



NAATBatt Workshop on Advanced Battery Recycling - 2017

Bob Galyen, Chief Technical Officer, CATL
President of NAATBatt International

Opening Remarks of Recycling Workshop



- ❖ NAATBatt International as an industry leader is providing today's forum to openly discuss recycling of lithium based battery technologies
- ❖ We will examine the economic, technological and policy challenges of recycling end-of-life high voltage lithium-ion batteries
- ❖ We have amassed a contingent of worldwide experts to discuss this topic including NA, EU and Asia representatives
- ❖ The most comprehensive international conference focused on high voltage lithium-ion battery recycling to date

Opening Remarks of Recycling Workshop



- ❖ Amount of Lithium based battery systems are growing rapidly – expected to continue with CE, EV and ESS to consider, with new applications entering the market
- ❖ Battery industry has a long history of social responsibility with success in recycling lead acid batteries
- ❖ Reminder: Its not just the cells we are after, but the whole system!
- ❖ However: Today's focus is on Lithium based cell recycling!

Opening Remarks of Recycling Workshop



❖ What are the difficulties today of recycling:

- ❖ Location, location, location: the cost of shipping and transportation?
- ❖ Technology of recycling?
- ❖ Volume, mass, cost of materials?
- ❖ Role of policy and enforcement?
- ❖ Safety of recycling and the handling of stranded energy?

❖ Future issues of recycling:

- ❖ Will the price point of new cells decrease to the point where it makes no sense to recycle?
- ❖ Rate of technology changes? Will new products outpace capital investment for recycling present technologies?
- ❖ Government regulatory concerns for international trade and domestic business?

Morning Speakers Session 1



❖ Quantifying the Advanced Battery Recycling Challenge and Market Opportunity

❖ [Steve Pledger](#), *Metal Conversion Technologies*

❖ The Strategic Case for Recycling Energy Materials

❖ [Richard Corson](#), *U.S. Export Assistance Center*

❖ Recycling Energy Materials in China

❖ [Yu Haijun](#), *Guangdong BRUNP Recycling Technology Co., Ltd.*

Morning Speakers Session 2



- ❖ **Quantifying the Contribution of Advanced Battery Recycling to Energy Efficiency and Carbon Emission Reduction**

- ❖ [Linda Gaines](#), *Argonne National Laboratory*

- ❖ **The Stranded Energy Problem**

- ❖ [Phil Gorney](#), *NHTSA*



Afternoon Speaker Session



- ❖ **The Technological Challenges of Recycling Advanced Battery Waste Streams**

- ❖ [Joe Acker](#), *Retriev Technologies*

- ❖ **Report on SAE International Recycling Committee Work and Recommendations**

- ❖ [Colin Pelletier](#), *RSR Technologies*

- ❖ **The Utility Perspective on Recycling ESS Systems**

- ❖ [Brittany Westlake](#), *EPRI*

Afternoon Panel Sessions



❖ **New Technologies That May Change the Economics of Recycling Lithium-Ion Batteries** Moderator – **Jim Greenberger, NAATBatt**

- ❖ [Steve Sloop](#), *OnTo Technology*
- [Yan Wang](#), Worcester Polytechnic Institute
- [Norman Chow](#), Kemetco Research
- [Michael Slater](#), Farasis Energy

❖ **What's the Rest of the World Doing?** Moderator – **Bob Galyen, CATL**

- ❖ [Mark Caffarey](#), *Umicore*
- [Yu Haijun](#), *Guangdong Brunp Recycling Technology Co., Ltd.*
- [John Kincaide](#), *Werecyclebatteries.com*

❖ **The Automakers' Perspective** Moderator – **Pablo Valencia, GM**

- ❖ [Renata Arsenault](#), Ford Motor Co.
- [Peter Karlson](#), General Motors
- [Darnell Jones](#), FCA US

CATL

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