

LEAD-SAFE

ShaktiLoop

Battery recycling

Deposit-return EPR diverts Bangladesh's e-rickshaw batteries from toxic backyard smelters



✓ PROVEN PRECEDENT

Formal recycling reaches ~99% recovery (US EPA) under EPR

▲ WHY IT MATTERS

167,000 t lead waste/yr from e-rickshaws · ~3.6% of GDP

THE SITUATION IN BANGLADESH

Bangladesh now runs an estimated 3–4 million electric three-wheelers that move over 112 million people a day, and their oversized lead-acid batteries generate roughly 167,000 metric tons of lead waste each year ². Much of that flows to more than 1,100 informal and illegal recycling operations, where batteries are broken open and melted in open-air smelters near homes, schools and farms with little or no environmental control ². The toll is staggering: about two-thirds of Bangladeshi children (roughly 36 million) have elevated blood lead levels, lead pollution erases an estimated 20 million IQ points in children under five, and the damage costs the country around US\$10,897 million, about 3.6% of GDP ²⁵. Globally this same pattern of informal battery recycling is a leading source of childhood lead poisoning, and Bangladesh ranks fourth in the world for the number of children affected ¹⁶.

OUR PITCH

ShaktiLoop closes the loop with a deposit-return scheme backed by extended producer responsibility: buyers pay a refundable deposit on each battery and reclaim it only by returning the spent unit to a certified collector, so end-of-life batteries are routed to safe formal recyclers instead of backyard smelters ³. The wedge is economic, not merely regulatory — recovered lead carries real market value for manufacturers, and formal lead-acid recycling can reach recovery rates near 99% with new batteries made from over 80% recycled material, giving certified recyclers a revenue base to out-bid informal operators ³. The hard lesson from India is that mandates alone fail when informal recyclers still capture roughly 80% of battery waste, so ShaktiLoop pairs the deposit incentive with formal collection logistics that integrate or out-compete informal collectors at the point of return ⁷. Because childhood lead exposure costs lower- and middle-income countries an estimated US\$977 billion a year in lost productivity, even a partial shift from informal to formal recycling carries enormous health and economic upside for Bangladesh ⁴.

Built so the operator never fails

HelperChain doesn't hand out a loan and walk away. Every operator gets the **full rail** — inputs, training, finance, supervision and a **guaranteed buy-back** of what they produce. We carry the risk so an ordinary person can succeed.



Equipped & trained

We provide the tools, inputs and hands-on training to start — turning **spent battery** into a working operation. No prior capital or expertise required.



Funded, not indebted

Pay-as-you-go, **riba-free** finance turns a poor person into a *funded* operator — with **no debt if a cycle fails**. The network carries the downside, not the operator.



Supervised & supported

Ongoing follow-up and quality assurance — the single factor peer-reviewed evidence shows decides whether ventures survive (**p<0.001**). The operator is never left alone.



Guaranteed buy-back

HelperChain **commits to purchase the output at a fair, pre-agreed price**, so there is always a market — the operator just produces; **we guarantee the offtake**. This is what removes the fear of failure.



Surplus recycles

A thin margin is recycled to fund the next operator — so help compounds and the network grows stronger with every person it lifts.

The promise: we give the operator everything needed to succeed — and we buy back the output at a fair, pre-agreed price. Inputs in, output bought back, risk carried by the network — so they never fail alone.

SOURCES (7)

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