



Advanced Rechargeable Batteries

KEEP IT SAFE !

AGORIA
Brussels, June 20, 2013

- 1. INVENTORY OF INCIDENTS**
- 2. DEMAND FOR INFORMATION**
- 3. RESPONSES**
- 4. TESTS**
- 5. CONCLUSIONS**

1. INCIDENTS in EU

Amsterdam, Nov 2011



USE

Transport
Air



Dubai / UPS

End of Life
Storage

Absence of
SC Protection (NI)

Mishandling (UK)



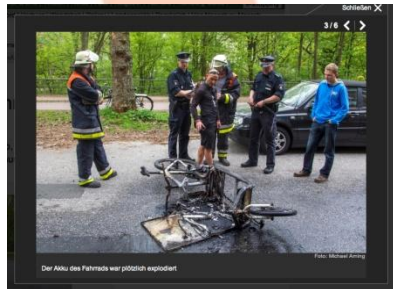
SAFETY

Production/
Assembly

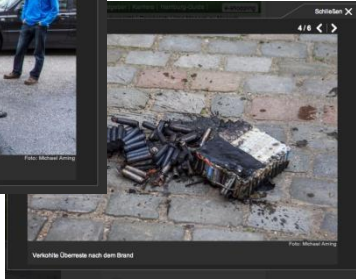
End of Life
Transport



Vienna (A) April 2013



Hamburg
May 2013



Ellwangen
May 2nd 2013



GRS 2012 & 2013

Lithium-Ion Batteries

<<<<<<

2013

>>>>>>

Laptop Batteries



- >Shipment not UN Compliant
- >New applications by Non- Professionals
- >High Concentration of Waste Batteries collected



