

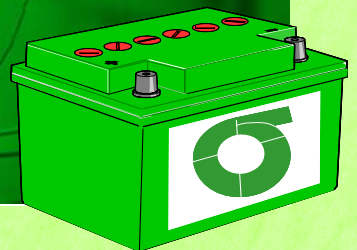
# Green Lead

*- Life Cycle Sustainability*

*- Now and Forever*

## Our World

## Your Future



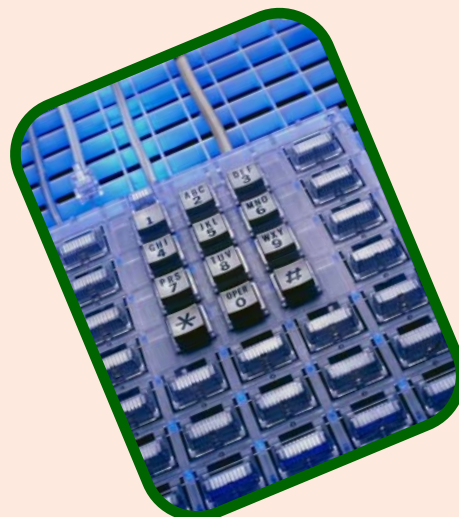
# Green Lead™

## ~ A Vision for Sustainability

*Green Lead™ embraces the fundamental human desire to live in a clean environment and the need to manage the technologies of today in a manner that leaves a legacy that shows respect for this world, its populations, and our unique habitats and wildlife.*

*Lead acid batteries play a critical role in many of today's key services, particularly motor vehicles, and backup power supplies for telecommunications and hospitals. Furthermore lead acid batteries are at the forefront of sustainable energy storage systems.*

*It is paramount therefore that the Global Lead Industry demonstrates that Lead Products can be managed in an environmentally sound manner, handled safely, and without risk to workers and the public.*



*The Green Lead™ Initiative is a proactive product stewardship program based on the sound management of materials and products in the Lead Life Cycle. Its contribution to sustainability will be achieved by:*

- ~ Identifying the environmental, health and social impacts associated with Lead and Lead Products.*
- ~ The introduction and maintenance of product and operational Protocols that promote positive impacts and continuous improvement.*
- ~ The Certification and Monitoring of Products and organizations that comply with the Green Lead Protocols.*

# ICMM

International Council  
on Mining & Metals

# ILMC

International Lead Management Center



*Green Lead™ recognizes that the vision of sound Product Chain Management requires the active and open cooperation between the different stakeholders, companies, and industry Leaders throughout the product's life cycle.*

*Green Lead™ builds on the principles set out in the sustainable development charter of the International Council on Mining and Metals (ICMM) and the lead risk reduction programs of the International Lead Management Center (ILMC).*

# Green Lead™

## Product Stewardship

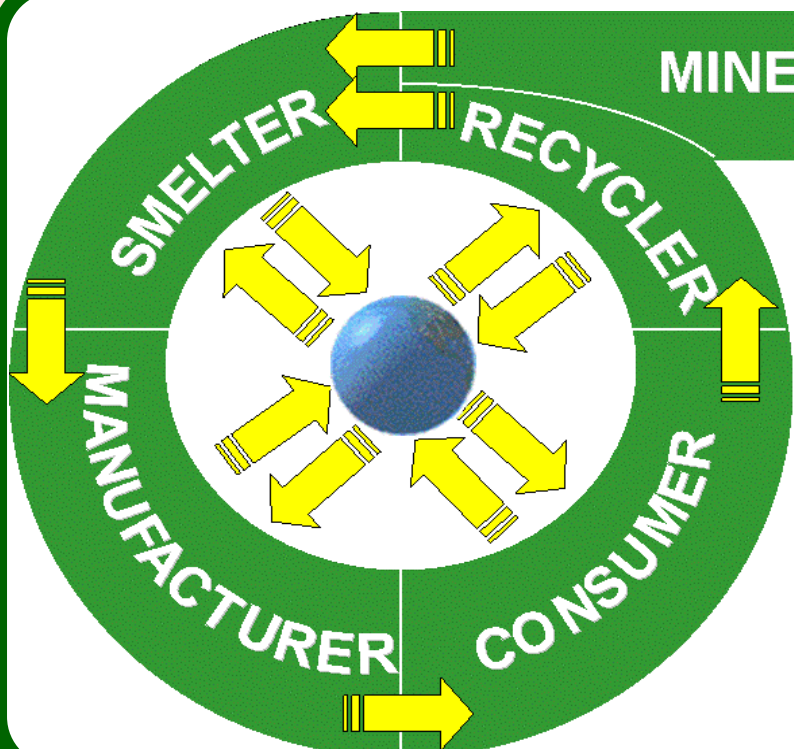
*Green Lead manages the impacts of lead and lead products, starting with lead acid batteries, throughout the entire life cycle from the lead mine through smelting, manufacturing, use and recycling. In the commodity world it is a leader on the control of the entire product chain to attain sound environmental management and sustainable social development.*

