

45th ECCA General Meeting



Berlin was the destination of the 45th ECCA General Meeting in May

shifting the political importance from West to East, leading to a great upheaval in the world during the next decades”, said Tim Jones, programme director of the Future Agenda. The Future Agenda is a global foresight programme, in which experts from different sectors and countries explore the changes which will occur in the near future.

Tim Jones talked about some of these topics at the 45th ECCA General Meeting in Berlin in May. He expects a number of changes in manufacturing over the next decades, for example:

- In the construction sector, cast and 3D machined cladding is opening up a wide range of design options.
- In a fully flattened world, where Intellectual property (IP) has less value, China’s domestic market will increasingly set the global standards. Knowledge will be available everywhere.
- To keep up in the West, we need to double productivity in the next 20 years but without increasing resource consumption.
- Virtual tools will increasingly control flexible physical tools in the people-free programmable shop floor.

“Further separation of design and manufacture allows for more low cost complexity especially close to the customer”, said Jones. Distributed assembly and access to simple technology will provide new entrants with more local supply options. So the customer will choose what he wants at a very

The earthquake and tsunami in Japan in March showed again that energy efficient, sustainable and environmentally friendly products and production are more important than ever. “Growing population, economic, physical, and political changes as well as shortage of key raw materials are

late stage of production (late customisation). To close the gap between resources and the market, new production concepts will see mobile factories. Factories on ships will allow the production on the way to the customer e.g. from China to Europe. Floating breweries might take up the crops somewhere in the East and produce beer on the way to Europe.

The change in production concepts will also include a social component. “BASF started with the strategic implementation of social media in its internal and external communications mix.” Patrick Schmidt-Kuehnle, Social Media Manager at BASF, talked about using established social media platforms like Facebook, Twitter or YouTube. BASF created a cross-linked presence in the social media environment. Governed by global communications, business units added target group specific activities in the social web. With a social media newsroom and a dialogue orientated chapter on the company’s website linked to Facebook, connections between the social media activities and the company’s website were established. This resulted in a high activity on the Facebook page compared to other B2B companies, including five per cent business leads.

Energy Efficiency and Sustainability

With the environmental responsibility, social responsibility is increasing these days. “Competent people, a well-managed personnel and an environmental agenda form the foundation for economic sustainability”, said Toni Hemminki, Senior Vice President, Technology, Energy and Environment at Rautaruukki. “Working towards sustainability may bring along new business ideas and new innovations”. Contributions in the steel sector come from reduction of emissions, recycling and innovations.

ECCA Award 2011

In 2007, ECCA created the ECCA Award to recognise outstanding contributions to the coil coating industry. At the ECCA conference in Berlin,



Joachim Höfler (l.) and Bengt Ingman

and support to our organisation”, said Joachim Höfler, president of ECCA, at the award presentation.

the ECCA Award 2011 was presented to Bengt Ingman from Becker Industrial Coatings in Sweden. Bengt Ingman, who holds and has held various senior managerial positions to build Becker’s business in different parts of the world, is a very engaged member of the ECCA board since many years. He is also an active member of the SAGE group. “Bengt has shown incredible and continuous commitment

Rautaruukki avoids 700 000 t of CO₂ emissions annually by recycling 520 000 t steel and 180 000 t mineral products. To illustrate recent innovations, Toni Hemminki showed a container made of special steel with completely new design, weighing 800 kg less than a conventional container. For container end-users this allows savings of 60,000 litres of fuel and 160 tonnes CO₂ for a tandem trailer with a 10-



Mid of May 170 participants discussed sustainability in construction at the spring congress

year lifetime driving 150,000 km/year. At a fuel price of €1.21 per litre this yields to 72,600 Euro savings.

As sustainability has emerged as a key driver for industrial innovation, new ways of cooperation across all segments of the value chain are required, said André Veneman, Corporate Director Sustainability/Health Safety and Environment at Akzo Nobel. On the product side, functional coatings add to sustainability. Energy efficient curing, i.e. UV/EB, NIR or higher-solids, lower-VOC coatings, water-based coatings, bio-renewable raw materials, pretreatmentless primers or chromate-free primer technology, are all innovations to increase the sustainability of coil coatings.

