# Response to Public Comments Received on the draft BEST Standard (dated March 15, 2007) For Lead Battery Manufacturers

A diverse group of stakeholders have contributed to development of the Better Environmental Sustainability Targets (BEST) Standard for conducting environmental audits of lead battery manufacturing facilities for a third party verification system. As a final step in the standard development process, comments on the draft Standard were solicited. The following records the detailed replies to each comment arranged in topical order. Please note that although the identities of the commenter have been withheld, the sector affiliation is shown in parenthesis. Below are the responses to all written comments received on the draft BEST Standard (dated March 15, 2007):

## General

## **Objective:**

• Objectives of BEST - focus on applicable industries. Can BEST certification be made for manufacturers who use lead in the products? (Bulk purchaser. R-11)

This BEST standard is specific for lead battery manufacturers only. A similar standard could be developed in the future to cover other manufacturers who use lead in the products if there is interest. However, the current trend is to remove lead from manufactured products, with batteries being an exception.

### **Objectives and Scope -**

To promote the adoption of technical guidelines of the environmentally Sound Management of used lead acid batteries, lead and other substances with particular attention in the lead acid batteries manufacture to reduce adverse impact that causes to human health and the environment.

To identify the operations and procedures, for activities and process trading acid lead Battery Manufacturers is to be used to conduct environmental audits of lead battery manufacturing facilities for a third party verification system.

To introduce specific regulations, develop suitable of infrastructure and training of human resources in order to develop adequate and responsible environmental sound management, recycling and manufacture of lead acid batteries. (Government. R-20)

This BEST standard is not a regulatory but a voluntary standard. The proposed standard is limited to the lead battery manufacturing sector, and does not address the transport, primary smelting or the recycling sector, other than including criteria for a battery collection system. A similar standard can be developed in the future to cover the recycling sector. The BEST Certification should be viewed as one tool to complement other regulatory mechanisms to

improve the environmentally sound management of used lead batteries. We also agree that there is a critical need to further develop the infrastructure and to build capacity to improve the recycling and manufacturing of lead batteries.

## **Objective 1:**

### Criteria 1.1

• In addition to air and water, soil may also be added. (Government. R-19)

This standard specifies air and water emission limits because these are considered the most significant exposure pathways from lead battery manufacturers. In battery manufacturing, on site soil contamination is a likely result of the settling of airborne lead and a result of other spills or releases. There are no regulatory standards for soil contamination in operating industrial sites, although guidelines and standards do exist for residential sites and for soil cleanup levels. The goal of the BEST Standard is to ensure that preventative measures are taken to avoid further soil contamination by controlling air emissions and wastewater discharge.

• More Parameters to be included in discharge standards for treated effluent. Example: sulfate, % sodium, etc. Total Dissolved Solid is not included. (Battery company R-12)

BEST is a voluntary and not a regulatory standard which is weighted more heavily on the lead criteria. Most localities enforce variable standards for industrial wastewater depending upon the discharge location. The BEST Standard still requires battery manufacturing facilities to adhere to all such standards and monitoring results can be checked during regular audits. However, the comment raises some good points and the extension of the standard to these pollutants can be taken into consideration during the next revision.

## **Objective 2:**

• The objective measurement defined is more reactive (the blood lead level). Make the parameter more preventive - (lead content in exposure area). Recommendation is to follow ACGIH TLV Standards. (Bulk purchaser. R-11)

The BEST Standard includes occupational performance parameters for both blood lead levels and air lead levels. In addition, other criteria address occupational exposures including those placing restrictions on eating in the work area and personal hygiene practices.

While it is true that blood lead level measurements are not preventative, they are the standard way of monitoring a worker's lead absorption. Therefore blood levels tell us more than the airborne lead levels in the work place because they reflect any additional exposures from ingestion and absorption. They are also an important indicator of when an employee may require medical attention or chelation therapy.

The standard does incorporate the ACGIH Threshold Limit Value of 0.05 mg/cm<sup>2</sup> for occupational airborne lead levels (see criteria 2.3).

 Targets regarding emission, lead blood level, etc. is in the same field as in Europe. (Recycler. R-17)

The stakeholders participating in the BEST Standard setting process were provided with examples of regulatory lead levels for airborne emissions and blood from European and other countries. As the BEST Standard is intended to reward companies that meet better performance standards, the targets agreed to by the participants are similar to those in Europe and other countries.

