

## CASE STUDY



# Reducing risks and removing obstacles to lead recycling in the Philippines

## The Issue

South East Asian countries historically met increasing demands for lead by importing used lead acid batteries to supplement the shortfall in recycled lead available from domestic sources.

In the Philippines during the late 1990's the shortfall was approaching 40%. When the Government of the Philippines responded to the requirements of the Basel Convention by insisting that all imported used batteries can only be recycled at plants that have proven environmental and occupational health accreditation, the availability of raw materials for secondary lead production became increasingly scarce. This was because none of the recycling plants in the Philippines at that time were deemed to be operating to international standards for the environmentally sound management of used lead acid batteries.

## Interested parties

The Government of the Philippines were very keen to secure the future of the used battery recycling industry because secondary lead was vital to supply the many domestic automotive battery manufacturing plants. This in turn supported a very healthy car assembly industry in and around the capital, Manila. Any demise of the recycling plants would threaten the employment of many thousands of Filipinos.

The Government of the Philippines invited the United Nations Conference on Trade and Development (UNCTAD) to devise a suitable project that would not only facilitate environmental improvements in the used battery recycling industry, but also provide a sound financial basis for a sustainable automotive battery manufacturing industry. The ILMC was invited to join the project to provide environmental expertise to the Recycling Industry in its quest for excellence.

Philippine Recyclers Inc. (PRI) was, and still is, the largest used battery recycling plant in the Philippines and the management of the company believed that full compliance with the National Environmental Legislation and ISO 14001 Certification for their Environmental Management System would secure the necessary import licenses to guarantee supplies of used lead acid batteries and eliminate the

deficiency in domestic supplies. Accordingly, PRI was also invited to join the project together with the Philippine Government's Environmental Management Bureau (EMB).

## The Approach

Initial Assessments of the project requirements by UNCTAD and the ILMC began in 1997 with meetings at the Government Environment Ministry and visits to the PRI recycling plant, a number of "informal" unlicensed recyclers and domestic used automotive battery collectors, including retailers, garages and repair workshops.

It was clear from the beginning of the project that PRI would have to make a considerable number of changes to the plant operation and upgrade the environmental control systems, especially the effluent treatment plant and the furnace ventilation system. Accordingly, a comprehensive three year program of environmental improvements was agreed with PRI in conjunction with the EMB Office in Manila.

In order to ensure an independent assessment of the planned environmental improvement to the PRI Recycling Plant, the company also applied for ISO 14001 Certification for their proposed new Environmental Management System. During this period ILMC would work with the Company to identify the most appropriate environmental improvements and provide guidance towards ISO Certification.



Used lead acid batteries were imported to supplement the shortfall in recycled lead

## CASE STUDY continued...

### Challenges

Environmental accreditation was particularly challenging because environmental legislation in the Philippines prohibits the disposal of hazardous industrial waste, such as furnace residues, and all toxic waste dumps are now closed. With guidance from ILMC, and support from the University of Manila, PRI was able to develop a treatment process that renders toxic waste inert, enabling the company to produce non-hazardous building materials. In addition, changes to the recycling process suggested by the ILMC also reduced the amount of solid waste produced by 19%, thereby reducing the energy consumption required to render the waste inert.

The annual typhoon season in the Philippines also posed serious problems because the existing effluent treatment plant (ETP) would be flooded leading to serious contamination of the surrounding countryside and local waterways. The solution was to design and construct a new ETP above the flood levels, that is, about 9 metres above the roadways.

The PRI recycling plant was built in 1986 and since then the processes had been modified and new equipment commissioned, but the written procedures and safety manuals had not been updated. A complete overhaul of all operational and safety documentation was essential for ISO Certification.

### Results

In February 2000 PRI were awarded ISO 14001 for their Environmental Management System that demonstrated full compliance with the environmental, safety and occupational health legislation of the Philippines as verified by the Government's EMB. PRI were the first lead acid battery recycling plant in Asia to attain ISO 14001 Certification.

Tangible benefits to the plant modifications and the changes to the recycling process were:

- 17% reduction in furnace fuel consumption
- 21% reduction in electrical power consumption
- 20% reduction in environmental control costs

In addition, the reduction in energy usage contributes to the company's efforts to reduce its carbon footprint.

Particularly successful was the company's drive to improve domestic collection of used lead acid batteries. In partnership with the communications giant, ABS-CBN, a program to promote the 'Return of Your Used Batteries' – "Bantay Kalikasan" was introduced in 2001 with the objective of recovering 36,000 tons of used lead acid batteries that had traditionally found their way into the environmentally unfriendly "informal sector". (<http://www.bantaybaterya.com/index.php>)

### Status

The improvements made by PRI marked the completion of the first phase of the Philippines Project, but under the Memorandum of Understanding between the ILMC, UNCTAD and the Government of the Philippines, efforts are continuing to resolve issues associated with the activities of unlicensed battery recyclers in the "informal sector".

The technical and socioeconomic factors that support the activities of the "informal sector" have been analysed in a series of papers prepared to guide the deliberations of an expert multi-stakeholder panel tasked to consider the most appropriate course of action to either "formalise" the "informals" and bring their operations into a legal framework or eliminate them.

The achievements of PRI attaining ISO 14001 Certification have prompted other Lead Smelters in Asia to move towards Environmental Certification and the success of the domestic collection scheme has provided a unique model for their partners in the Association of South East Asian Nations (ASEAN).



Lead smelters in Asia are embracing Environmental Certification