



## 2016 ICBR Conference

### An Action Plan on Circular Economy Outlook for the Portable Power Industry



## CONTENT

- EPBA in a nutshell
- Introduction
- Circular economy principles
- Achievements in line with CE thinking
- Future developments
- Conclusions



## EPBA IN A NUTSHELL

- EPBA is the authoritative voice of the portable power industry
  - Portable primary batteries
  - Portable rechargeable batteries
  - Battery chargers
- We represent the industry's interests towards European and international institutions
- Our mission is to provide consumers with complete and sustainable power solutions across all life cycle stages from mining raw materials to end of life



## EPBA IN A NUTSHELL

- EPBA Operates since the 1980's (formally known as Europile)
- Membership:
  - Manufacturers
  - National battery associations
  - OEMs
- In 2015 our members placed around 5 billion portable primary and rechargeable batteries on the market in Europe



## INTRODUCTION

- The Commission's circular economy package was published on 2 December 2015
  - An action plan on circular economy
  - Revision of the waste legislation
- The overall purpose of the circular economy action plan is to move away from a linear product model
  - ↳ Focus on reuse, repairability, upgrading, remanufacturing



# CE PRINCIPLES APPLIED ON PORTABLE BATTERIES

## General approach

- A 'one size fits all approach' is not realistic
- The distinct specificity of products has to be taken into account
- The success of the Circular Economy will depend greatly on its ability to recognise differences across materials and products



# CE PRINCIPLES APPLIED ON PORTABLE BATTERIES





# CE PRINCIPLES APPLIED ON PORTABLE BATTERIES

## Resource efficiency

- The product specific requirements of batteries has to be taken into account
  - ➡ High level of quality of materials is needed for battery production
  - ➡ Low quality → quicker depletion batteries → increased waste generation
  - ➡ Industrial symbiosis: secondary raw materials from recycled batteries can be part of other production processes:
    - electrolysis,
    - stainless steel





# CE PRINCIPLES APPLIED ON PORTABLE BATTERIES

## Waste management

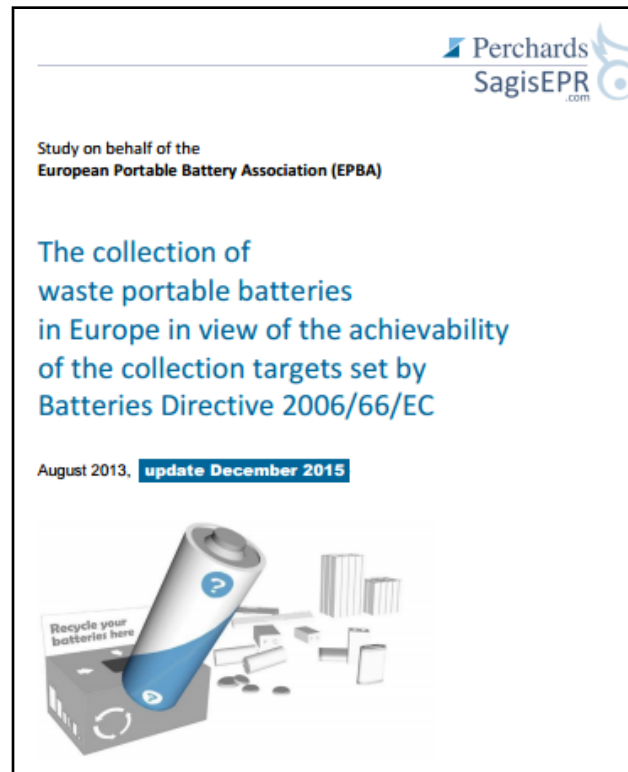
- General minimum requirements for EPR schemes to ensure coherent and effective implementation on national level
- Common principles should focus on:
  - Transparency
  - Accountability
  - Flexibility
  - Fair competition
  - Financing
  - Harmonisation
  - Awareness raising
  - Enforcement



# CE PRINCIPLES APPLIED ON PORTABLE BATTERIES

## Waste management

- Battery specific legislation has to consider complexity of portable battery collection
- Current outlook is not positive:
  - ➔ It is anticipated that only 10 MS will achieve the 45% collection target set for 2016





# CE PRINCIPLES APPLIED ON PORTABLE BATTERIES

## Policy framework

- Proper and efficient enforcement by authorities is needed
- Current practice with battery directive shows limited enforcement
  - Compliance with substance ban
  - Marking of batteries