### Green Lead Sigma

*The Greek letter Sigma precisely reflects the Lead Acid Batteries (LAB) Life Cycle, with the initial input from miners and primary lead smelters.*

*Once primary Lead enters the Sigma Life Cycle Loop, it stays there.*

*Green Lead agents and recyclers will maintain sound environmental processes, safe working and healthy environments to keep recycling Lead within the loop.*



## The Green Lead Process

*Three core principles are fundamental to Green Lead Product Stewardship:*

- 1. The process must be open, honest and transparent. All relevant information, data and audit reports must be available in the public domain for inspection.*
- 2. Independent third party verification must be used to guarantee the credibility of Green Lead Certification.*
- 3. Collaboration and cooperation between the Lead Industry, Governments, NGOs and Community Groups throughout the product chain is critical to ensure that all Green Lead projects are multi-stakeholder joint ventures.*

# Product Chain Management

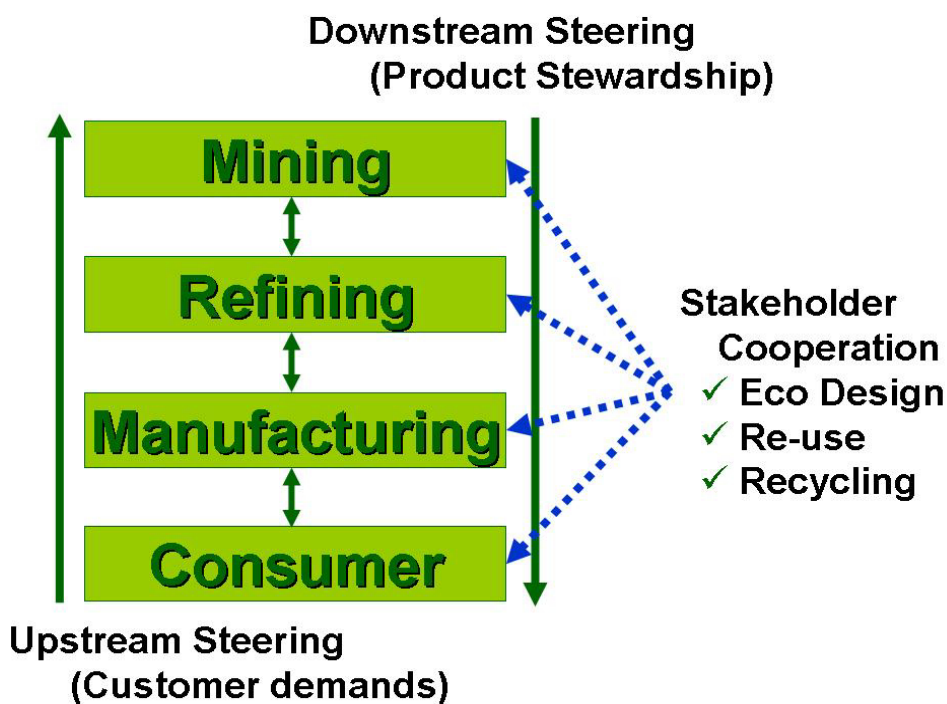
*Traditional environmental management systems focus on individual companies or specific sites to mitigate or control environmental impacts.*

*Green Lead, however, extends product responsibility to all those involved in the life cycle, including suppliers, manufacturers, distributors, retailers, consumers, and recyclers.*

*Within the product chain, individual players will determine supplier and contractor obligations within the Green Lead framework. This may result in possible restrictions on those in the product chain who do not comply with the Protocols for environmental and safety performance, and the reach the required level of social interaction.*

