

## ILMC Hosts UNEP EnTA Workshop



*EnTA delegates at the Philippine Recyclers Secondary Lead Plant in Bulacan during the field trip*

Towards the end of last year Fritz Balkau, the Head of the Production and Consumption Unit of the United Nations Environment Program (UNEP), Division of Technology, Industry and Economics in Paris, invited the ILMC to manage UNEP's first Environmental Technology Assessment (EnTA) Workshop.

The purpose of this interactive EnTA workshop was to instruct delegates in the use of the new UNEP Environmental Technology Assessment (EnTA) Workbook. The EnTA methodology can be employed to assess the environmental (including social and economic) impacts of industrial process technologies, particularly in the scoping and planning stages of a project. The methodology is particularly suited to developing countries and those in transition as it can assist with the selection of an "appropriate" technology to suit the environmental circumstances and priorities of a particular country or region.

ILMC were invited to manage the workshop so that the United Nations Conference on Trade and Development (UNCTAD) and ILMC's review of automotive battery recycling and smelting in the Republic of the Philippines could be used as the case study for the workshop. This would help demonstrate the suitability of the EnTA methodology and test the feasibility of the procedure in a practical application. The involvement of UNCTAD would also ensure that the workshop considered the macro and micro economic factors required to establish the parameters for a viable and sustainable industrial sector.



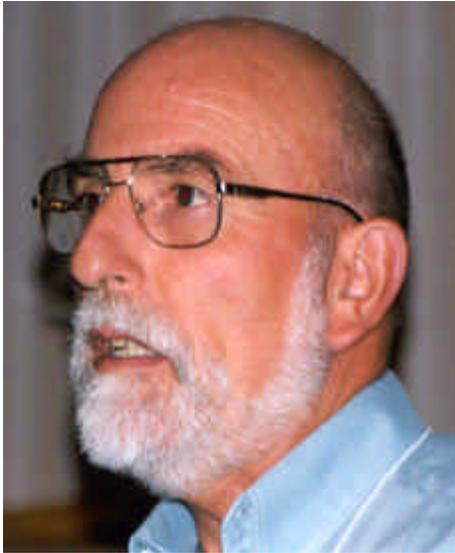
*Lilia Casanova, Deputy Director of the UNEP International Environmental Technology Centers in Osaka and Shiga in Japan opens the EnTA Workshop.*

The workshop was designed primarily for Industrialists, Government Environmental and Trade Officials and Representatives from Environmental Non Government Organizations from the ASEAN (Association of South East Asian Nations) region. Preference was given to those who may be required to assess the environmental impact of a range of technologies, or make discerning choices between various competing processes. In total,

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45 participants from sixteen different countries including 36 conference delegates attended the four day Workshop which was held in Manila in February.

The EnTA Workshop was funded by ILMC and the Cologne based German Foundation, Carl Duisberg Gesellschaft e.v. (CDG). CDG is a non-profit organization supported by approximately 800 industrial organizations, the German State, and the European Union, and it is dedicated to international advanced training and human resource development. Together with partner organizations in Germany and abroad, it forms an international network offering practice-oriented training, exchange and foreign language programs.



*Professor John Hay, co-author of the UNEP EnTA process, explains the methodology to the delegates.*

Additional support and sponsorship for the Workshop was provided by the Geneva Office of UNCTAD, the Spanish Engineering Company, Técnicas Reunidas (TR), and Philippine Recyclers Inc., the largest secondary lead recycler in the Philippines.

Lilia Casanova, the Deputy Director of the UNEP International Environmental Technology Centers (IETC) in Osaka and Shiga in Japan, opened the Workshop on behalf of the Executive Director of UNEP, Mr. Klaus Töpfer, and welcomed the delegates to Manila. Lilia stated that whilst the importance of applying the right technologies in any national development process is clear to everyone, sometimes those promoting the "cleaner" technologies overlook the environmental, social and health impacts. Thus the notion of "Environmental Technology Assessment", or EnTA for short, was born.

Lilia stressed the need to be clear that EnTA is the environmental assessment of production technologies. It is not the assessment of environmental technologies, although environmental technologies could also be subject to an EnTA evaluation. Indeed, Lilia made clear to the delegates that EnTA could be applied by commercial enterprises to determine what to manufacture or import, by governments to decide which processes to license and by regulators to evaluate permit applications for industrial processes.



*Carlos Frias, Project Manager, R&D Centre, Técnicas Reunidas (TR), Spain, taking a question about the TR hydrometallurgical process for recycling automotive batteries.*

UNEP, Lilia explained, had been promoting the cleaner production approach in the ASEAN region for over 10 years, but realized the need for a universal assessment process that could recognize a clean and viable technology at an early stage in the decision making process. Indeed, she concluded by emphasizing that the EnTA approach should guide the decision makers towards the sustainable development path ahead.

Lilia extended a special welcome to those delegates from the lead industry who are concerned and committed to improving the performance of the secondary smelters. She said that UNEP was confident that the practical material and knowledge to be derived from the workshop would be of immense use to the Industry.

Following the welcome to the workshop, the delegates were invited to outline their respective country's policies towards environmental assessment and the recycling or disposal of used automotive batteries.



*Nareth Heng, Director, Department of Pollution Control, Phnom Penh, Cambodia, outlines his Country's policies towards environmental assessment and the disposal of used automotive batteries*

During the introduction to the assessment methodology, John Hay (UNEP Environmental Consultant based in New Zealand) explained to the delegates that, whilst the EnTA process was essentially subjective, the judgements could be enhanced by comparisons with existing or similar operations, performance standards and expert opinion.



