

Eco Audit

Kim Marshall & Jamie O'Hare



Contents

- **Developments in MI v5**
- **Demonstration – Updated MI:Eco Audit database**
- **Demonstration – MI:Materials Gateway for NX**
- **Developments in MI:Eco Audit in MI v6**
- **Discussion of plans for MI:Eco Audit in MI v7**

Developments in MI v5

- Improved BoM Generator (Excel plug-in)
- Run Eco Audit report direct from BoM Generator
- Comparison reports
- Increased range of electronic components
- Using MaterialUniverse data to fill eco-data holes (infrastructure in place)
- Save Eco Audit results in database to use in future Eco audits (infrastructure in place)



3

Demonstration

- Updated MI:Eco Audit database
- MI:Materials Gateway for NX



4

Software development plans

Planned for MI v6

- Design for business risk reduction (E-ER-02) – Phase 1
- LCA data exchange e.g. use ecoinvent database (E-AE-02)
- Compatibility between MI:Eco Audit and MI:Materials Gateway

Supply risks for critical materials

Political

China Still Bans Rare Earth to Japan The New York Times



The rare earth metal lanthanum is poured into molds at the Jinyuan smelting workshop near the town of Damao in China.

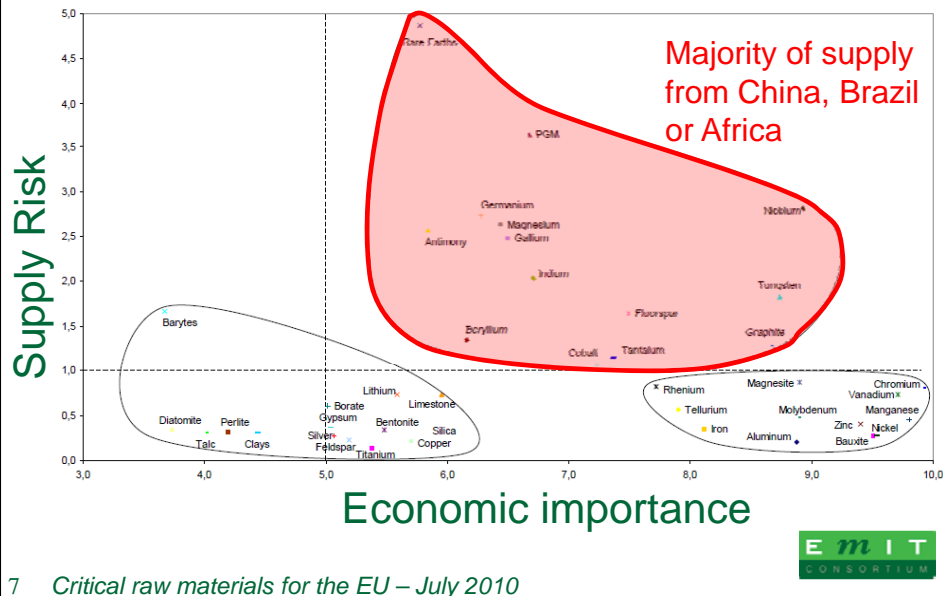
By KEITH BRADSHAW
Published: November 10, 2010

HONG KONG – The Chinese government is continuing to block shipments of crucial strategic minerals to Japan, according to industry executives, analysts and a Japanese official.

Market forces



Sustainable use of materials



Managing BoM data

The problem:

- BoM data is foundation to Eco Audit assessment
- Don't want to duplicate existing systems for BoM management e.g. PLM

The solution:

- Designers can use MI:Materials Gateway to work directly with CAD BoM
- Materials/environmental experts import PLM extract into MI:Eco Audit

Manufacturing efficiency assessment

Phase 1

- **More detailed/granular manufacturing process analysis**

Phase 2

- **Manufacturing efficiency assessment based on common metrics e.g. 'fly to buy' ratio**



9

LCA data exchange

Ecoinvent database:

- **Data on full range of environmental impact categories**
- **Thousands of processes and materials (not all relevant to engineering artefacts)**
- **Widely used with LCA software**



10

Software development plans

Candidates for MI v7:

- Manufacturing efficiency assessment (E-AE-03) – Phase 1
- Save Eco Audit results in database to use in future Eco audits (E-AE-07)
- Use MaterialUniverse data to fill gaps in customer materials data and flag this in reports (E-AE-05)
- MI:Viewer interface for Eco Audit
- Account for manufacturing waste & consumables (E-AE-04)



11

Summary

- **Demonstration – Updated MI:Eco Audit database**
- **Demonstration – MI:Materials Gateway for NX**
- **Developments in MI:Eco Audit in MI v6**
- **Demonstration – Critical materials database**
- **Discussion of plans for MI:Eco Audit in MI v7**



12