#### Criteria 2.5 e

• Steps to be taken by way of medical treatment to reduce blood lead level. No woman should be permitted to work in lead based battery industries. In India, Factories Act 1948 prohibits women to work in such an industry. It should be considered a realistic approach. For workers, the average blood level is 40-60 ug/dl instead of 40 ug/dl for men. Women should not be permitted to work in lead based battery industry. (Recycler. R-1)

Medical treatment is necessary in extreme cases of overexposure to lead. However chelation, or the removal of lead from the blood should not be routinely performed on those occupational exposed to lead. Criteria 2.5 requires employers to monitor blood lead levels and to "take steps to reduce levels if necessary". This may be incorrectly interpreted to mean that employees should be routinely given chelating agents that can cause significant nutritional deficiencies and cause other side effects. Therefore, the audit protocol should specify that Chelation is an inappropriate means to reduce blood lead levels.

Although the Factories Act may prohibit women from working in lead battery industries, we have witnessed women working in production in such facilities in India. In addition, other countries where the BEST Standard will apply may not have such requirements to exclude women, or it may be viewed as discriminatory and therefore explicitly prohibited as it is in the United States. The reason that many advocate that women should be excluded is because of the well documented reproductive effects of lead on the developing fetus. However, as research on reproductive affects on men advances, we also see significant concerns on male reproduction at levels typically observed in the lead battery industry. The ultimate goal is to make the workplace safe for both men and women and the BEST Standard can be viewed as an interim step in that effort.

Although average blood lead levels for men in the industry may be in the range of 40 to 60 ug/dl, this is still too high a level to avoid significant chronic health

effects. The stakeholder group that set the blood lead level for the BEST Standard compromised in setting the level for men at 40 ug/dl.

• We could look into making the blood Lead level (BLL) more stringent, so that the community gets betterment in terms of exposure to environment. (Bulk purchaser. R-2)

The occupational blood lead levels stipulated in the BEST Standard could be lowered if additional engineering controls and other measures are adopted to reduce occupational exposures. In some countries, lead battery production has sufficiently improved to maintain workers' blood lead levels well below these criteria. However, lower occupational levels are unlikely to reduce exposures in surrounding communities from environmental sources. Instead we would focus more on stringent emission controls to reduce environmental sources of exposure. The lowering of the blood lead level may be considered in future updates to the Standard.

• The clinical profile along with nutritional, socio-economic of every employee and their dependents must be monitored frequently following the standard guidelines in a harmonized performance by qualified personnel. (Expert. R-3)

The monitoring of employees health is covered in the BEST Standard under criteria 2.6. The audit protocol will address the appropriate level of care that should be afforded under these criteria. Nutrition and socio-economic factors should be taken into account by the licensed physician in the clinical evaluation.

No criteria are included for monitoring employees' dependents under the BEST Standard. However, take home exposures from lead battery workers can significantly contribute to children's blood lead levels. The Standard instead attempts to limit take home exposure with personal hygiene practices and by requiring a change of clothes. It is important that workers know that their children are more at risk of exposure to lead. Therefore this should be covered in the employee training program. In response to this comment we propose to change the listed training topics under criteria 2.8.b. to explicitly incorporate take home exposures. The final training topic shall now state: "Good personally hygiene practices and the potential for take home exposures."

• The concern of pregnant women who are not only employed but residing in the vicinity of the manufacturing unit/ identified as potential risk of exposure must be monitored for hematology, blood lead level and Liver Function Tests (LFT) and Renal Function Tests (RFT) parameters at least once before delivery and with neonate after delivery. (Expert. R-3)

No additional criteria are included for monitoring pregnant employees under the BEST Standard. However, pregnant women are particularly vulnerable to lead as they tend to absorb more lead and lead is a well established reproductive hazard. As the employee will be undergoing regular medical surveillance under

the Standard, the physician should require additional tests and/or restrictions on pregnant women.

However, liver function tests really have no place in routine medical surveillance for lead exposure. Renal function tests, such as serum creatinine, are sometimes of interest (because substantial lead exposure can effect renal function, and because individuals with diminished renal function may be at enhanced risk from exposure). The need for tests of "effect", rather than "exposure" would only be needed if the exposure (i.e. blood lead level) were significantly elevated. Such tests should be sought by the physician overseeing employees who are removed from work area due to an excessive blood lead level.