Problem identified
Solution proposed by Industry
Market could develop

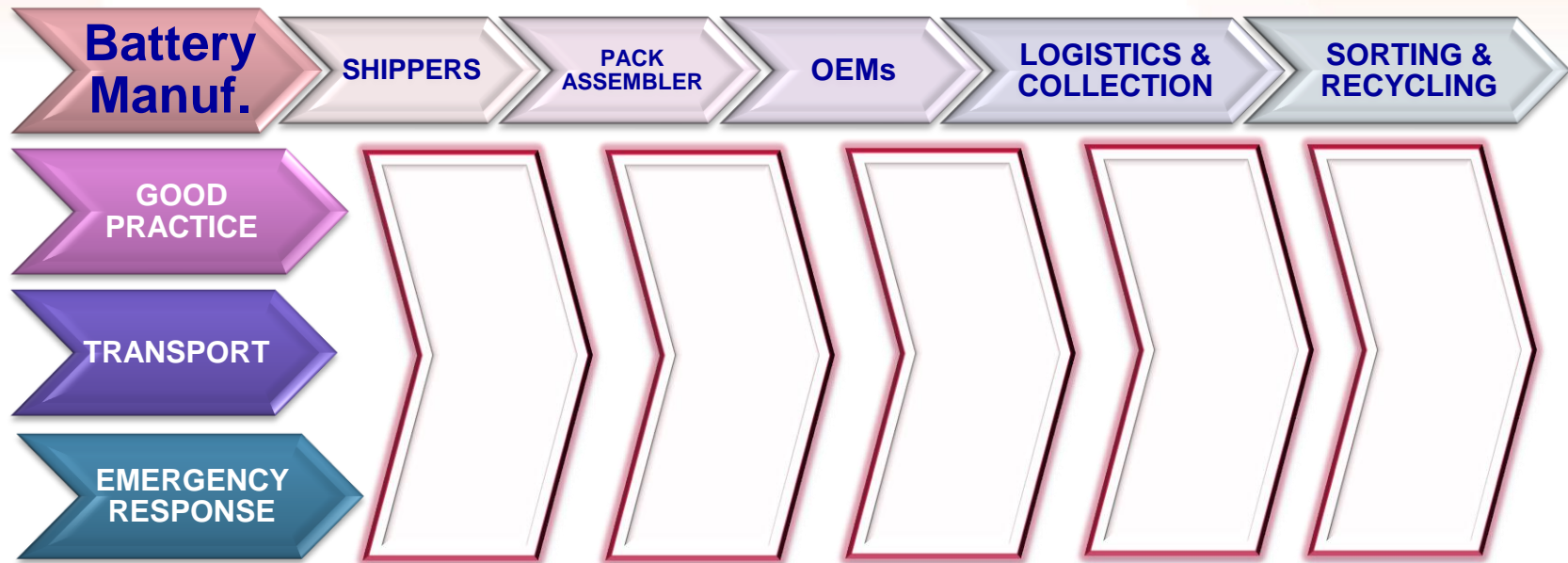


Problem not always identified
Solutions are pending



Market could be impacted

2. DEMAND FOR INFORMATION

