entry of longer lasting Li batteries
The most economically vulnerable are paying a high price for transition to electric vehicles

Rise of EZ Bikes → Rise of Used Lead Acid Batteries in Bangladesh

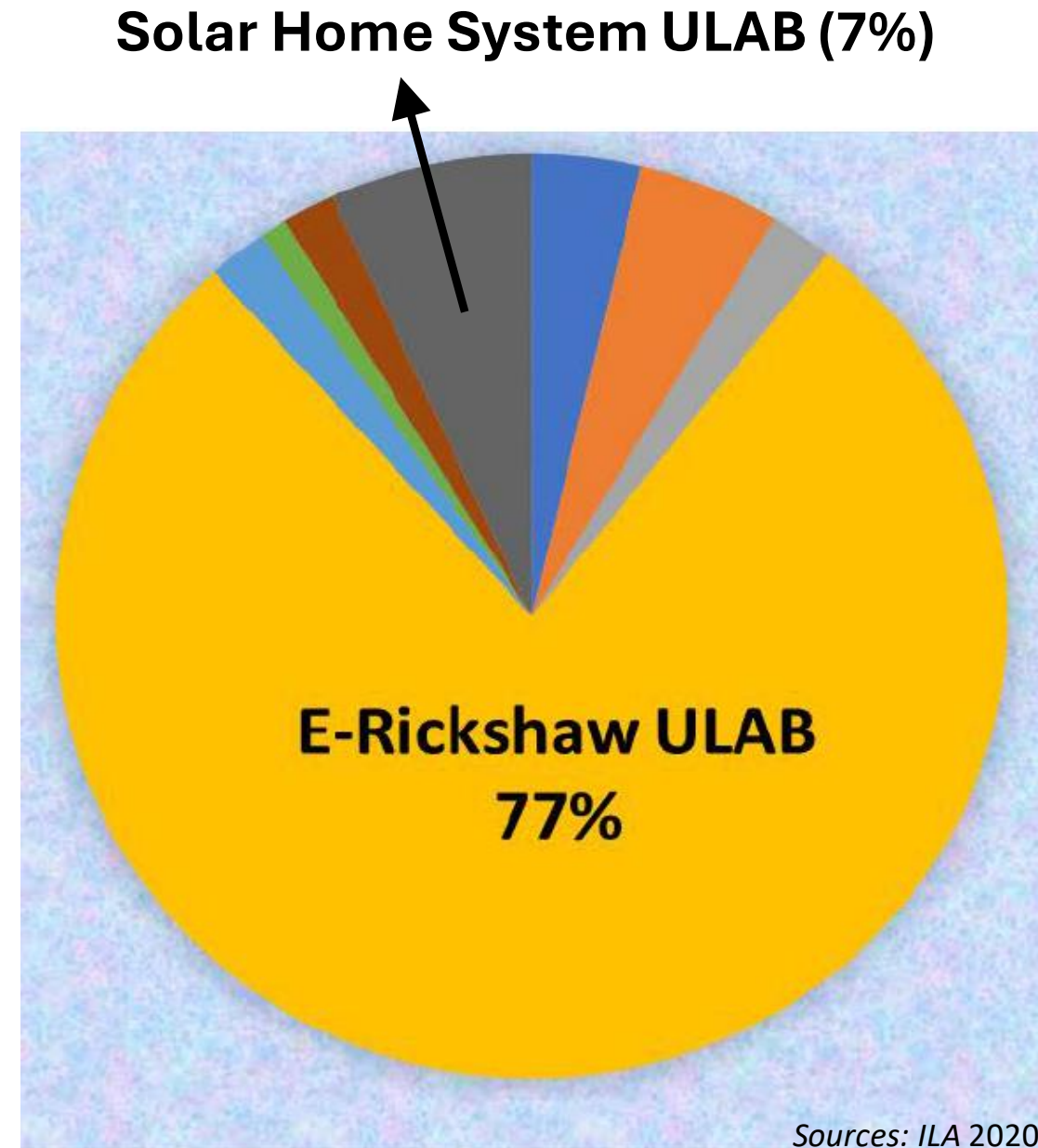
~ 167,000 MT of Pb recycled/ year from EZ Bikes

~ 12,000 MT of Pb recycled/ year from Solar Home Systems

80% of the lead is informally recycled (UNICEF 2020)
15-20% lead losses to the environment leads to deadly lead poisoning

2 in 3 children in Bangladesh have elevated blood lead level
800 million children worldwide have elevated blood lead level, concentrated in developing countries (UNICEF 2020)