*At the meeting of Ministers from those countries in the Asia-Pacific Economic Cooperation Group (APEC) in February 2007, it was noted that;*

*“Life cycle partnerships involves participants working together.....”*



*Traditional Eco-Steering models are driven by either Commodity or Product Suppliers, or from the opposite direction by customer demands or consumer groups.*

*Green Lead, however, requires cooperation between Suppliers and Customers to achieve Environmentally Sound Management.*

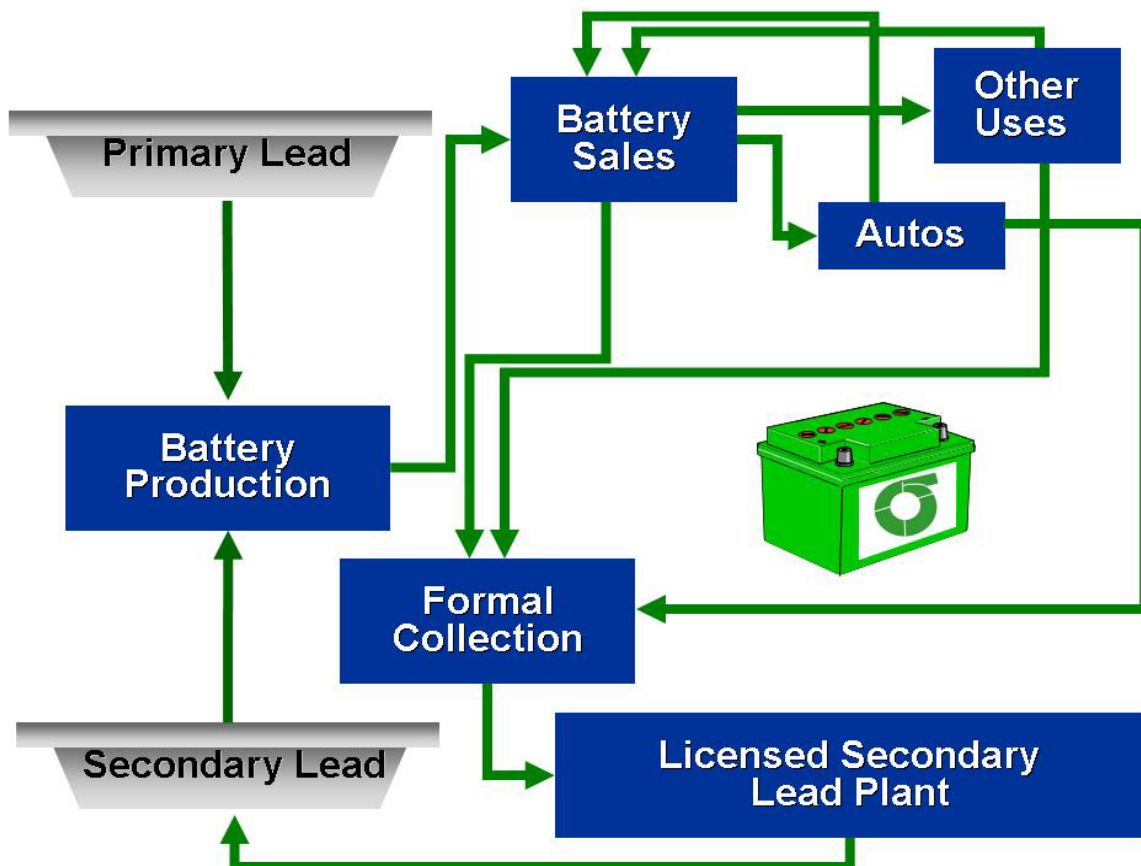
*In this respect Green Lead's interactive requirements promote cooperation and allow for the identification and reduction of environmental impacts not possible with traditional environmental management by individual companies or sectors.*

*Each player is accountable to other members of the product chain for their environmental performance, and is obligated to benchmark and demonstrate best environmental practice and social performance.*

# Chain of Custody

Under an ideal Green Lead regime, battery manufacturers would only purchase lead ingots from authorised primary or secondary Green Lead suppliers.