Green Building is a Major Trend

In line with the conference motto – building a greener world – the main topic was coil coatings for the construction industry. Because almost 75 % of coil coating products are manufactured for the building industry, the attitude of architects towards sustainability is important. A survey conducted by Arch Vision showed, that overall opinion on sustainability among architects is very positive. “Manufacturers could benefit from this positive attitude by providing sustainable solutions with their products”, said Reinier Zuydgeest, Account Manager at Arch Vision on the conference. In France, demand for sustainable materials is the highest but also in U.K. and the Netherlands. The majority of architects feel they are well informed about sustainability, but their willingness to invest in sustainability lacks behind.

Low & Zero Carbon technologies

One point of sustainability concepts is the reduction of CO₂ emission. “Around 40 % of all emissions are associated with the operation of buildings and so legislation is promoting low and zero carbon buildings”, said Terry Goodwin, Director Business Development at Tata Steel. In the UK, the building regulations set a clear trajectory to zero operational carbon for all new buildings by 2019. Together with the British Constructional Steelwork Association (BCSA), Tata Steel have carried out an extensive piece of work to understand what this means for typical buildings. This Target Zero project aims to provide guidance to architects and building developers to build sustainable buildings in steel. There are a lot of possibilities to improve energy efficiency:

- Improving air permeability
- Improving wall, ground floor and roof insulation
- Improved external glazing

- Solar shading
- Improving cooling and heating plant efficiency
- Improved lighting efficiency and introducing daylight dimming

“The Target Zero project has shown that high levels of energy efficiency can be reached”, explains Terry Goodwin. Low and zero carbon buildings in steel are feasible and economical. They can achieve lower CO₂ emissions at a lower cost than alternatives. “Detailed design guidance is helping designers to create leading-edge steel buildings.”

Three years ago BASF built a demonstration house on the campus of Nottingham University. This project was designed to demonstrate that affordable domestic housing can be built to the code 4

level of sustainability (equivalent to the German Passive house). Precoated steel was used as the preferred roofing material and was also used as side cladding for both aesthetic and functional reasons. Now the house is occupied since 2,5 years. Nick Brown, Director EU II at BASF, showed some results of the house energy performance.



The Nottingham house project has shown that it is possible to decrease the energy consumption significantly through the combined use of complementary technologies.

For the Nottingham house precoated steel was used as the preferred roofing and side cladding material Foto: BASF SE

Aim of the project was to reduce the energy consumption for lighting, heating and hot water below 104 kWh/m² per year. But the actual result was unexpectedly low: the two ladies who live in the house only need 36 kWh/m² per year. The use of precoated metal was an integral part of the success.

Another example of using precoated metal in a domestic environment was presented by Bernd Meuthen from the German ECCA Group. Here the important feature was design more than sustainability. When in the mid-1990s, many residential buildings in Berlin were being re-furbished, the new owner of a featureless block of 296 flats got the renowned artist Gustavo interested in drawing a façade painting for each side of the building. The fantasy images of the artist adorn an area of nearly 15,000 m² conjuring the warmth of the south with bizarre symbols and resulting in “Europe’s largest work of art”. “His playfully portrayed figures, however, hardly revealed the challenges which this project presented to everyone involved”, said Meuthen.

The project was realised with ALUCOBOND® A2 pre-painted aluminium non-combustible composite panels ventilated at the rear. They consist of 2 panels with a high-quality topside coating and a thick mineral-filled core. The coils were painted in twelve bright colours. Computer-controlled cutting resulted in some 11,000 encoded pieces with a variety of dimensions. Berlin City dedicated the monument to the artist and since its reopening in 1999, the “Gustavo-Haus” continues to attract considerable attention.

Greener Product in a Greener Production

Coming back to sustainability in the coil coating industry, François Sebaux, Operations Managing Director at Becker Industrial Coatings, talked about a cleaner and greener production. The company intends to locate the production sites close to customers to reduce transportation impact and limit the carbon footprint. With all sites certified ISO 14001, a better waste management to decrease volumes, a clean technology with low VOC emissions based on the mixing concept to produce the right quantity close to customers were developed. The internal cleaning operation was improved by using hot water solutions in place of solvents to decrease the volume of used cleaning solvent and limit emissions of VOC. Pigging technology was improved to decrease the use of portable tanks and limit the cleaning operations with solvents.