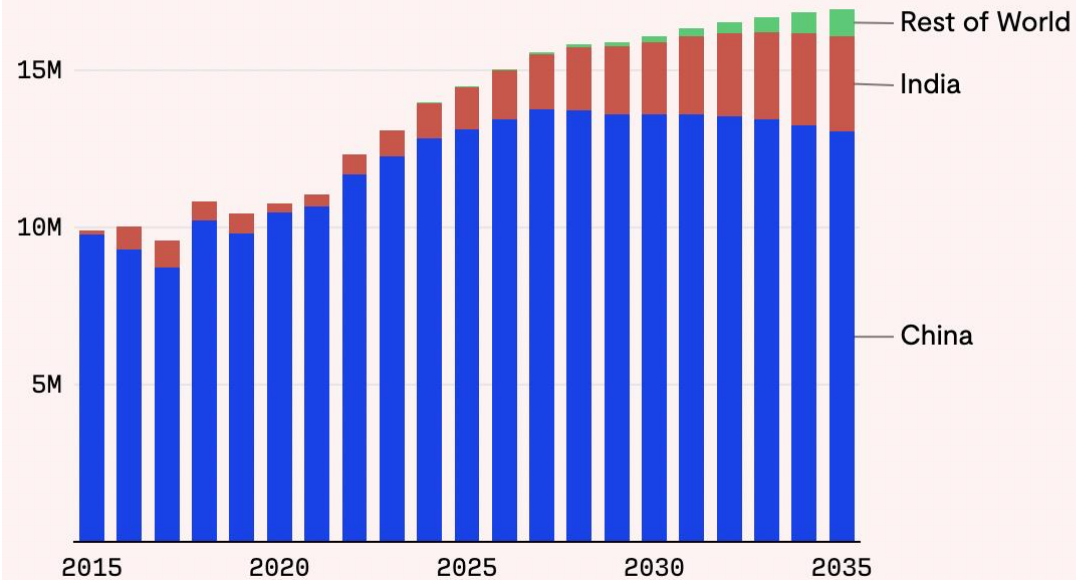
Renewable energy as a solution to climate change is generating toxic waste in developing countries



Electric Vehicles Continue to Grow in Developing Countries

Long-term electric three-wheeler sales outlook by market

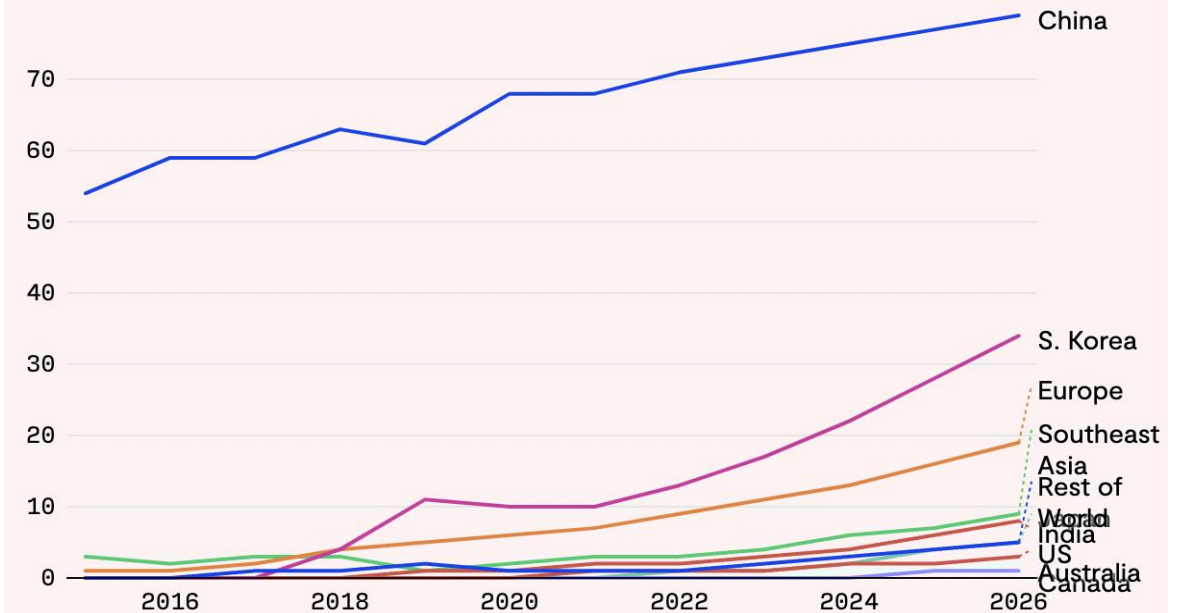
Three-wheeled EV sales are predicted to continue to **grow**, driven by India, China, and RoW markets.



Source: [BNEF](#)

Electric share of all two-wheeler sales outlook

Electric two-wheelers are predicted to dominate sales over their internal combustion counterparts.



Source: [Bloomberg NEF](#)

Where to intervene to reduce lead poisoning and increase circularity in battery use?

