

Efforts Towards Establishing Inventories of ULAB in Ghana

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1.The lead-acid battery recycling industry in Ghana

Although lead-acid batteries (LABs) are most commonly used as starter batteries in vehicles, they are also widely used for stationary power storage. This function is particular importance in Ghana

- frequent blackouts require power back-up systems for many electrical and electronic appliances e.g desktop PCs can only be operated without risking data-losses in Ghana if connected to an uninterruptible power supplies (UPS). Each of these small-size UPS is equipped with one lead-acid battery.
- LABs are used in decentralize power generation systems (solar power for local use) and as power back-ups for server systems, ctelecommunication masts/towers
- for critical infrastructure such as hospitals.

1.1.Data sources

- Vehicle and other LAB bearing/dependent imports from Customs (GCNet)
- Driver and Vehicle Licensing Authority
- Energy Commission and Solar Importers Association
- Ghana Chamber of Mines
- ULAB Collectors/export (Go through BC notification)
- Formal ULAB Recyclers - monthly reporting through AKOBEN
- Scrap Metal Exporters - illegal
- Garages and battery chargers

1.2. Estimation of annual ULAB volumes

- There is no accurate data on the volumes of used lead-acid batteries (ULABs) generated per year in Ghana. Nevertheless, such a figure can be estimated using the following baseline data and assumptions:
- 0.82 million passenger vehicles in Ghana in 2015 (GCNet, DVLA, Manhart, Schleicher et al. 2014)
- 0.54 million trucks and buses in Ghana in 2015 (GCNet, DVLA, Manhart, Schleicher et al. 2014)
- 2.51 million desktop PCs in Ghana in 2015 (GCNet, Manhart, Schleicher et al. 2014)
- Average life-time of vehicle LABs in Ghana: 2 years[

Warm climate and rough roads are both factors that shorten the life-time of vehicle batteries. Thus, two years seem plausible in the West-African context.

- Average life-time of stationary LABs in Ghana: 5 years
- Average weight of LABs per passenger vehicle: 20 kg
- Average weight of LABs per bus or truck: 2 x 50 kg
- Average weight of LABs per small UPS (one per desktop PC): 3 kg

51: Estimation of annual generation of used lead-acid batteries

Type of appliance	Devices in use	Average weight of LAB	Average life-time of LAB	ULAB generation
Passenger vehicles	0.82 million	20 kg	2 years	8,200 t / year
Buses & trucks	0.54 million	2 x 50 kg	2 years	27,000 t / year
Desktop PCs + UPS	2.51 million	3 kg	5 years	1,506 t / year
Total				36,706 t / year

Source: Own calculation

Management paths of ULABs in Ghana



Source: (Manhart & Schleicher 2015)