

12th Concawe Symposium

20–21 March 2017 Venue: Radisson Blu Astrid Hotel, Antwerp, Belgium



Peter Achten (INNAS)



Linda Ager-Wick Ellingsen (Norwegian University of Science and Technology)



Dirk F. Danneels (European Wax Federation)



Aric Dromi (Futurologist)

Lars Hein



Björn Hansen (European Commission)



(Wageningen University)



Neville Jackson (Ricardo)



Lenny Kamelia (Wageningen University)



Hans Ketelslegers (Concawe)

Niels Henrik Lindegaard (Maersk)

Alfio Mianzan (Shell)



Gordon McManus (Wood Mackenzie)



Michiel Nivard (Clingendael International Energy Programme)

Mike Rasenberg (ECHA)













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Serge Mennecier



Ian Shannon (Shell)



Philip de Smedt (Petrochemicals Europe)



Ranjeet Sokhi (University of Hertfordshire)



Les White (Aeris Europe)





(SMC)



Environmental science for the European refining industry Email: symposium@concawe.org Website: www.concawe.eu



Introduction to the 12th Concawe Symposium

ver the past 150 years, the oil industry has powered growth and advancement in society. Thanks to oil and petroleum products we all enjoy a lifestyle that was only a dream 50 years ago. We have seen new cities and indeed whole nations emerge from the deserts. During the oil age, wealth and life expectancy has increased dramatically for many of the peoples on our planet, though not yet all. The projections that the world's population will move from the current 6 billion to reach 9 billion are based on increased life expectancy, with a levelling of the birth rate. In a historical context the oil age will be seen as a wonderful contribution to the advancement of mankind.

However, much as we should recognise the role of oil, we have to face up to the challenges we face in building a more sustainable future. We do not deny that, with the increase in global population and the modern lifestyle that people enjoy, new problems have emerged. The fact that these are familiar to most households at least in the advanced economies of the world, speaks to the size of the challenge we face. Climate change, air pollution and water usage are foremost of these global issues. In turn, these lead to a number of secondary, but still important, challenges such as energy decarbonisation and a better understanding of the impact of the use of chemicals, including our products, on human health and on the environment.

Thus the scene is set for our 12th Concawe Symposium. We can resist change and become a dinosaur, or we can drive change to discover how our industry will continue to contribute in a more sustainable way for future generations. I welcome our speakers and thank them in advance for their time preparing for this symposium. I also welcome and thank the participants from our member companies, our collaborators and our stakeholders in the Commission and its agencies. Finally, I give a warm welcome to the 'young researchers', who in a small way represent the future we must create together. I hope you all enjoy the programme over the next two days.



Robin Nelson Science Director



About Concawe

Concawe was established in 1963 by a small group of leading oil companies to carry out research on environmental issues relevant to the oil industry. Its membership has broadened to include most oil companies operating in Europe. The scope of Concawe's activities has gradually expanded in line with the development of societal concerns over environmental, health and safety issues. These now cover areas such as fuels quality and emissions, air quality, water quality, soil contamination, waste, occupational health and safety, petroleum product stewardship and cross-country pipeline performance.

Concawe's main objectives are:

- To acquire pertinent scientific, economic, technical and legal information on environmental, health and safety issues relating to the refining of crude oil and the distribution and use of petroleum products.
- To communicate the findings in order to improve understanding of these issues by all stakeholders including the industry, authorities and the public at large.



Programme for the 12th Concawe Symposium

Monday 20 March 2017

10.00	Registration and welcome coffee
10.30	Opening speech
11.00	 Keynote Speech by Aric Dromi, Futurologist (11.00–11.45) What will our society look like in 2050? Population and political balance of powers Energy demand and energy sources Transport system Environment management Climate evolution Discussion and Q&A (11.45–12.15)
12.15	Networking lunch
13.30	 Future of the Transport System (13.30–14.30) Drive trains and fuels for road transport Neville Jackson (Ricardo) Shipping and marine industry Niels Henrik Lindegaard (Maersk) Planes and aviation industry Discussion and Q&A (14.30–14.50)
14.50	Challenges for Hybridization and Electrification of Vehicles as a Route to Decarbonization (14.50–15.35) Peter Achten (INNAS); Linda Ager-Wick Ellingsen (Norwegian University of Science and Technology) Discussion and Q&A (15.35–15.55)
15.55	Coffee break
16.15	Ecosystem Services—The Potential of Carbon Sequestration (16.15–17.00) Lars Hein (University of Wageningen) Discussion and Q&A (17.00–17.20)
17.20	 Future of Special Refined Products (17.20–18.30) Bitumen Carl Robertus (Nynas) Lubricants Ian Shannon (Shell) Waxes Dirk Danneels (European Wax Federation) Petrochemical feedstocks Philip de Smedt (Petrochemicals Europe) Discussion and Q&A after each speaker
18.30	Review of the Young Researchers Posters
19.15	Cocktail and dinner



Programme for the 12th Concawe Symposium (continued)

Tuesday 21 March 2017

08.00	Registration and welcome coffee
08.30	 Perspectives on the EU Refining Industry of the Future (08.30–09.15) How might the EU refining industry evolve in response to current and future challenges? Gordon McManus (Wood Mackenzie); Michiel Nivard (Clingendael International Energy Programme—CIEP) Discussion and Q&A (09.15–09.45)
09.45	 IPIECA vision for water use in the oil and gas industry and its relevance for EU refineries (09.45–10.15) Based on water visioning completed by the IPIECA water working group, this presentation will address: Future trends and constraints in water availability, use and discharge, regulations and price; Water re-use, recycling and cross-sector collaboration. Artemis Kostareli (IPIECA); Alfio Mianzan (IPIECA) Discussion and Q&A (10.15–10.45)
10.45	Coffee break
11.05	Young Researchers Poster Competition—Award Ceremony
11.15	The REACH End Game: Risk Management for Petroleum Substances as REACH Evolves (11.15–12.00) Mike Rasenberg (ECHA); Björn Hansen (European Commission) Discussion and Q&A (12.00–12.30)
12.30	Networking lunch
13.30	The Future of Human Health Assessment: Using New Methodologies for a Better Understanding of the Health Impacts of Petroleum Substances (13.30–14.15) Hans Ketelslegers (Concawe); Ivan Rusyn (Texas A&M University); Lenny Kamelia (Wageningen University) Discussion and Q&A (14.15–14.45)
14.45	 The Impact of the Use of Diesel on the Quality of Air in Cities (14.45–15.30) Follow-up on the Urban Air Quality Study and findings including other stakeholders contributions Les White (Aeris Europe); Ranjeet Sokhi (University of Hertfordshire) Discussion and Q&A (15.30–16.00)
16.00	Coffee break

Side sessions (16.30 – 18.00)

Water

Review of Concawe and IPIECA tools for water usage evaluation to 2050 *Artemis Kostareli (IPIECA)*

Air Quality

Quantitative optical gas imaging (QOGI)—presentation of the results of the 2016 study and on-site testing *Petroula Kangas (ExxonMobil)*

Refining Operations

Potential supply of IMO low sulphur marine fuel from EU refineries Serge Mennecier (SMC); Martin Tallett (EnSys Energy)