



## **International Conference on Sustainable Manufacturing**

**23-24 September 2008**

Rochester Institute of Technology  
Rochester, NY, United States

### **Summary**

#### **Overview**

The International Conference on Sustainable Manufacturing was held in the Rochester Institute of Technology, Rochester, NY, United States on 23-24 September 2008. This conference was sponsored jointly by the OECD, the Rochester Institute of Technology (RIT) and the US Department of Commerce (USDOC), as the first major event of the OECD Project on Sustainable Manufacturing and Eco-innovation. It aimed to provide a venue for sharing the experience of leading companies and to provide an opportunity to discuss what the OECD and its member countries can do to help advance private sector sustainable manufacturing initiatives. Nearly 100 participants from 9 countries joined the two-day conferences including over 50 corporate experts mainly from the electronics and automotive/transport sectors. They actively participated in interactive discussions and provided insightful information on their sustainable manufacturing practices, particularly the use of indicators and tools.

#### **Structure**

The first day of the conference was dedicated to the visit to three manufacturing sites in the Rochester area with an aim to highlight how sustainable manufacturing practices are being conducted in manufacturing plants. The second day of the conference had three sessions after welcome speeches from the co-sponsors. In the first session, visions for the future of manufacturing were presented from leading manufacturers as keynote speeches, and governmental representatives outlined their policies and initiatives for encouraging industry to move towards sustainable manufacturing and eco-innovation.

The second session was dedicated to presenting actual examples of sustainable manufacturing practices from two focus sectors – consumer electronics and automotive/transport, with particular focus on the application of sustainability indicators and tools. The last session was uniquely designed as interactive focus group meetings by breaking out into four small groups. All participants had opportunities to provide their insights and views on the use of indicators and tools and the roles of public policy, which will feed into the review and framework paper to be prepared by the Secretariat and help identify the future OECD work in this area (see the conference agenda).

#### **Programme**

##### ***Day 1***

##### **Site visit**

Visits to three manufacturing facilities were arranged with the participation of approximately 60 people –

two multinational companies in the Rochester area: Eastman Kodak and Xerox Corporation, and a local entrepreneur, Harbec Plastics. The focus and scope of sustainable practices and the ways to implement them were quite different between the three companies. Whilst Kodak and Xerox introduced the participants the latest technologies in photo printing and toner cartridges, Harbec presented how its CEO realised to introduce different energy and water saving and renewable energy solutions by his leadership. The visits gave the conference participants a great amount of insights of sustainable manufacturing, and served to create a very conducive and open atmosphere for the conference discussions on the second day.

## *Day 2*

### Welcome address

Assistant Secretary William G. Sutton from the USDOC (Commerce for Manufacturing and Services) welcomed the work on sustainable manufacturing and eco-innovation as undertaken by the OECD and emphasised the significance of having both government and business representatives together in this effort. He thanked the RIT for hosting this conference, and stressed the importance for bringing clarity in the impact assessment of sustainable manufacturing initiatives. Mr. Marcos Bonturi from the OECD (Head of Structural Policy Division, DSTI) introduced the role of the OECD in today's world economy and emphasised that the work by the organisation reaches beyond its 30 member states, *i.e.* engagement of business through the BIAC and active dialogue with the BRIC countries. Mr. William Destler from the RIT (President) underscored the commitment of the institute to sustainable development. This was exemplified with a reference to the RIT being the first to deliver the US's first PhD programme in sustainable engineering.

### Session I – The future of manufacturing

Ms. Patricia Calkins from Xerox Corporation (Vice President, Environment, Health and Safety) and Ms. Janette Clute from Ford Motor Company (Manager, Sustainable Business Strategies) gave keynote speeches. Both Xerox and Ford highlighted the importance of taking a system perspective when engaging in, and assessing the impact of, sustainable manufacturing practices. Lifecycle assessment was mentioned as being of particular importance, especially as a guide towards more sustainable choices of products and services. The use of metrics, it was suggested, should encourage rather than impede innovation by framing the methodologies and setting objectives correctly.

Following, three speakers provided governmental perspectives on sustainable manufacturing and eco-innovation, presenting their policies and initiatives. Mr. Adam O'Malley from the US Department of Commerce (Acting Director, Office of Trade Policy Analysis) introduced the creation of an inter-agency body through which public and private stakeholders can work together towards sustainable manufacturing. Work has also been led to the creation of a central portal for information on government programmes and resources for sustainable manufacturing. Mr. Shinji Okakura from Japan's Ministry of Economy, Trade and Industry (Director, International Affairs Office) introduced a number of the country's initiatives aimed to foster eco-innovation. In particular, he highlighted its top-runner programme which aims to continuously improve the energy efficiency of a number of product categories by setting well-performing products as new standards. Mr. Alain Pesson from French Ministry of Economy, Industry and Employment (Head of Mission for Industrial Sustainable Development) underscored sustainable manufacturing as being at the heart of the French Presidency of the European Union and highlighted the EU's Environmental Technology Action Plan (ETAP) and the latest Action Plan on Sustainable Consumption and Production and Sustainable Industrial Policy. He emphasised the importance of sound industrial policies for promoting sustainability by improving and integrating the regulatory environment.

