



iNEMI
International Electronics Manufacturing Initiative

Tuesday Wrap Up

Bob Pfahl, iNEMI

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Reuse, Recycling and End of Life

- **Wayne Rifer-Green Electronics Council**
 - Patchwork of Recycling Models in US
 - Need for Harmonization of Take Back
 - Harmonization and standardization of certain design elements
- **Mandy Hale-Sims Recycling Solutions**
 - Need Cooperation in the Recycle Chain
- **Chris Newman-US EPA**



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Sustainability

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Sustainability

- **Tom Theis-University of Illinois at Chicago**
 - Identifying potential Materials of Concern at Research Phase
 - Identifying Energy Trade Off's In Research Phase
 - Use environmental systems thinking early in the process
- **Bill Hoffman-Chicago Manufacturing Center**
 - Take Larger Systems View (Beyond Electronics)
- **Beth Kujan-Carbon Disclosure Project**
 - Provide Service to Major Firms on Carbon Footprint
- **Mark Brillhart-Cisco**
 - Collaboration
 - Standards
 - Low power/energy efficient design



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Break Out Process

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Break Out Teams

- **Steps**
 - **Identify Areas for Collaborative Development or Research**
 - Establish Break Out Teams in These Areas
 - Each Team Outlines a Potential Objective and Action Plan
 - Reconvene for Summary Teams to Presentation Proposed Actions

Profile of Successful Projects

The “sweet spot” of iNEMI projects:

- **Addresses knowledge gap of industry**
 - Common problem
 - Best solved by working together
 - Often a pre-cursor to standards development
- **Brings together a segment of supply chain to provide industry-wide response**
 - OEMs
 - EMS providers
 - Materials, equipment, software, and/or component suppliers
- **Direct alignment with member companies’ commercial interests.**





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Materials

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Materials

Current iNEMI Activities

- **Proactive program to convert to bromine flame retardant (BFR) free PCBs**
- **Low risk conversion of high-reliability applications to Pb-Free solders**
- **Alternatives to SAC alloy**
 - Warm Assembly
 - Nano-Solder

Materials

- **Standard Definitions for “Halogen-Free”**
- **Alternatives for PVC**
- **Increasing Recycled Plastic Content in Products**
 - **How to get new materials adopted on a big scale**



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Energy

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Energy

– 2009 Roadmap

- More efficient power supply technology
- World-wide harmonized energy management standard
- New innovative energy sources

– Energy Efficiency Metrics

- Industry/Product Specific

– Low power/energy efficient design



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Eco-Design

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Eco-Design

- **Harmonization of Eco-Design Systems**
- **Harmonization and standardization of certain design elements**
- **Next generation Eco-Design and LCA Tools**



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Recycling- Reuse

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Recycling-Reuse

Harmonized systems to collect, transport and process used electronics.

Should Recycling be by Industry Product Segment?

Plastics Recycling (see also materials)



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Sustainability

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Sustainability

Energy in Use and Manufacturing Phase

Non-toxic Materials in Products

Recycling and Increased Recycled Content

Dematerialization

Sustainability- Smart 2020

Electronics as solution to climate change

- Smart city planning
- Smart buildings
- Smart appliances
- Dematerialization
- Smart industry
- I-optimization
- Smart grid
- Integrated renewables
- Smart work
- Intelligent transport

Potential Impact: Reduction of 1 billion tons of Green House Gas emissions.





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Select Break Out Teams

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Sustainability

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Non-toxic Materials in Products

Recycling and Increased Recycled Content

Dematerialization

Break Out Teams

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- **Each Team Outlines a Potential Objective and Action Plan**
- **3:00 Break**
- **3:20 Reconvene for Summary: Teams Present Proposed Actions**

www.inemi.org

Email contacts:

Jim McElroy

jmcelroy@inemi.org

Bob Pfahl

bob.pfahl@inemi.org

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