Recent Indian Policy Initiatives in Lead Battery Scrap Management and their Impact on the domestic Demand-Supply Gap of Lead

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1. Supply-Demand of lead scrap in India

1.1 Of the global lead mine production of 4,54,000 MT in the year 2000, India's share was merely 1%. The production of lead in India from primary sources accounts for nearly two thirds of the total lead production in the country whereas, the world over, the production from secondary smelters accounts for nearly 60% of the total production of lead.

1.2 The production of lead in India has almost remained static during the last ten years. However, during the same period, the demand has more than doubled and this has led to a widening supply-demand gap situation. In fact, production of lead has marginally declined from a level of 64,116 MT in 1992-93 to 59,013 MT in the year 2000-01. Against this, the actual demand for lead has gone up from a level of 55,000 MT in 1992-93 to 1,22,600 MT in the year 2000-01.

1.3 It is significant to note that whereas the average growth rate in consumption of lead for all countries is merely 2.5% over the period 1997-2000, in India, lead consumption has grown at the rate of 10.5% during the same period. The steep growth in lead consumption in India is primarily due to the sharp rise in automobile production as a result of economic and market liberalisation. Substantial increase in use of lead acid batteries in domestic inverters and UPSs for computers is also a major contributing factor. Assuming a moderate demand growth of 6% per annum, the annual demand for lead is expected to be around 3,16,000 MT by the year 2016-17. Even if we presume that all the capacity additions planned in the organized sector during the next 15 years materialize, the supply-demand gap is expected to be around 1,64,2000 MTs by the year 2016-17.

1.4 It needs to be noted that the projections above do not take into account the demand for lead in the unorganized sector engaged in assembling/ reconditioning of batteries and also supply of lead from the unorganized sector consisting of backyard smelters. It is recognized that the supply of lead from the unorganised sector is substantial. However, there is no reliable estimates of its magnitude.

1.5 From industry sources, it has been gathered that import of lead metal was around 60,000 MT during 2000-2001. The industry sources have, taking into

account the role of the unorganized sector, provided a rough estimate of the total lead demand in India based on current levels of vehicle production, vehicle population and assumptions regarding battery life, etc. The details would be presented in the workshop.

The demand-supply gap may be bridged by one or more of the following:

(i) Expansion of existing primary smelter capacities

(ii) Increase in the secondary smelter capacities

(iii) Imports.

Limited availability of lead concentrate is a major inhibiting factor both for capacity expansion in existing smelters and for establishing new primary smelters. Inter-alia, given that the Basel Ban Amendment is already being acted upon by Annex-VII countries although officially the amendment is not yet in force, there is limited scope for import of lead battery scrap.

2. Legislation on Battery Scrap

2.1 In order to regulate collection of lead acid batteries and channelise batteries scrap to recycling facilities adopting environmentally sound processing technologies, the Batteries (Management & Handling) Rules, 2001 have been notified. The salient features of the Rules are as follows:

Salient features of Batteries legislation

1. Consumers to return used batteries and manufacturers / assemblers / reconditioners / importers responsible for collection of batteries and transport to registered recyclers.

2. Auction of used batteries only in favour of registered recyclers

3. Dealers are also responsible for collection.

4. Level playing field

5. Collection of batteries 50% in the first year, 75% in the second year and 90% from the third year onwards.

6. Batteries have been categorized.

2.2 Since 1999, a scheme for registration of re-processors of used lead acid batteries has been operationalised. Prior to grant of registration, inspection of facility is a must and in atleast ten percent of the cases, a second inspection is also undertaken. In addition to compliance with the regulatory standards, reprocessing units are required to follow the prescribed code of practice for