• Assessment of toxicity due to elevated lead level in blood must be supported by biochemical investigation of hematopoietic and renal system. (Expert. R-3)

The routine monitoring of employee health is covered in the BEST Standard under criteria 2.6. The audit protocol should address the appropriate level of care that should be afforded under these criteria. The treatment and care of employees with elevated blood lead levels should be decided by the physician on an individual basis. The potential affect of lead on the blood forming and renal systems should be evaluated by the licensed physician in the context of the employee's medical history, work history and other factors.

#### Criteria 2.6 a

• It would be more appropriate if parameters for medical examination can be defined. (Government. R-19)

The monitoring of employees health is covered in the BEST Standard under this criteria. The audit protocol will address the appropriate level of care that should be afforded under this criterion

• Ideal. But physicians should be other than the company's physicians. (Expert. R-14)

The comment also suggests that company physicians may be biased or have less training and/or experience than other physicians outside the company. However, the potential conflict of interest between the company and the physician would still be present if the physician was contracted by the company rather than employed directly. If the comment is intended to address the quality of medical care, it may be useful to consider defining appropriate levels of training and/or experience for the physician. This will be considered in the drafting of the audit protocol.

In India the National Accreditation Board for testing and calibration of Laboratories (NABL) accredit and oversee both the qualification and competence of the pathologist who perform the medical examination. The Factories Act also specified requirements for in-house medical officers in large

industries. Other countries also have similar accreditation requirements for such professionals. This issue will also be monitored during the BEST certification audits. In case the findings indicate potential controversy or conflicts of interest in using a company's physician, the specific requirements can be considered and addressed in next revision of the standard.

#### Criteria 2.8

• How to implement effective training? Training program should explicitly demonstrate all listed information. The nature of operation that can cause lead exposures can be explained by using photographs from workplace. (Expert. R-14)

Indicator 2.8.b. provides the minimum guidelines for topics to be included in the workers' occupational safety and health trainings. The trainers can use photographs or any other media to enhance the course as they deem appropriate. The audit protocol will address the qualification of trainers and verification of the effectiveness of the training programs.

# **Objective 3:**

 Monitoring of suppliers, especially of recycled lead. Performance indicators or minimal requirements should be made mandatory towards environmental compliance and occupational health and safety. These requirements need to be explicit. (Expert. R-5)

Monitoring suppliers is addressed in Criteria 3.7. As condition for BEST certification, manufacturers are required to monitor their suppliers as stipulated in Indicators 3.7.a through 3.7.d. Moreover, Indicator 3.7.b requires that all suppliers comply with applicable portions of the BEST standard and battery companies must provide a written verification that all suppliers are compliant. Recycling facilities would therefore come under this provision.

In addition, suppliers that "manufacture lead-based components or parts" are subject to a third party audit under the provisions of the BEST Standard. More detail on this issue will be incorporated in the audit protocol.

• The objective should clearly mention that sound practices for disposal/recycling are also one of the objectives. It is however covered in indicators related to the objective. (Expert. R-18)

The recycling component is already been addressed in Objective 3 by "encouraging environmentally sound recycling". Minimize waste disposal is also part of the Objective. The indicators for these are stipulated in Objective 3 and in Annexure I (Battery Take Back System).

• It is not clear about how one of the major concerns, exposure of lead to children, will be addressed by this. Maybe, recycler/ manufacturer not only pick-up the used battery from customer's premises (which of course may be difficult to ensure) but manufacturer

should also get a suitable undertaking from their recyclers to ensure that it is not transported by children. (Expert. R-18)

The objectives of the BEST standard are to reduce lead exposure in communities, workers, and environment. Even though it does not explicitly mention the exposure of lead to children, reducing lead exposure to the communities and workers will directly and indirectly benefit the health and welfare of children. Most children get their lead exposure from air, soil, water, and dust. Transporting an intact battery does not result in lead exposure. This standard does not have any specific criteria covering the use of child labor. However, it does require that the facilities follow all laws and regulations, which include applicable child labor laws.

To establish specific standard on pollution and atmospheric contamination control relatives to parameters of SOX, NOX, PM10, PM >2.5, (Lead Particles), heavy metals, and other requires in the facility

To establish, define and design specific control measures on the working areas to developments activities and process of manufacture lead acid batteries.