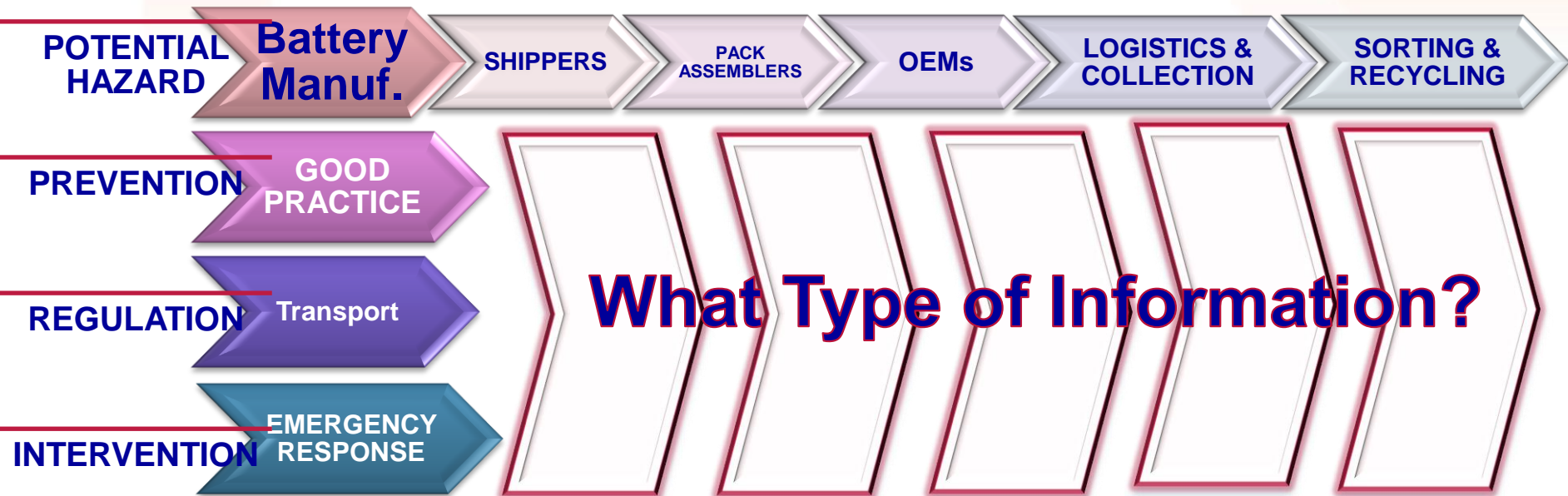


2. DEMAND FOR INFORMATION



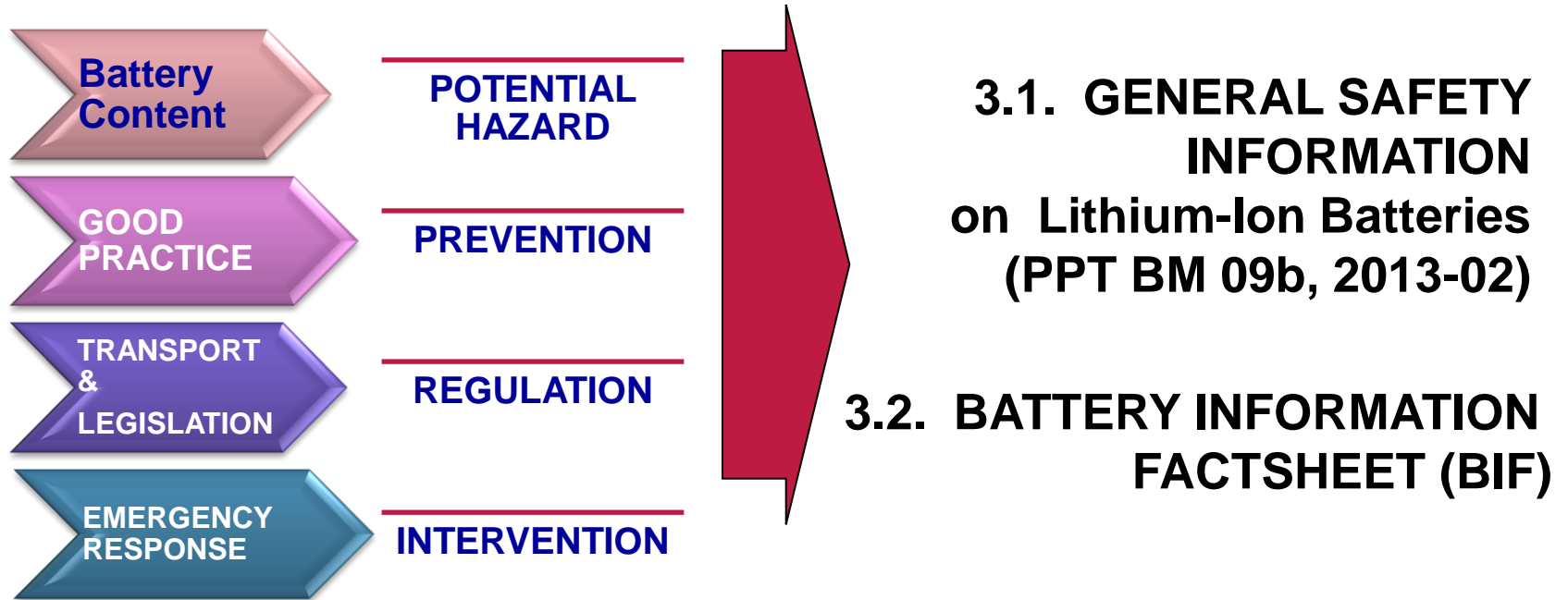
1. From Actors in the supply chain
2. From Competent Authorities
3. New Comers : e.g. Insurance C°.

