

# The Management of Mercury Lamps

A presentation of the strategic approach  
and treatment technologies

**Eduardo Sebben**

CEO



# THE MANAGEMENT OF MERCURY LAMPS



## Environmental and Economic Aspects

- Power saving
- Cost x Efficiency
- Technology Substitution / incandescent lamps
  - Project Reluz (Brazil)
  - Programs for Energetic Efficiency
  - Prohibition of the production



# THE MANAGEMENT OF MERCURY LAMPS



## Environmental and Economic Aspects

- Consumption in Brazil (over 290 million in 2012)
- The presence of mercury (functional aspect)
- Logistics with capillary
- Source of environmental pollution and occupational risks





**APLIQUIM  
BRASIL RECICLE**

Descontaminação de Lâmpadas com Recuperação do Mercúrio



# LEGISLATION IN BRAZIL



The Brazilian legislation on fluorescent lamps are primarily related to two aspects:

1 - The storage, transportation and disposal: Mercury lamps are consider hazardous waste – Class I (NBR 10.004/04). It is assigned the responsibility for proper disposal to the generators.

- Why do we have customers?



2 - The responsibility of manufacturers and importers, and other participants in the distribution chain: through the National Policy on Solid Waste (Act Nº. 12.305/2010 - Decree Nº. 7.404/2010), it was established the responsibility of the collection, transportation and disposal of fluorescent lamps to all participants of the chain.

- Some principles similar to WEEE Directive
- Reverse logistics



# THE SOLID WASTE POLICY IN BRAZIL



**APLIQUIM  
BRASIL RECICLE**  
Descontaminação de Lâmpadas com Recuperação do Mercúrio

- **Developments in environmental aspects / control / legislation**
- **Approved the National Policy on Solid Waste (2010)**
- **Creates the expectation of society, and interest in environmental projects by government and companies (all segments)**



# THE NPSW AND IMPLEMENTATION OF REVERSE LOGISTICS IN BRAZIL



- Created the Technical Working Group
- Established shared responsibility
- Presentation of a model (ABILUX - manufacturers)
- Next step: the presentation of new models and the sectoral agreement (between the manufacturers and importers)
  - Features and problems in Brazil



# SITUATION IN BRAZIL



**APLIQUIM  
BRASIL RECICLA**  
Descontaminação de Lâmpadas com Recuperação do Mercúrio



# SITUATION IN BRAZIL



**APLIQUIM  
BRASIL RECICLE**  
Descontaminação de Lâmpadas com Recuperação do Mercúrio



# SITUATION IN BRAZIL



**APLIQUIM  
BRASIL RECICLE**  
Descontaminação de Lâmpadas com Recuperação do Mercúrio



# SITUATION IN BRAZIL



## Legal, Environmental and Technological Aspects

- Just 4-5% (aprox. 12-14 million) are collected
- It's allowed the crushing of lamps, and the waste disposal on landfill (with no recycling and mercury control)
- No specific legislation (emissions of mercury, landfill, quality parameters for recycling, etc..)



# SITUATION IN BRAZIL



## Legal, Environmental and Technological Aspects

- There is no national reference to licensing the decontamination companies
- The bureaucratic aspects
- There is no obligation to the point of sale to receive the lamps
- No concentration points (periodic storage)
- There are large stocks (cost)





# **APLIQUIM BRASIL RECICLE**

Descontaminação de Lâmpadas com Recuperação do Mercúrio

## **System Operation**

- **Customer sale (technical explanation and the pursuit of consciousness)**
- **Collection Schedule**
- **Collection and transport**
- **Treatment, decontamination and recovery of mercury**





# APLIQUIM BRASIL RECICLE

Descontaminação de Lâmpadas com Recuperação do Mercúrio

## Guidance for Handling and Storage





# APLIQUIM BRASIL RECICLE

Descontaminação de Lâmpadas com Recuperação do Mercúrio

## Collection and Transport





**APLIQUIM  
BRASIL RECICLE**  
Descontaminação de Lâmpadas com Recuperação do Mercúrio



PÓ DE FÓSFORO CONTAMINADO  
COM MERCÚRIO



VIDRO RECICLÁVEL



SOQUETES RECICLÁVEIS



DESMERCURIZAÇÃO TÉRMICA  
E DESTILAÇÃO



PÓ DE FÓSFORO  
DESCONTAMINADO



MERCÚRIO PURO



INDÚSTRIA DE  
BENEFICIAMENTO

LÂMPADAS TRANSFORMADAS EM...



VIDRO



MERCÚRIO ENGARRAFADO



AÇO INOX



ALUMÍNIO



LATÃO



REVESTIMENTOS CERÂMICOS

\* Figura ilustrativa do processo.



# Occupational and Environmental Controls



**Atmospheric Emissions**



**By-products**



**Water and Soil**



**Occupational Exposure**

## Business Plan

- **Installation of two storage points (Rio Grande do Sul-South and Rio de Janeiro-Southeast)**
- **Development of new technologies**
- **Exploration of other markets (WEEE)**
- **Development of the recycling in Latin America and Caribbean**





**APLIQUIM  
BRASIL RECICLE**

Descontaminação de Lâmpadas com Recuperação do Mercúrio

[www.apliquimbrasilrecicle.com.br](http://www.apliquimbrasilrecicle.com.br)

**THANK YOU!**

**Eduardo Sebben**

Biologist / Post Graduate Environmental Quality / M.Sc. Eng. of  
Environment

CEO

[eduardo@apliquimbrasilrecicle.com.br](mailto:eduardo@apliquimbrasilrecicle.com.br)



**APLIQUIM  
BRASIL RECICLE**

Descontaminação de Lâmpadas com Recuperação do Mercúrio

## Institutional Video