- 1. Storage, for raw materials, manufactures products, equipments, and others.
- 2. Lighting area
- 3. Clean and organization
- 4. Signing area
- 5. Electricity supervision areas
- 6. Treatments acid (electrolyte)
- 7. Fire control. (spring and pipe waters, extinguishers)
- 8. Emergency system design
- 9. Supervision on soils contamination and control measures
- 10. Protective personal equipments (mask, glove boot, and overalls)
- 11. Define community educational and information programs about human health, and environmental exposition and financial inversions in welfare. (Government R-20)

Objective 3 concentrates on air emission and wastewater discharge to the environment. Standards for pollution and atmospheric contamination control relative to parameters of SOX, NOX, and PM10 are found in Criteria 3.1. Although the release of PM >2.5 (Lead Particles) is an important indicator of potential exposure, these emissions shall be monitored with a proxy through the PM10.

Lead soil contamination was not included as one of the indicators as noted. Soil contamination inside battery manufacturing facilities is not a likely source of environmental exposure unless the soil becomes airborne. Generally this would be less significant than the contribution of airborne emissions to soil and dust contamination in surrounding communities. Further contamination should be avoided with controls on air emissions and wastewater discharge.

Objective 2 of the standard deals with worker occupational health and safety, including workplace conditions, monitoring and training. The intent of this standard is not to duplicate safety regulations and other voluntary standards that are already in place such as OHSAS 18001. Safety topics, such as lighting of the work area, fire safety, and electrical safety are not being explicitly addressed but may be cited by BEST auditors. Emergency procedures are addressed in Criteria 2.7. Other listed topics including storage for raw materials and chemical safety are covered in Criteria 3.1.f. of the standard.

## Take back:

• BEST should include recycling of lead acid batteries as they contribute to 75% of the environmental emissions and handling whereas battery manufacturers are concerned with melting of lead, mixing of lead oxides, filling of lead oxides mainly. (Recycler R-1)

The proposed standard is limited to the manufacturing sector, and does not address the transport, primary smelting or the recycling sector, other than including criteria for a battery collection system. Battery manufacturing is associated with significant environmental lead emissions. Average exposure levels among children residing near battery plants in developing countries are for times the WHO acceptable level and worker is these plants have approximately twice the recommended exposure. However, a similar standard may be developed in the future to cover lead recycling enterprises.

• Implement a collection program for battery recycling. Buy back policy by replacement at low cost/door delivery by the company and cash incentives for collecting batteries without replacement. (Expert. R-6)

As a condition of the certification, the lead manufacturers agree to take back used batteries for environmentally sound recycling. The battery recycling collection program was discussed at length in the stakeholder meetings. It was the consensus of the committee to develop a performance based system. It provides that used batteries are collected directly by the manufacturer, wholesaler, or specialized collector appointed by the manufacturer. Seller is to provide Buyer with an equitable fee for each returned use battery. In addition, we have proposed model contract language for a lead battery take-back system that specifically applies to bulk purchasers.

• Think of reuse before recycling. Car battery can be substituted for PV battery and useful life before recycling. (Recycler. R-7)

Reuse before recycling is economically and environmentally sound where applicable. Efforts that implement the reuse of lead batteries to the full extent of their lifetime usage should be encouraged.

• Public awareness to be created only to buy best eco-labeled products. (Expert R-10)

Eco-label products will be promoted to the public by means of posters and other media outlets. In India, the Quality Council of India is providing support to the National Referral Centre for Lead Poisoning in India (NRCLPI) to conduct awareness programmes to the public. Moreover, the Indian Ministry of Environment and Forests (MOEF) has also indicated its willingness to sponsor further awareness creation efforts through media or stakeholder workshops.

• Since the primary concern is getting back used batteries. It looks from the PCB (Pollution Control Board), only 15% collected. Scope should extend the same. (Bulk purchaser. R-13)

The take back provisions in the Standard do require companies to take steps to improve their performance in this regard. Annexure 1 requires that increase battery companies increase their take back rates by at least 20 percent over the previous reporting period until the target goal of 90 percent overall collection is achieved.