## ACHIEVEMENTS IN LINE WITH CE THINKING

### Technological developments for portable batteries

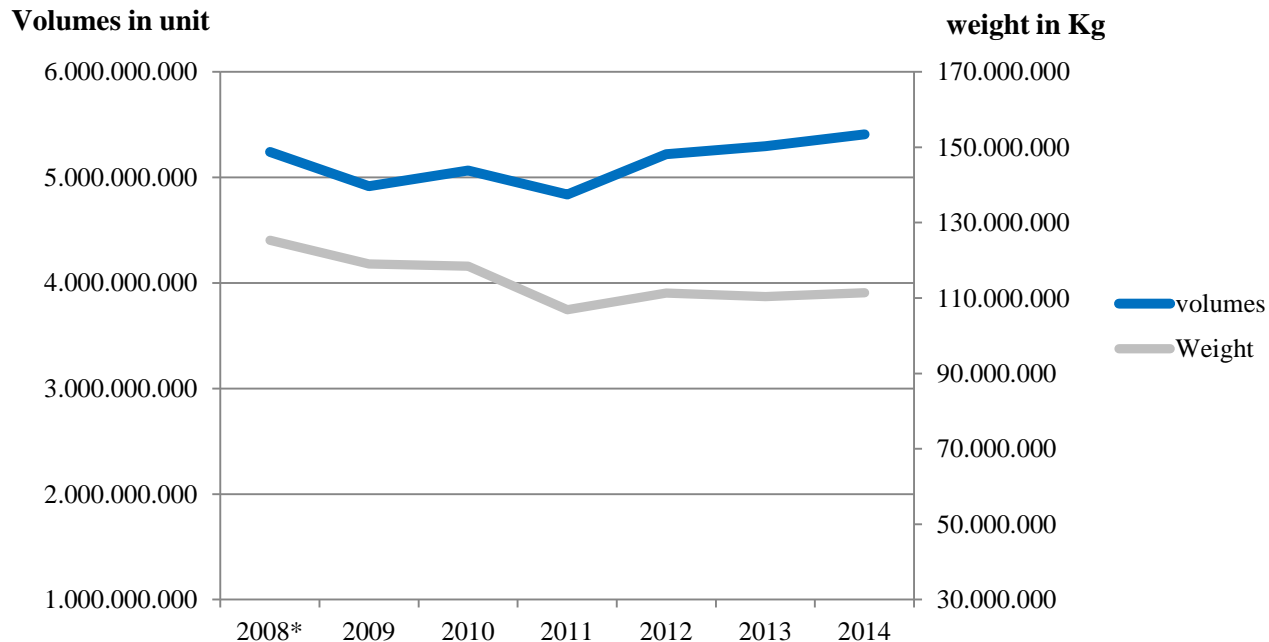
- Continuous search for more efficient use of resources & product design
  - ➡ Runtime of primary batteries has increased significantly due to more advanced materials (between 27% - 48%)
    - Special graphite
    - Zinc powder with engineered particle shape
    - Manganese dioxide with improved partical structure
  - ➡ Constant rate of reduction of the weight of batteries



## ACHIEVEMENTS IN LINE WITH CE THINKING

### Technological developments for portable batteries

#### Decoupling weight/volume





## ACHIEVEMENTS IN LINE WITH CE THINKING

### Technological developments for portable batteries

- Rechargeable batteries
    - Initial charge is held for a longer time
    - Higher number of charging cycles
  - Improved longevity of batteries due to mechanical changes
    - Increase in internal volume of batteries
    - Thinner plastic seal and separator papers
    - More efficient separator construction
  - Increased shelf life of batteries
    - Increased purity of raw materials
    - New additives for protection against corrosion
- } Improved leakage protection



## ACHIEVEMENTS IN LINE WITH CE THINKING

### Other developments

- Progress in appliances which become more energy efficient
- Continuous focus on consumer information for making informed decisions on the appropriate type of battery
  - Type of application
  - Usage pattern



## FUTURE DEVELOPMENTS

- Continuous trend towards miniaturisation of batteries in function of the progress of appliances
- Energy content will continue to increase with use of advanced raw materials and mechanical improvements
- Management systems of battery packs are constantly improved resulting in higher efficiencies





## CONCLUSIONS

- The members of EPBA will continue their research to enhance the performance and decrease the environmental footprint
- EPBA is committed to contribute to apply circular economy thinking to the portable battery industry
- To ensure a successful implementation, the product specificity of portable batteries should be taken into account
- EPBA will continue to work closely with the institutions on policies which affect the portable power industry



Thank you!

Hans Craen

[epba@kelleneurope.com](mailto:epba@kelleneurope.com)

Tel: +32 2 761 16 02