Environmentally sound management of used lead batteries continues to be an issue that needs addressing, writes Bob Tolliday of the International Lead Association.

How the lead industry encourages responsible care around the world

One of the long-term aims of the lead industry has been to share knowledge on the sound management of lead, in particular the recycling of lead batteries, in developing countries and those regions in transition.

The Lead Action 21 (LA21) programme of the International Lead Association (ILA) was established to provide a focus for members to share past, present and future initiatives designed to encourage and embed the principles of sustainable development throughout the lead producing world.

Effective management practices can reduce the risks of human and environmental exposure resulting from lead recycling and bring about significant improvements in public health.

In Central America and the Caribbean, for example, ILA has been involved for many years in resolving lead emission and discharge problems and has given guidance on the design and process technology optimization for two new secondary lead plants.

More than $20 million has been spent to bring the lead recycling plant in Costa Rica and the Meteoro VERI facility in the Dominican Republic into line with technical guidelines for environmentally sound management of waste lead batteries derived under the Basel Convention.

Lead Action 21 has also produced a series of freely available guidance notes (www.ila-lead.org/responsibility/guidance-notes) on Working Safely with Lead, which explain in a non-technical way how to manage and minimize the risks of lead exposure. These complement a widely regarded set of benchmark tools that are being used by ILA with agencies, governments, regulators and NGOs in countries ranging from Costa Rica to Senegal and India and more recently in China and Indonesia.

One of the key issues identified in the developing world has been the lack of understanding of the risks of improper used lead-acid battery (ULAB) collection and recycling by both regulators and operators.

In this respect a Benchmarking Assessment Tool, developed by ILA with the China Non-ferrous Metals Industry Association (CNIA) and the Basel Convention Regional Centre for Asia and the Pacific, has been an ideal auditing and assessment tool for regulators.

It allows a quick and easy-to-use qualitative assessment of environmental and health and safety performance, based on benchmarks set by global leaders in the lead industry.

The tool compares the recovery and recycling procedures and processes with the industry's well-established good practices and identifies key areas in ULAB recovery and recycling operations that should be improved to minimize occupational and environmental exposure to lead.

A recent example of the benchmarking tool in action was when Brian Wilson, of ILA, gave a presentation on cost-effective mitigation measures for the environmentally sound management (ESM) of ULAB at a workshop in Jakarta, Indonesia, organized by the Basel Convention Regional Centre for South East Asia.

The workshop delegates visited the PT Muhtomas's ULAB recycling plant so that the delegates could see ESM in action.

In China, ILA has also worked with the NGO Pure Earth, under a European Union-funded project managed by Yeo Lin, a professor at Zhejiang University. The objective of this project was to share the lead risk reduction strategies developed in the EU and North America with the Chinese lead battery industry and recycling sector.

ILA and the Association of European Automotive and Industrial Battery Manufacturers (EUROBAT) also co-hosted a visit by a Chinese government delegation to London that included not only seminar sessions on the effective implementation of European environmental legislation, but site visits to the battery manufacturing plants of Johnson Controls in Germany and EnerSys Power Systems

Andy Bush, managing director of ILA with the Chinese government delegation led by Lin, Yeo

in France.

The China LAB manufacturing and ULAB recycling project is now in its final phase, but already some of the ILA members of the Advanced Lead Acid Battery Consortium (ALABC) in China have benefitted from the transfer of environmentally sound methods of work.

The introduction of cleaner technologies and a clear political mandate had led to a dramatic transformation in environmental performance and reduction in the risk of occupational exposure in Chinese operations.

ILA has also worked alongside the United Nations Environmental Program (UNEP), whose objective has been to encourage governments to introduce measures to deal with lead emissions from lead battery recycling facilities in the developing world.

Over a series of meetings this year ILA represented the views of the lead industry and was instrumental in the decision to make a change from the original strategy which called for the substitution and elimination of lead-acid batteries to tackle the issues discussed.

Brian Wilson took part in UN-sponsored meetings and workshops in the Dominican Republic and Jakarta to explain the lead risk management mitigation measures introduced in several countries in the developing world and demonstrate how ULAB recycling has become a sustainable non-polluting industry.

As a result, during its recent Environment Assembly (UNEA2) in Nairobi, the United Nations Environmental Programme passed a resolution, put forward by Burkina Faso, to encourage regions that have not yet done so to adopt control measures to reduce the health impacts resulting from poor management of used lead batteries.

The Nairobi resolution called on countries to adopt laws and regulations to encourage extended producer responsibility to collect waste lead-acid batteries, so as to ensure that those batteries are recycled in an environmentally sound manner, and to address emissions and exposures through appropriate standards.

There are encouraging signs to show that sound principles of responsible care for the recycling of lead batteries are making significant progress in the developing world and ILA intends to continue its LA21 programme of support by working alongside the local industry, regional bodies, governments and NGOs. ■

DEMONSTRATING THE ILA BENCHMARK TOOL IN INDIA

When ILA visited Karnataka and Tamil Nadu, in India, in 2014 it demonstrated the use and application of the Benchmarking Assessment Tool (BAT) to environmental technicians and engineers from the states' Pollution Control Boards. The events were held with representatives from the India Lead Zinc Development Association and the not-for-profit Pure Earth.

At the Chennai workshop a visit was made to the Pondy Oxides and Chemicals ULAB Recycling plant in the Kancheepuram District of Tamil Nadu to undertake a BAT exercise. Meanwhile delegates at the Bangalore workshop saw a video of operations at a ULAB recycling plant and made observations on procedures shown in the video as the ULABs are collected, stored, packaged, transported and recycled.

On the second day of the workshops the delegates presented their observations from the inspections and outlined their recommendations for improvements to bring the operation in line with the good practices highlighted on the BAT form.

VOLUNTARY TARGETS ADD FURTHER PROTECTION FOR INDUSTRY WORKERS

The protection of the workforce is an important part of any industry sustainability programme and lead producers and miners across the globe have taken action in recent years by introducing voluntary targets to reduce exposure to lead that go beyond current international regulations.

ILA member companies are committed to continuous improvement in reducing employee lead exposures and are currently working towards reducing blood lead levels for all employees to below 30 microgrammes per decilitre (µg/dl) by the end of this year — covering more than 7,000 workers in the lead industry in Europe, North America and Australia.

The programme, which also involved several best practice sharing workshops, is a major step forward in worker protection across the lead industry worldwide.

"ILA member companies have made good progress in reducing employee lead exposure and the majority are well on target to achieving the goal of having no employees with a blood lead exceeding 30 µg/dl by the end of 2016," says ILA regulatory affairs director Steve Binks.

"Companies recognize the need to continue to focus on employee health and there are plans to establish more ambitious blood lead reduction targets in the future."

The ILA programme aligns lead producers with a similar commitment made by the battery industry through EUROBAT (Association of European Automotive and Industrial Battery Manufacturers) and BCI in the USA (Battery Council International) and goes beyond the requirements of the European Union binding biological limit value for lead in blood of 70µg/dl and the US OSHA removal limit of 50µg/dl.