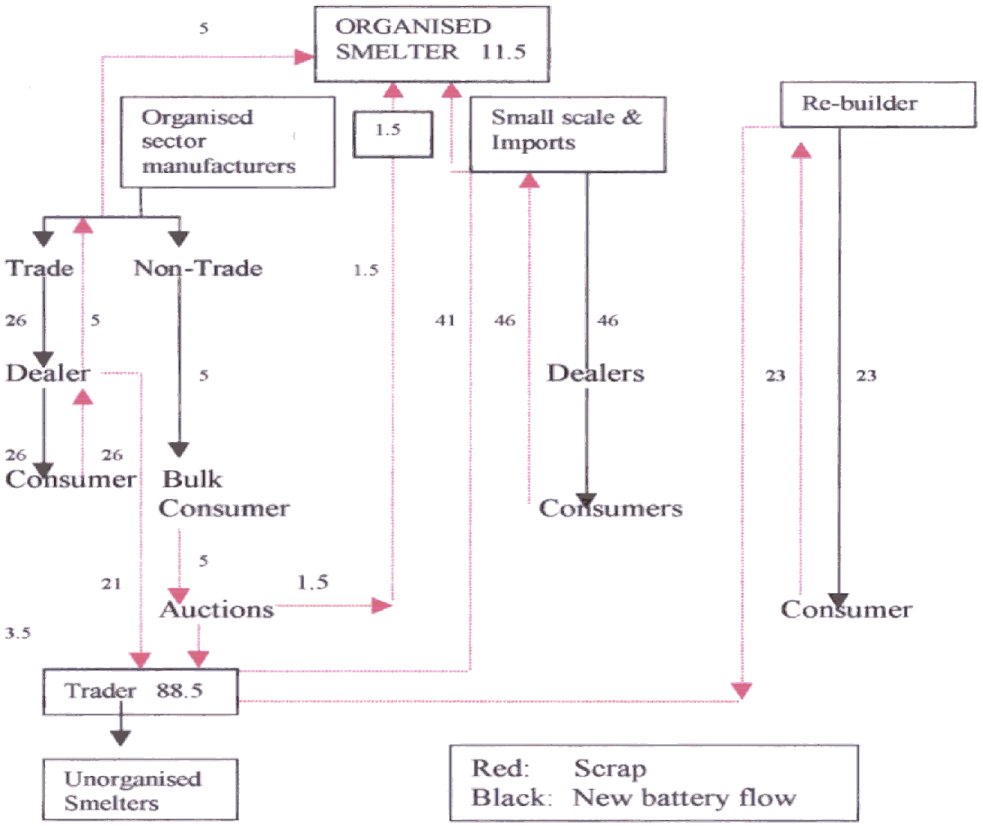
environmentally sound management (ESM) of lead acid batteries and possess proper facilities for disposal of wastes, the sludge, in particular. The air pollution control system stipulated in the ESM code would ensure that stack emissions would not exceed 10mg / Nm^3 for lead and 50mg / Nm^3 for total particulate matter. Secured land fill facility for disposal of sludge should have a leachate collection system and meet the tolerance limit prescribed for heavy metals, namely, cadmium, lead and nickel. The sludge produced by the reduction of lead in the furnace has to be reprocessed atleast twice so as to bring down the lead content in sludge and render it fit for disposal in a landfill.

2.3 As earlier stated the scheme for registration of recyclers has been in operation for about two years. Uptill now, 35 units have been granted registration following the procedure described above. As a result, today, there is a fair distribution of Units with environmentally sound reprocessing capability in the country. This has helped avoid transportation of lead metal scrap over long distances.

2.4 The new legislation enforced in tandem with the registration scheme would ensure that battery scrap is processed only by Units possessing ESM facilities. In addition, unauthorised backyard smelters and traders have been barred form taking part in auctions of battery scrap thereby choking supply channels of backyard smelting which poses serious problems by way of uncontrolled lead emissions and discharge of acid into the open ground / sewers. It is well recognised that poor lead recovery in the backyard smelters (around 30-40%) has been the primary cause for lower share of secondary lead production in the country. The rules also provide for an elaborate reporting system, which would help keep track of flow of lead in the economy. It is significant to note that the new legislation has already spurred substantial capacity addition in the organized sector of secondary smelting. Hindustan Zinc Limited and Binani Zinc Limited have announced plans to set up secondary smelters of capacity 35,000 MT and 25,000 MT respectively.

3. Operational aspects of battery channelisation

3.1 The All India Battery Manufacturers Association (AIBMA) has intimated that the flow of battery scrap prior to Batteries Legislation was approximately as follows:



Thus 11.5% scrap goes to organised smelters
88.5% goes to Traders who could channel it to unorganised smelters or give to organised smelters depending on the price.