In turn, new lead acid batteries will only be distributed through Green Lead retailers that have set up approved collection systems that provide for used batteries to be returned through an authorised Green Lead Collection Centre or retailer and then dispatched to an authorised Green Lead Recycling Plant, thereby maintaining environmentally sound management within a traceable "closed loop", which will be part of the certification process.



## The Ideal Green Lead Battery Life Cycle

# Green Lead Protocols

*At the core of Green Lead are ten Protocols that define Green Lead Product Stewardship throughout the Life Cycle of the Lead Acid Battery in terms of roles, responsibilities, behaviours and operational procedures.*

*They are:*

- 1. Medical surveillance – Blood Leads**
- 2. Solid Waste Management**
- 3. Effluent treatment and discharges**
- 4. Emission Control Systems**
- 5. Safety**
- 6. Used Lead Acid Battery collection, transport and shipping**
- 7. Public communications and awareness**
- 8. Battery Labels**
- 9. Site Sustainability**
- 10. Community Outreach**

## Green Lead Assessment

*The Green Lead Assessment Process is designed to determine the level of compliance with the Green Lead Protocols and can be used internally by organizations for “self assessment” or externally by third parties where an Independent assessment is required.*

*If you want to find out if your organization complies with the Green Lead Protocols, download the Assessment Form from the Green Lead Web site.*

[www.greenlead.com](http://www.greenlead.com)

## Green Lead Audit

*A site Assessment is the first vital step on the road to the adoption of Green Lead Product Stewardship.*

*However, in order to provide a clear confirmation of sound Product Stewardship throughout the Lead Acid Battery Product Chain there has to be an Independent and Verifiable Audit Procedure to certify that there is a seamless link in the Product Chain throughout the life cycle.*

[www.greenlead.com](http://www.greenlead.com)

# Green Lead Certification

At the World Summit on Sustainable Development (WSSD) in Johannesburg in 2002, the WSSD Plan of Implementation stated that:

*"Production and consumption policies should be developed to improve the products and services provided, while reducing environmental and health impacts, using, where appropriate, science-based approaches, such as life-cycle analysis."*

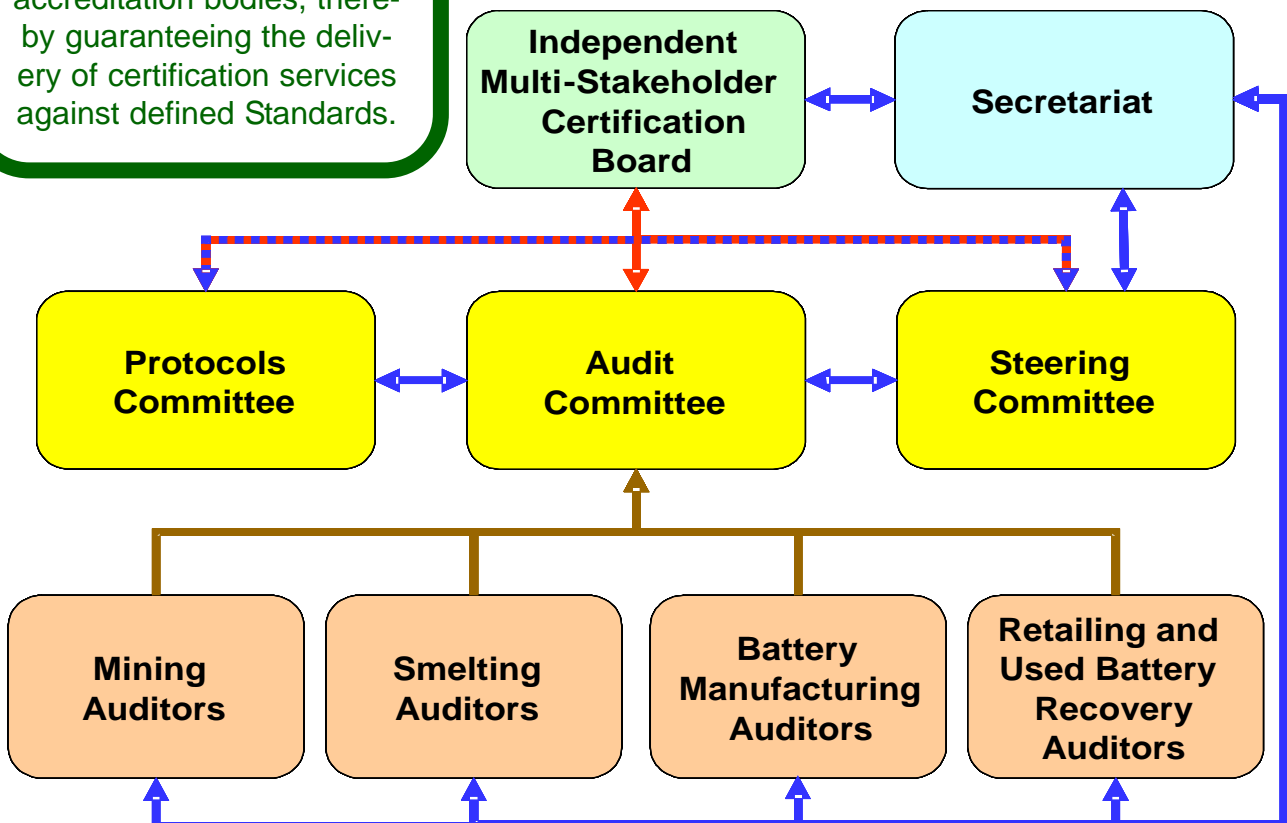
Green Lead Certification is designed to be an independent guarantee of Sound Environmental Management and Product Stewardship through the life-cycle of the product.