*Sisouphanh Luangrath and Somphong Soulyvanh from Laos share an amusing moment with Hui Kok Choy from Singapore*

The EnTA workshop had been designed to allow the delegates to work through a practical assessment as part of the learning experience. The delegates were divided into three syndicate groups. One group assessed the environmental impact of collecting, shipping and storing used automotive batteries prior to recycling. Of the other two groups, one was asked to consider the environmental impact of a new hydro-metallurgical recycling technology and the other an upgraded, but more traditional, pyro-metallurgical technology. To this end ILMC had arranged for the workshop delegates to use the UNCTAD/ILMC case study in the Philippines that is concerned with the recycling of used lead acid batteries. This provided realism to the training program.



*Delegates inspect the PRI waste water treatment plant*

In keeping with the mandate of the Technology Industry and Economics Division of UNEP, Ulrich Hoffmann, an Economic Affairs Officer with the UNCTAD secretariat, explained that any clean technology, irrespective of its environmental benefits, must have a sound economic basis to be sustainable. He went on to describe the macro and micro economics that dominate the trade in used lead acid batteries in the ASEAN region and the Philippine archipelago, leaving the delegates in no doubt about the inherent difficulties of trying to manage a local enterprise in a global market.



*Edmundo Esguerra, PRI Environmental Engineer, guides the delegates through the separation process of the rubber case material from the battery plate separators.*

ILMC Program Manager Brian Wilson emphasized to the delegates the need to think beyond the immediate assessment process and consider the product or waste from the conceptual or design stage. This is important because the most environmentally sound processes are the ones that are designed around products and wastes that are either completely recyclable or inert. In this respect the lead acid battery, whilst potentially hazardous to the environment, can be designed to be 99% recyclable with just the 1% of silica separator filler material as the only waste, albeit non-toxic and inert .



*Rosa Diokno and Edna Hirano (in white) demonstrate the PRI ingot casting process to the delegates.*

In order for the delegates to understand the principles of recycling used automotive batteries, Carlos Frias, Project Manager with Técnicas Reunidas (TR), and Edmundo Esguerra, Environmental Engineer with Philippine Recyclers (PRI) outlined the basic principles of hydro-metallurgical and pyro-metallurgical recycling. They also gave the delegates an insight into some of the new and emerging technologies that not only recycled the battery components and produced inert or saleable by products, but also reduced energy consumption and greenhouse gas emissions.

As a final preparation for the syndicate exercises the delegates visited the PRI battery recycling plant located about 10 kilometers (6 miles) outside Manila in Bulacan. Once the delegates were suitably equipped with their personal protective equipment the PRI management team provided them with a tour of the recycling facility. Delegates were invited to inspect any part of the plant and inquire about any aspect of the Bulacan operation.

# PRI Presented with the ILMC Leadership Award

This field trip provided a valuable insight into the secondary lead business and formed the basis for the comparisons and judgments required in the EnTA syndicate exercises.



*Brian Wilson, ILMC Program Manager (right) presents Irving Guerrero, PRI Vice-President and General Manager with the ILMC Leadership Award.*

During the field trip Brian Wilson not only thanked the PRI management for their hospitality, but congratulated the Staff on the Company's recent ISO 14001 accreditation for its Environmental Management System (EMS). Brian informed the EnTA delegates that, whilst secondary lead companies have to conform to strict environmental standards, only two other smelters had achieved ISO certification. Furthermore, PRI have an active community outreach program providing medical services to the local population and sponsored environmental initiatives in the Philippines. Indeed, the weekend prior to the workshop the PRI staff had planted trees in the name of each EnTA delegate. For these reasons, and the fact that PRI were prepared to share their knowledge and expertise with others to promote environmental excellence in the Industry, Brian Wilson was pleased to present the Company with the ILMC Leadership Award.

On that high note the delegates returned to the workshop venue in Manila and an afternoon was spent in serious debate and consensus building in an effort to complete the syndicate tasks and work through the EnTA process. The diversity of the skills, experiences and disciplines of the delegates enhanced the discussions that are essential to the assessment process and considerably improved the outcomes from each of the working groups. Whilst a workshop is no substitute for the realities of life, each of the syndicate groups was able to make informed judgments about the technologies under review and all completed the assessment process.



*Irving Guerrero with the PRI Management Team and Supervisory Staff at the Bulacan Site*

Summing up the achievements of the workshop, John Hay commented that the four days had been a valuable learning experience for the trainers and those providing additional resources as much as it had been for the delegates. The EnTA Workbook used in the workshop is new and was being tested for the first time. He said that the workshop had been successful in providing insights into how best to use the Workbook in support of the EnTA process and in exposing any shortcomings. It also provided experience that showed how best to use the Workbook in a training environment and how to conduct future workshops to maximize their efficiency and value for the participants.

John Hay stressed that whilst EnTA is a relatively new tool, it is one of growing importance in the International community. It has yet to be recognized by ISO and become part of the environmental management vocabulary, as have the terms Environmental Impact Assessment (EIA), waste minimization and cleaner production. John said he was personally convinced that following the success of this workshop, and another convened in South Africa, it will not be long before EnTA is a very common and widely applied tool, maybe even more so than EIA and life cycle analysis (LCA) because EnTA is a much more convenient tool to use.

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