3.2 The batteries going into OEM will ultimately return through the replacement route after the battery life is over and hence represents the additional or growth element of the lead metal demand. As such, availability of scrap for recycling is represented by the size of the replacement market. The replacement market in India is divided into two broad segments – trade and non-trade. The non-trade segment represents the Government departments / undertakings and institutional buyers. Trade accounts for 91% of the replacement market.

3.3 On why the dealer is tempted to sell battery scrap to the trader rather than the manufacturer, AIBMA has provided the following information.

	If he gave to company	If he gave to trader
Dealer buys back scrap From customer at	106	106
Price he gets from company	135	160-190
Margin on scrap	29	54-84
Income Tax @ 30% (say)	9	-
Net margin	20	54-84

Thus the dealer has the potential to make a much higher level of profit by selling collected batteries to the trader.

3.4 The re-conditioner/ assembler, in addition to the lead content of batteries, is able to make use of the hard rubber container, negative plates, seperators, etc and is therefore at an advantage vis-a vis the organised sector. Further, AIBMA has provided the following details to show the other cost advantages of the informal sector.

	Organised Sector (6 nos.)	Small Scale (50 nos.)	Re-builder / Re-cond. (thousands)
Consumer pays	100	80	60
Sales Tax	(11)	(9)	-
Distribution costs (dealer margins etc.)	(20)	(10)	-
Excise duty (16%)	(10)	(5) (concessional)	-
Realisation of Manufacturer	59	56	60

Thus a re-builder can afford to sell the product 40% cheaper and still realise the same amount as that of the organised sector.

3.5 In fact, it is the attraction of the dealer to sell collected used batteries to the trader and the cost advantages of the assembler/re-conditioner vis-a vis the organised sector that would pose formidable challenges in implementing the Batteries Legislation. However, the proposals on the anvil to set up new smelting capacity in the organised sector clearly points to the expectation of the organised sector to be able to procure adequate raw material in the form of battery scrap.

3.6 While it is true that international battery scrap prices are much lower than domestic prices, it has been understood that in planning new secondary smelting capacity, competition from imports of lead metal has also been carefully considered. However, given the enormous price differential between domestic scrap price (around $ 250/MT) and international scrap price (around $ 150/MT) and further considering that secondary lead production accounts for nearly 60 %

of total lead production globally, the price distortions and consequent implications for competitiveness of lead based products, batteries in particular, are very clear.

4. Impact of Batteries Legislation on Supply-Demand

4.1 It is recognized that the re-conditioners cater to a definite segment of the replacement demand. While the new Batteries Legislation would reduce scrap availability for backyard smelting (from where re-conditioners were sourcing their lead) the re-conditioners would continue to play a role in the replacement market and meet the market demand for re-conditioned batteries.

4.2 The role of traders in channelisation of battery scrap would go down over a period of time with stricter enforcement. The responsibility of the dealer under the Batteries Legislation to return collected battery scrap either to the authorised re-cycler or manufacturer coupled with action against defaulting dealers would eliminate the trader in course of time as collection of used batteries is to be stepped from a level of 50% in the first year to that of 90% from the third year onwards. The details of projected increase in availability of scrap for the organised sector secondary smelters would be presented in the workshop.

4.3 Enforcement would hold the key to success of the new legislation. The State Pollution Control Boards are to keep track of flow of lead in the economy from the periodical reports to be submitted by the manufacturers, dealers and re-cyclers in order prevent flow of lead to the backyard smelters. Creation of further secondary smelting capacity in the organised sector would be critically dependent on assured availability of battery scrap. With increased secondary smelting capacity in the organised sector and taking into account the enormous difference in lead recovery in backyard smelting (30 %-40 %) and the organised sector (around 90 %), secondary lead production in the country could be expected to play a greater role in bridging the demand-supply gap in times to come.

5. Way Forward

The serious distortions in price of battery scrap across nations brought about by the Basel Ban Amendment poses a formidable challenge to rapidly industrializing countries. The challenge has to be faced without compromising human health and environment. The strategy proposed by Global Environment & Technology Foundation to implement ESM for metal recyclables under the Basel convention by developing a new ISO 14000 series and making compliance with the new ISO series and relevant national legislation a perquisite for recycling facilities to trade in approved hazardous recyclables merits serious consideration.

Source:

r0.unctad.org/trade_env/ docsbangkok/Summary-Ind-Pres.doc