• Minimum take back percent is not specified. A company with 0% take back can't improve by 20% - or it would still be at 0%. A minimum level should be established. Therefore recommend a minimum take back rate of 20%. (NGO. R-16)

The fair application of the BEST Standard to both new and existing manufacturers does require that a baseline be established. The Indian Ministry of Environment and Forests (MOEF) recently indicated that the average battery take back rate among manufacturers in India is about 19%. The standard should also allow for some fluctuation during reporting periods as long as the annual trend is maintained. As the auditing interval is once per year, improvements should be reflected on an annual basis and not based on the shorter reporting period. In addition, the Standard should not unduly penalize companies that already invested in successful take back programs by requiring them to achieve substantially higher increases on a percentage basis. For these reasons, a minimum 20% take back rate is a reasonable suggestion. The Standard will be revised to require this minimum rate in addition to demonstrating a 20% improvement on an annual basis.

• The battery fee is paid by the consumer for the disposing of the battery! It is under the name of Environmental costs on the invoice! So in conclusion if you go to the garage you must pay extra € 2,50 for disposing for your battery (it is in the price of the new battery of course). Now due to high LME (London Metal Exchange) price of lead on the global market, the same garage gets paid by the waste collector to allow him to collect his waste batteries for recycling. So waste collectors (and also scrap dealers with permits to do so) must pay up to € 250,00 per ton of collected waste batteries for recycling. In conclusion, the garage today gets paid by the consumer per piece (€ 2,50

per waste battery (this money is also for collection of oil and other chemical waste from garages) and gets paid for the collection of the waste batteries that go in direction of recyclers. Good business today! Each box can store more or less 60 waste batteries; the weight of the box is than around 1.000 kilogram. Due to the high value of the lead scrap today, in the developing countries the collection of scrap batteries can be done without the system that's exist in Western Europe. So no charge for bringing in your scrap battery but pay a little bit maybe.

The formula on page 12 is: (A \* B)/1.2 = battery fee.

A= lead price per kilo on the LME, for the moment € 1,40/kg. B= Dry weight of the battery, in the Netherlands more or less 8 kg for normal starter battery.

1) Conclusion, battery fee is € 9,00 per battery.

Collection boxes have 600-liter content and can have about 60 waste batteries. The "profit" is now € 540,00 per box, that is also about 1.000 kg per box collected.

2) Conclusion, consumers will pay per ton (1000 kg, about 60 batteries) delivered € 540,00/ ton for the transport and the recycling of the batteries.

But on the other hand, due to the very high value of the lead battery, recyclers are willing to pay per ton for the batteries about € 400-450,00 per ton delivered to their plants.

3) So there is for collection at the garage, transport to the recycler and the final recycling around € 1.000,00/ton available.

Way too much! In Europe anyway.

Normal fee par battery for the consumer in Europe that is on the invoice as inventiomental costs is around € 2,50 total! (Recycle. R-17)

The battery fee in the BEST Standard is the amount paid to the bulk "consumer" not the amount the consumer pays to dispose of the battery. The fee paid to bulk consumers is set purposely high to provide an incentive for a high rate of collection return. This fee does not pertain to retail consumer batteries. The standard for the retail (or direct consumer) sector simply requires manufacturers to improve by 20% per year from existing collection rates.

However, the goal with the fee is to set a level that will provide an incentive in developing countries that will encourage bulk battery purchasers to return the batteries back to battery producers to make sure they get to environmentally sound recycling facilities and not to the "unorganized" sector and roadside

smelters. The costs will become part of a contract negotiated with the bulk purchaser. This fee is also designed to avoid bulk purchasers from auctioning off used batteries to the highest bidder.

In the U.S. the government mandated fee (which varies by state) is approximately 50 percent higher than the cited level of 2.50 Euros in Europe in order to encourage returns. In developing countries like India, the street price can be very high (or about 30-50% higher than the 2.50 Euro average fee cited) because the "unorganized" sector has no significant overhead and pays no tax.

## **Other General Comments:**

• The standard could be taken up with Society of Indian Automobile Manufacturers (SIAM) to make it a regulatory requirement so that OEM's like us have better control. (Bulk purchaser. R-2)

This is a voluntary standard. Upon successful implementation of the standard by the industry, it will be up to SIAM to adopt and influence their members to adhere to the requirements of this standard. Governments may also adopt the program as part of a regulatory requirement.