2. WHAT TYPE OF INFORMATION

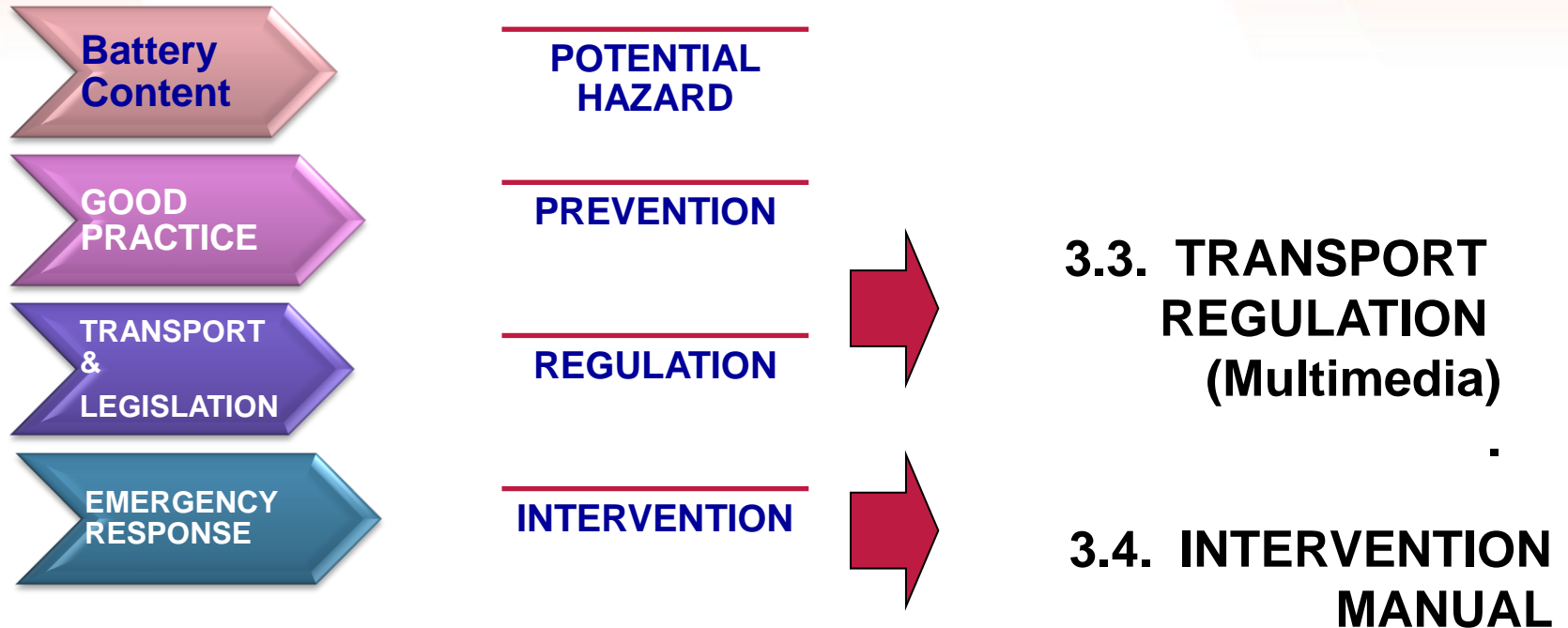


1. From Actors in the supply chain
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3. RECHARGE's RESPONSE



3. RECHARGE's RESPONSES



4. TESTS



- Cobalt oxide
- 19,200 cells total
- 4,800 cells/pallet



- Cobalt oxide
- 15,552 cells total
- 27 boxes/pallet



- 200 power packs total
- 2,000 cells total
- 25 boxes/pallet



Lithium ion cells and batteries tested by Fire Protection Research Foundation

4. TESTS



- Phase IIB report published May 2013 contains results of tests conducted on lithium ion polymer and 18650 cells and power tool battery packs
- Report and videos available:

<http://www.nfpa.org/itemDetail.asp?categoryID=2925&itemID=63098>

<http://www.youtube.com/playlist?list=PLIEPQwbNZGefa2b31kmsdBWwwwlXXi6RA>

Lithium Ion Batteries Hazard and Use Assessment Phase IIB

*Flammability Characterization of Li-ion Batteries for
Storage Protection*

Prepared by:

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THE
FIRE PROTECTION
RESEARCH FOUNDATION
Research in support of the NFPA mission

FIRE RESEARCH

1. **There is a demand for Safety Information on the use, transport handling and storage of Lithium-Ion batteries.**
2. **There is a need to integrate Primary Lithium Batteries in the communication**
3. **Several Communication tools are developed by RECHARGE and are open for review**
4. **A global approach to prepare communication tools is necessary. RECHARGE will lead action on a global basis**

1. **INVENTORY of INITIATIVES related to Lithium Batteries Safety**
2. **DEFINE CRITICAL ISSUES TO BE TACKLED**
 - 2.1. **Fire Testing >>> FPRF, Luxemburg, EUCOBAT,...**
 - 2.2. **Cushioning Materials**
 - 2.3. **Emergency Response Guidance: E-mobility, Storage,...**
3. **SELECT and COORDINATE TARGETED ACTIONS**