## Independent

In order to deliver independent, third-party certification for the Product Stewardship of Lead Acid Batteries throughout Life Cycle, a multi-stakeholder Certification Board will be established. It will seek accreditation by international and national accreditation bodies, thereby guaranteeing the delivery of certification services against defined Standards.

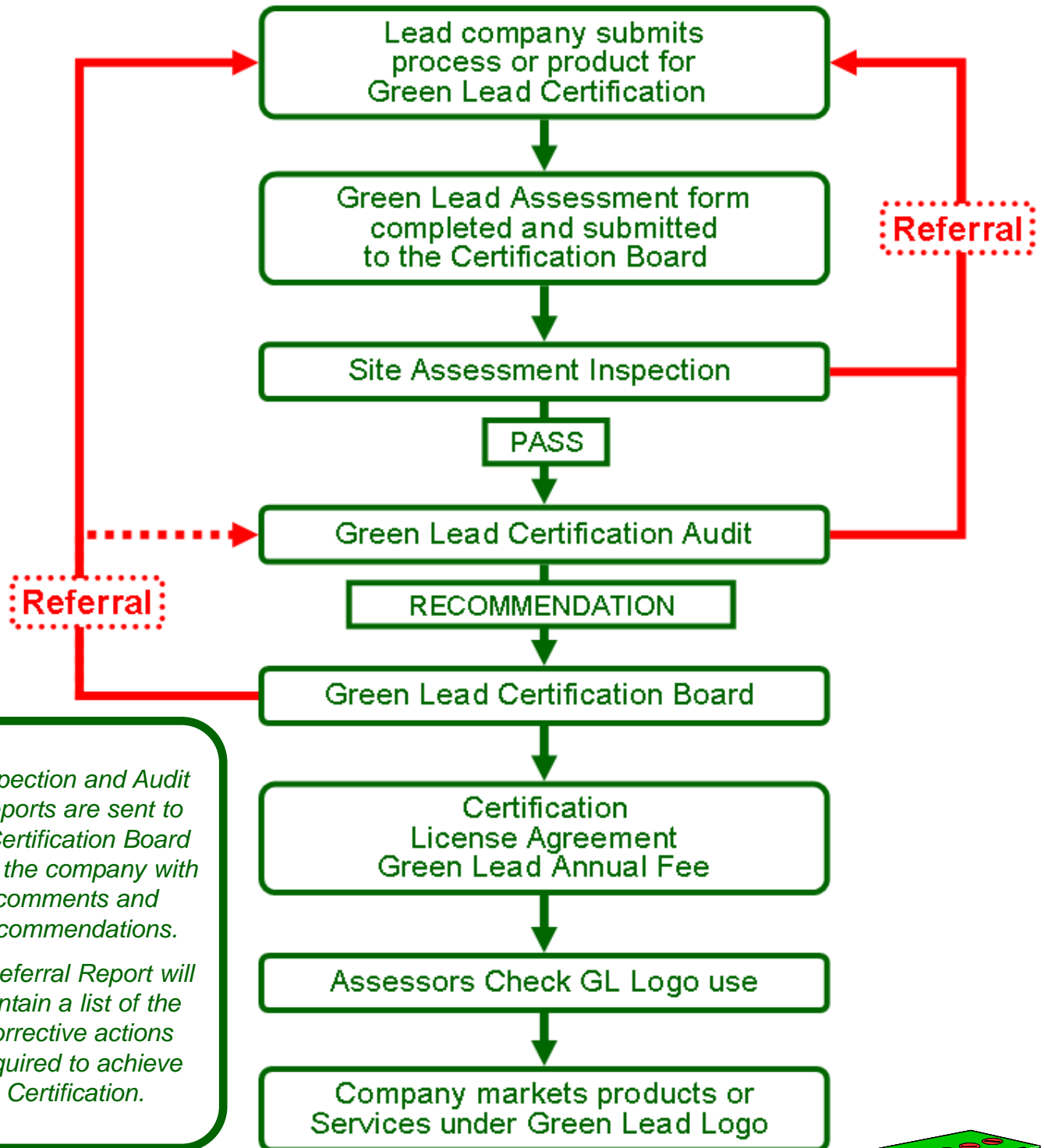
## Administration

Green Lead administrative procedures are open and transparent. When established, the Multi-Stakeholder Certification Board will appoint Committee Members and Auditors. It will also provide for a periodic review of the status of Licensees and appeals resulting from either Site Assessments or Certification Audits.



# Certification Flow Chart\*

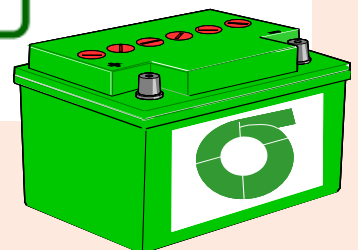
## Certification Flow Chart



*Inspection and Audit Reports are sent to a Certification Board and the company with comments and recommendations.*

*A Referral Report will contain a list of the corrective actions required to achieve Certification.*

\* *Currently a Pilot Program*



# Green Lead Project Activities

*Green Lead Pilot Scheme Site Assessments for the Product Stewardship of Lead Acid Batteries at various stages in the Life Cycle have been undertaken in:*

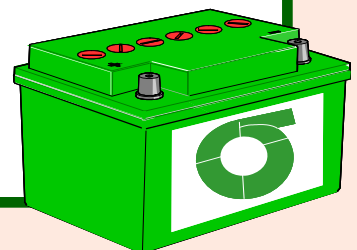
<i>Australia:</i>	<i>Mining, Smelting; road, rail and shipping transport; ULAB recycling</i>