Focus on private sector led solutions to build formal circular supply chains and innovative business models

Lead Acid Batteries have one of the Highest Recycling Rate among all materials in the US and EU



In Developing Countries, Lead is Often Smelted Informally



Informal or Licensed but Environmentally Irresponsible Smelting



Over 1000 informal sites, constantly moving

Licensed smelting facilities, but operate with rudimentary environmental systems

Very low lead recovery, large economic losses



Subcontracting between large formal battery smelters/ manufacturers and environmentally irresponsible recyclers is common

Solutions: Improve Battery Quality, and Formalize the Supply Chain

Long lasting batteries will reduce lead poisoning. **How?**

Long battery life → Replaced and recycled less frequently → Lower emissions from recycling and manufacturing

2X battery life → ½ lead and energy emissions

Two solutions:

1. New business models and tax support to increase demand for high quality lead and Li batteries
2. Incentives to increase capacity utilization of facilities that recycle lead in an environmentally responsible manner

Lead and Battery Supply Chain in Bangladesh



BATTERY DEALERS

Low quality batteries with short life

BATTERY MANUFACTURERS

A mix of formal and informal manufactures



BATTERY USERS

> 2M Electric 3-Wheelers
Transport 100M passengers/day

New Business Models to Promote High Quality Batteries – Loan from Reputed MFI



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**MICROFINANCE LOAN
+
DIRECT SALES**



BATTERY USERS

> 2M Electric 3-Wheelers
Transport over 100M passengers/day

Loan – Signals quality, reduces financial constraints

Suitable for lead and Li batteries

We are testing the new business model in 300 garages in Bangladesh with partnering organizations



Designing battery lease and swap business models

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RESPONSIBLE RECYCLERS

Low utilization of formal recycling capacity
High cost of used battery collection and storage
Informal sector not taxed

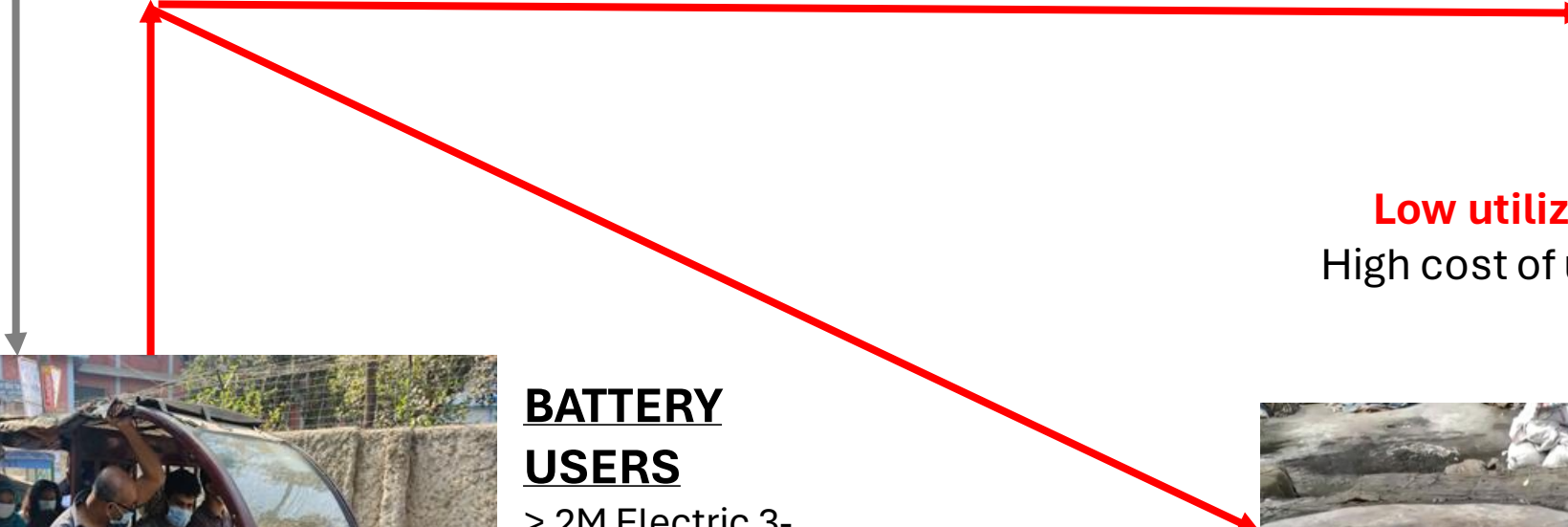
BATTERY USERS

> 2M Electric 3-Wheelers
Transport 100M

What % of used LABs go to landfill?



IRRESPONSIBLE RECYCLERS



Lead and Battery Supply Chain in Bangladesh

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3

LEAD IMPORTS

2

1

FORMAL RECYCLER

BATTERY USERS

ENVIRONMENTALLY IRRESPONSIBLE RECYCLERS



Lead and Battery Supply Chain in Bangladesh

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LEAD IMPORTS



FORMAL RECYCLER

2

Solutions determined from SMEP Dhaka Workshops, April 2 and 3

- Legalize the sector, register vehicles and batteries, tag them electronically
- Tag scanned at few qualified formal recycling facilities at end of battery life
- On scanning tag, qualified formal recyclers get incentives towards reducing collection and inventory costs
- Reduce import taxes on high quality Li battery cells, which will be assembled in few quality-controlled local facilities



BATTERY USERS

Policy Support Areas to Address Illicit Trade in Metal Waste

1. Develop the market for manufacturing and adoption of durable goods with longer life – new business models, lease finance, import and export tax policies
2. Develop formal reverse logistics and responsible recycling facilities – technology to trace metals through the supply chain, formal collection centers to buy durable goods at fair market price, reduce operating cost gap between formal and informal recyclers

Thank You

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