## Session II - Realising sustainable manufacturing in selected sectors

In the first half of this session, three corporate experts from the consumer electronics sector presented their sustainable manufacturing practices. Mr. Narito Shibaike from Panasonic (Manager, Environmental Planning Group, Corporate Environmental Affairs) presented the Panasonic's efforts to increase the energy efficiency of products and to change the behaviour of consumers regarding product usage by providing information based on its eco-efficiency indicator, Factor X. He proposed awards for retailers that would promote well-performing products, certifications for products that have proved themselves, and financial support to consumers who change their behaviour based on more sustainable choices. Mr. Ed Butler from Nokia (Manager, Environmental Affairs, North America) highlighted the company's goal to be a key environmental company not just in their sector but of all companies. Nokia is working towards introducing an easy and convenient take-back system around the world. The company is also working on educating consumers to unplug their chargers when not used. Mr. John Harland from Intel (Manager, Design for Environment) emphasised that Intel sees IT as both a problem and a solution to sustainability. He emphasised that sustainability strategies must reflect and integrate the company's expansion plans, its goals and the stakeholder interests, and it is preferable that aspects of sustainability are introduced as early in the process as possible. Data feedback is an important element of this process as it facilitates continuous improvement.

The second half of the session was dedicated to sustainable manufacturing in the automotive and transport sector with three presenters from leading companies. Ms. Jody L. Howard from Caterpillar (Director, Social Responsibility) emphasised the usefulness of lifecycle assessment as a tool for directing efforts to areas where they could be most effective. For instance, 95% of the Caterpillar's environmental footprint stems from product usage. The company therefore puts most efforts into innovative product design for improving overall sustainability performance. Mr. Matthew Fronk from General Motors (Lab Director, Fuel Cell Research) argued that current technology in the automotive industry already has a base for very high levels of remanufacturing and recycling. The transition towards new propulsion systems, such as fuel cells, however, require companies to acquire knowledge about entirely new technologies and materials such as power electronics and batteries. This would also require new systems for product analysis and testing, recycling, and remanufacturing. Mr. Bill Gregory from Milliken & Company (Director, Sustainability) mentioned that the company began measuring its environmental impact 40 years ago and achieved zero-waste to landfill in 1999. The company is redefining its automotive interior products as those that provide personal fulfillment, expression and well-being.

## Session III: Focus groups on improving practices of sustainable manufacturing

To gain a better understanding of sustainability indicators and tools used by manufacturing companies, break-out focus groups were held by dividing the participants into four groups: two for the consumer electronics sector and two for the automotive/transport sector. The focus groups also addressed the barriers that companies were facing regarding the implementation of sustainability practices, how governments can help to reduce these barriers, and what role the OECD could play in this regard. As a background for the discussion, Mr. Tomoo Machiba from the OECD (Senior Policy Analyst, Structural Policy Division) presented a provisional analysis of existing indicators for sustainable manufacturing. Mr. Nabil Nasr from the RIT (Director, Golisano Institute for Sustainability) framed the relationship between public policy and corporate efforts for sustainable manufacturing, and presented key questions for focus group discussions.

### *Use of tools and indicators*

Both the automotive/transport and consumer electronics industry indicated particular relevance of indicators and tools to energy use and product efficiency, reduction of hazardous materials, waste to landfill, and recycling. However, the range of indicators and tools used throughout the two industries are

very diverse. No one indicator or tool was mentioned as being of particular relevance or importance, highlighting the importance of individual circumstances under which the indicators or tools are used. That being said it was generally agreed that both indicators and tools must be transparent, simple to implement, and easy to understand – especially when used for external communication purposes. For internal purposes, and under conditions where the company has a good understanding of all relevant processes, the use of more complex tools such as lifecycle assessment and material flow analysis were seen as beneficial. There was also a strong sentiment that environmental impact measures essentially should include product consumption and that tools therefore must take the entire value chain into account. It was shared that the OECD could help to bring clarity about existing indicators, tools and frameworks, and work to harmonise methods, units of measurement and terminology. The promotion of a global guidance for a representative group of “best-practice” indicator sets was also seen as a potential big step forward.

### *Public policy issues*

Barriers to implement sustainable manufacturing practices were generally concerned with culture, information and capital. Sustainable manufacturing initiatives, it was highlighted, would not go far if there was no buy-in and leadership from the top management. Also, uncertainties about investment possibilities and how to take into account the potential time lag between investments and their return were seen as deterrents and serious barriers to justify investments and raise the capital needed. “Green-washing”, which in effect could undermine sustainability efforts, was also mentioned as a concern, particularly in relationship to the existing sustainability indicators that easily can be tweaked. In this regard, the lack of a common language and terminology in the field would also cause difficulties for companies to see through different certification schemes and create a gap of understanding between the different actors located throughout the value chain.

Regarding the role of governments, one of the clearest recommendations was that governments should review and streamline existing regulation schemes with a view towards rewarding good practices. The OECD was seen as a relevant body for gathering information on best practices and disseminating industry-specific recommendations and guidance. It was also suggested that the OECD would continue to arrange forums and educational events regarding sustainable manufacturing and that it could improve its outreach to other stakeholders. The OECD was also recommended to help companies identify the links between good sustainability practices and financial returns.