<i>Caribbean Island States:</i>	<i>Used lead acid battery (ULAB) Storage and Shipping</i>
<i>Central America:</i>	<i>Battery Manufacturing, ULAB Storage, Transport and Recycling</i>
<i>China:</i>	<i>Smelting and Battery Manufacturing</i>
<i>South America:</i>	<i>ULAB Recycling</i>

# Green Lead Work Group

The voluntary multi-stakeholder Green Lead Work Group is responsible for the implementation of the Green Lead Product Stewardship Project. The members are:

Craig Boreiko	- International Lead Zinc Research Association (ILZRO)
Ian Burrell	- International Lead Zinc Study Group (ILZSG)
Mark Daniell	- BHP Billiton, Cannington
Paul Deveau	- Xstrata
Mick Roche	- BHP Billiton
Andrew Rouse	- WWF Australia
Nelson Sabogal	- Secretariat to the Basel Convention (SBC)
Don Smale	- International Lead Zinc Study Group (ILZSG)
Phillip Toyne	- Eco Futures
Emma Tristan	- Futuris Consulting
Brian Wilson	- International Lead Management Center (ILMC)
David Wilson	- Lead Development Association International (LDAI)

To contact the Work Group click on the Green Battery.....



# Contributors to the Green Lead Project:



BHP Billiton



Australian Railroad Group



International Council on Mining and Metals



Basel Convention Secretariat



International Lead Zinc Study Group



Yangzhou Apollo Battery Company Limited



International Lead Management Center



China International Mining Group



WWF Australia



EcoFutures