Chrome free technology is mature for polyesters
Foto: ArcelorMittal

“Beside the process of the steel making industries which is in continuous progress, the process of painting lines in Europe has been improved in the past years through less VOC emissions, lower energy consumption and better waste treatments”, stated Manel Ben Saad from ArcelorMittal global R&D. “The coil coating industry already puts efforts on reducing and avoiding the use of hazardous substances in the final product, but there is still room for improvement beyond what is requested by the regulations today.” For instance, from ArcelorMittal side, heavy metals were banned from construction colour chart composition and the investigations to replace hexavalent

chrome containing paints or surface treatments started years ago. Today the chrome free technology is well known and mastered for the major part of coil-coated steels. It is mature for polyesters and ready to upscale for high build Polyurethane. The technology is also promising for PVC. “We have not identified any major technical gap between chrome free technologies and chrome containing ones so far”, explained Ben Saad.

Looking deeper in the paint technology Armin Michel, Programme Manager Sustainability at DSM Neo Resins, compared different coating resin technologies with respect of sustainability. He talked about Novomere, new carbon dioxide based polycarbonate resins with a very low carbon footprint. The beneficial carbon footprint comes from three areas:

1. CO₂ is permanently converted and sequestered into the polymer
2. The CO₂ is being used in place of fossil fuels
3. The polymerization reaction occurs at near ambient temperatures and requires less energy than most polymerization reactions.

With respect to sustainability Min Zheng, Research Scientist at Arkema, talked about the properties of Kynar 500 PVDF based coatings. Designed to last the lifetime of the application, the PVDF polymer based coatings provide long term protection against weathering, aging, and pollution on commercial, industrial, and residential buildings. As Perfluorinated surfactants, such as perfluorooctanoic acid (PFOA), have come under scrutiny by the U.S. Environmental Protection Agency, Arkema has eliminated the use of fluorinated surfactants in their manufacturing process. Now the resins are 100 % fluorosurfactant free.

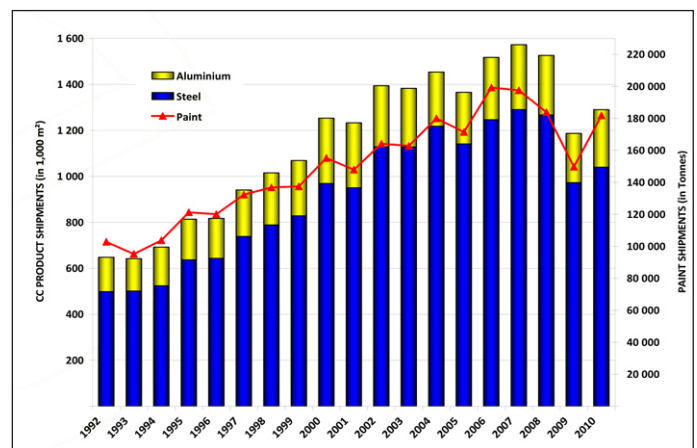
Good Recovery of the Coil Coating Industry in Europe

After the drop-down of production during the economic crisis in 2009, the coil coating industry in Europe is recovering. Compared to 2009 there was an increase in

Coil Coating Activities of the German ECCA Group

At the ECCA spring meeting in Berlin, Thorsten Reier, President of the German ECCA Group, gave an overview over the activities in the German ECCA group. The group with members from Germany, Austria and Switzerland is the biggest of the national ECCA groups. The coil coating and coil coating related industry is represented by 27 companies and associations. The group was founded in 1991 and has been very active since then, from seminars organisation, to projects delivery on topical issues like chrome-free systems, the relevance and safe working with polyurethane systems in coil coating, laminates for coil coating or the evaluation of measuring techniques. The results are noticeable. As an example: today most of the pretreatments and primers applied by the German coil coaters are chrome-free.

The coil coating industry has a long tradition in Germany. The first coil coating line is documented in 1913 at the Trierer Walzwerke in Wuppertal. It had a maximum width of 300 mm.



Development of the Coil Coating Market since 1992

production of coil coated steel and aluminium of 7.4 %. Paint shipments increased by 21.4% to 181,795 tonnes. In 2010, 4.7 Mio t (+ 7.1 %) coil coated steel and 370.000 t (+ 11.4 %) coil coated aluminium were sold by the ECCA members. Additionally, 898.000 t were imported into EU-27 mainly from China, India and Korea. Exports of 438.000 t outside Europe were stable in 2010 compared to 2009.