MARKET TRENDS: CURRENT AND FUTURE CHALLENGES FOR BATTERY COLLECTION

Laurens ten Horn

Chairman Policy Working Group
Antwerp, 15 September 2016
INTRODUCTION

Start
Association active since 2012

Conditions
Not for profit, industry-driven, national

Activities
Compliance, organizations, portable, industrial, automotive

Members
17 members, 15 countries

Customers
13,500 national producers/importers

Collection Points
385,000 collection points

Collected Weight P-I-A
65,000 tonnes collected in 2015

System Awareness
European Battery Recycling Day

Collection Rate EU
41.9% of portable batteries POM

Collection Efficiency
Target to be based upon batteries available for collection
BATTERIES DIRECTIVE: EPR / EXTENDED PRODUCER RESPONSIBILITY

Objective: improve the environmental performance of:

- batteries
- the activities of all economic operators involved in the life cycle of batteries: producers, distributors and end-users and recyclers

Prevention: prohibition on batteries containing hazardous substances

End of life: high level of collection and recycling of waste batteries
MARKET OF COLLECTION/RECYCLING

Negative value or low volumes
No efficient market mechanism for waste batteries with negative value
To be organized/financed by producers of batteries

End-user → Collection
Retail, municipalities, schools, WEEE dismantlers, professional collectors/industry

Sorting

Recycling
Alkaline / Zinc, Lithium, Lead, NiMH, NiCd

New resources
MARKET OF COLLECTION/RECYCLING

Positive Value

Efficient market mechanism for waste batteries with positive value

No intervention by producers required

End-user

Collection

Recycling

New resources/new batteries
COLLECTION RESULTS

- Bebat
- Consorzio Remedia
- Corepile
- Ecobat
- Ecobatterien
- Ecopilas
- Ecopilhas
- Elretur
- GRS
- Recser Oy
- Stibat
- WEEE Ireland
- Eucobat - EU

Collection Rate 2015
Target 2012-2015
Target 2016
CURRENT CHALLENGES: COLLECTION EFFICIENCY

Studies in Belgium, Denmark and The Netherlands

Only 1 to 2 batteries (20-40g) per 100 kg municipal solid waste

Average 0.03%
CURRENT CHALLENGES: BATTERIES AT HOME
CURRENT CHALLENGES: THE WORLD CHANGES

2000-2005

2016
CURRENT CHALLENGES: THE MARKET CHANGES

- Zinc/Carbon - Alkaline
- Lithium Primary
- Button Cells
- NiCd
- NiMH
- Lithium Rechargeable

Graph showing market changes from 2001 to 2015.
CURRENT CHALLENGES: BATTERY LIFESPAN

Lithium rechargeable age distribution

Cumulative age distribution of collected rechargeable lithium batteries

Average age

(n=415)
CURRENT CHALLENGES: ELEMENTS INFLUENCING THE COLLECTION RATE

- Lifespan of batteries
- Rechargeable (lithium) batteries
- WEEE collection rate
- Removal of batteries from WEEE
- Impact of competition
- Interpretation of definitions
- Traceability and (lack of) reporting
- General consumer awareness
- Collection network
- Consumer awareness campaigns
EUCOBAT POSITION: COLLECTION TARGET

“A collection target can only be adequate if it is related to the quantities of waste available for collection.”

Download available at www.eucobat.eu
EUCOBAT proposes that the responsibility for the reporting of the recycling efficiencies would lie with the first recyclers, that would have to report to the Member State where they are located, and that this information would be made available for information to all other Member States where these batteries were collected. This requires however a harmonised approach by all the Member States, which should be of the highest concern.

Download available at www.eucobat.eu
EUCOBAT POSITION: RECYCLING TARGETS

Eucobat pursues a future-oriented recycling strategy, taking into account the full environmental impact of the recycling process and the economical value of the materials contained in the batteries. The recycling targets should be realistic, measurable and value-based instead of mass-based, and should ensure the recycling of hazardous and valuable materials to the highest degree that is technically feasible while avoiding excessive costs.

Download available at www.eucobat.eu
EUCOBAT POSITION: PRODUCER’S FINANCIAL RESPONSIBILITIES

"Eucobat proposes that Member States be allowed to require a visible compliance fee to be mentioned on invoices from producers to purchasers of batteries. The visible compliance fee shall include all costs [for collection, sorting, treatment, monitoring, reporting, communication, sensibilisation and management] incurred by the producers or by third parties acting on their behalf. The costs mentioned shall not exceed the best estimate of the actual costs incurred. The mandatory visible compliance fee applies only to batteries for which producers actively organize collection."
FUTURE CHALLENGES: MARKET EVOLUTION

New applications for batteries

- Personal mobility
- Powerwall
- Drones
- E-scooters
- Internet of things

The size of the market changes fundamentally
FUTURE CHALLENGES: MARKET EVOLUTION

New types of batteries

Industrial batteries: Pb -> Li
Development in chemistries
  Lithium with Silicon and Graphene
  Lithium Sulphur (Li-S)
  Lithium and oxygen (Li-air)
From Li -> Sodium-ion (Na-ion)?
Nickel Iron (Ni-Fe)

New producers
Producers of applications next to traditional dedicated battery producers

Reuse/ Second Life
Producer Responsibility
Financing
FUTURE CHALLENGES

- Business model for collection/recycling of negative value waste streams: Fair competition and closed loop?
- Recycling capacity
- Recycling technology for new chemistries
- Legal framework for reuse/second life
SUCCESS IS THE RESULT OF A JOINT EFFORT

Producers + Compliance Schemes + Collectors + Sorters + Recyclers

“Improving the environmental performance of batteries and accumulators”
MANY THANKS FOR YOUR ATTENTION

Eucobat aisbl
Excelsiorlaan 91
1930 Zaventem
Belgium

p.binnemans@eucobat.eu
laurens.ten.horn@stibat.nl