Materials Security: Workshop Summary

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Background

On 13th-14th December 2006 a workshop on Resource Productivity, Efficiency & Management was organised at the British Embassy in Tokyo in Japan by The Centre for Sustainable Design (www.cfsd.org.uk) at University for the Creative Arts (UCCA). The workshop was co-organised by the British Embassy and the Ecomaterials Forum with support from Japan's Ministry of Economy Trade & Industry (METI), Ministry of the Environment, and Japan Science and Technology Agency (JST)**.** The delegates were drawn from leading UK and Japanese universities, research institutes, companies and government ministries. The UK side included UCCA, University of Southampton, Policy Studies Institute, LRL Consultancy Services Ltd, South-East England Development Agency (SEEDA), Oakdene Hollins Ltd, Shinshu University and Resources Knowledge Transfer Network. The Japan side included the universities of Tokyo, Nagoya, Tohoku, Yokohama, Shohoku College, METI, National Institute for Materials Science (NIMS), National Institute for Environmental Studies (NIES), RIKEN Institute and Re-Tem Corp. In addition, 24 observers attended from UK and Japan. Resulting form the meeting was joint statement that set basis for potential long-term collaboration between UK and Japan related to Resource Productivity issues (see http://www.cfsd.org.uk/aede/english/Z-TOKY~1.PDF). The first action was the organisation of a follow-up workshop focused on the emerging topic of Materials Security.

Key issues

The Anglo-Japan workshop on Materials Security was organised at the University of Southampton in the UK on the 12th July 2007. The event was attended by a range of organisations including UCCA, University of Southampton, SEEDA, CTech Innovation, Oakdene Hollins, Environment Agency, United Nations Environment Programme (UNEP), Japanese Business Council for Europe (JBCE), NIMS, NIES, Shohoku College and the universities of Nagoya, Yokohama and Yamagata. The event was organised by The Centre for Sustainable Design at UCCA in association with the Ecomaterials Forum and University of Southampton with sponsorship from SEEDA and the Resource Efficiency Knowledge Transfer Network. A range of perspectives were presented and simultaneously broadcast through the internet – see links for background information:
http://www.cfsd.org.uk/2nd_UK-Japan_Workshop_on_Materials_Security.html
The presentations can be downloaded from the below (copy and paste the full address below into your browser
http://ren.globalwatchonline.com/epicentric_portal/site/UKREN/menuitem.a584c6a32b46321afc6ab5de8380e1a0/?mode=0

A number of key issues arose that can be characterised under the following headings.

- Complexity: Materials Security involves a complex set of globally, inter-related issues; to improve knowledge in this area will require an increased volume of multi-disciplinary research
- Understanding: there is a need for a better understanding of the current and future flows of rare metals ['macro model']
- Climate change: understanding of the inter-relationship between Materials Security and climate change issues needs to be improved
- Consumption: Materials Security considerations need to be integrated into the Sustainable Consumption & Production [SCP] policy agenda and there needs to be improved understanding of existing and predicted consumption and usage patterns of products and the implications for rare metal and materials extraction, production and consumption
- Policy: there is a need for a comprehensive review of the topic to enable better understanding of the linkages to other areas of environmental policy; there is a need to package-up Materials Security issues in a manner that enables it to move onto the policy agenda
- Planning: longer-term innovation and technology horizons e.g. 2050 should

start to build in consideration of Materials Security issues e.g. what rare metals will be needed for future sustainable technologies, where will the reserves be located and what are the forecasts

- China: the reserves of a significant number of current rare metals are in China – there is need to improve understanding of the environmental and socio-political dimensions and implications of government ownership and licensing
- Innovation: there is a need to do 'clever things' with rare metals, develop better recycling infrastructure and technologies and 'design for closed loops'; the links between Materials Security and increased eco-innovation needs to be better understood
- 'Quality of life': the 'people dimension' of Material Security needs greater consideration e.g. the topic has both a humanity and technology dimensions
- Terminology: there is a need to develop an agreed terminology around Materials Security e.g. 'zero waste' is not a scientific term but an aspirational goal

Conclusions

- Materials Security is a multi-faceted topic with many socio, political, technological and economic implications. Embedded in the topic are many complex issues related to rare metals identification, mining, production, consumption and recycling
- There needs to be improved understanding of strategic issues related to the current and future ownership and licensing of rights to mining of rare metals.
- Materials Security issues should be included in international policy discussions and not get lost in the global pre-occupation with the importance of climate change – a key issue is how to package issues to make them political acceptable.
- The workshop reinforced the importance of the topic and the need for further international multi-disciplinary research particularly e.g. into the gaps in knowledge in relation to existing reserves of rare metals and economic impacts, source-related socio-economic implications related to conflicts and broader implications in relation to the longer-term eco-innovation and the development of specific sustainable technologies.