• Baseline data to be collected before the standard is released or before adhering the system by the industries. (Bulk purchaser. R-4)

Review of primary baseline data was performed during the pilot project phase. Moreover, the audits during the implementation of this standard will allow for the collection of more extensive data.

• Like Environmental Management System (EMS) objective and target also should be included in the standards apart from numerical standards. (Bulk purchaser. R-4)

Similar to the EMS systems, objectives are included in the BEST Standard.

• Standards should be bench marked with best achievable levels attained by international manufacturers. (Bulk purchaser. R-4)

Bench marking with best achievable levels attained by manufacturers is also a goal of the BEST standard. For example see Criteria 3.4, 3.5 and 3.8, which are designed to be readily bench marked.

• A continual improvement of social issues could be looked at. (Expert. R-5)

The BEST standard is developed with a lead poisoning focus to address the health and environmental effects on society. Companies are being encouraged to adopt improved pollution control measures so as to improve workplace conditions and lessen community and environmental impacts. By adopting this

standard and having eco-labels placed on their products, battery manufacturers are in fact reducing impacts of their operations on human health and environment. However, the standard is not intended to address other social or labor issues beyond the inherent health and environmental benefits. Other certifications (e.g. SA 8000) already address social issues in the workplace in a broader format and we are intentionally not duplicating existing efforts.

• All parts are good. Comments have to be made by industries. (Government. R-8)

The BEST standard is being developed in partnership with the battery industry, major battery purchasers, NGOs, government, and other experts. Comments from all parties are being reviewed and incorporated in the standard.

• Can we have process of accreditation of occupational exposure analysis labs? Present scheme do not have consistency in analysis. (Bulk purchaser. R-11)

Currently, in India there are accredited laboratories to perform lead blood testing but not for environmental analysis. The consensus is that there is a need for a specialized accreditation for environmental laboratories.

The National Accreditation Board for testing and calibration of Laboratories (NABL), located in Delhi, is the sole authorised agency for accreditation of medical laboratories, as per the international standard ISO 15189. Hence, only laboratories accredited by NABL are deemed as qualified to carry out blood lead level testing. At present there are accredited laboratory available in Mumbai, Tamil Nadu, Andhra, and Karnataka, for blood lead checking. If blood lead samples are analyzed by an in-house company laboratory without this certification, the standard requires that an independent accredited laboratory must analyse duplicates of at least 10 percent of the blood samples for validation purposes.

• Very good initiative. Resources utilization data of BEST (global) manufacturers maybe used for bench marking. (Battery company R-12)

Bench marking with best achievable levels attained by manufacturers is also a goal of the BEST standard. For example see Criteria 3.4, 3.5 and 3.8 which are designed to be readily bench marked.

• Will environmental audits by 3rd party verification system be happening? (Expert. R-14)

Yes, the BEST process will require third party verification by certification bodies accredited by national accreditation bodies and will be required to meet additional requirements specific to this standard.

• BEST standard is very comprehensive and relevant. However, there must be specific incentive for industry to accept it over other mechanisms e.g. ISO 14001, OHSAS

18001 & amp; regulatory requirements of the country. As the industry is already overloaded with standards, it must have special interest to go for it voluntarily or for regulatory requirements. (Expert. R-15)

The BEST standard is a voluntary standard and it does not duplicate any existing efforts. The goal is to encourage companies to adopt improved pollution control measures by offering an eco-labeling program as an incentive. Companies that meet these standards are eligible to place eco-labels on their batteries, which will contribute to their marketing efforts and enhance their public image. Promotion of the eco-label will be necessary to encourage the industry to participate.

• Keep registers of all operations concerns to references at the input and output in the facility (for five years at last). (Government. R-20)

Through the stakeholder process, we have not identified a need to record production inputs. However, participating facilities will be required to track their waste outputs as part of the standard requirements for recordkeeping. More details, such as recordkeeping time requirements, will be addressed in the audit protocols.

• Recommend - To enhance this regulation with regional or international instruments that promotes recovering and recycling used lead acid batteries and agreements between informal sectors recyclers, formal recyclers, and manufacturers, many factors in the assessments could be references in those actors respect to the relation between them. (Government. R-20)

The BEST certification standard is not a substitute for good public policy or regional and international cooperation to promote improved management of used lead acid batteries. The standard should be viewed as one additional tool to promote the environmentally sound recycling of batteries.