

14th Concawe Symposium

Carbon-neutrality by 2050: What role for the refining industry?

27-28 September 2021



Programme

DAY 1

September 27, 2021

Moderator: Alain Mathuren, Concawe

10:00 – 10:10 Welcome & Opening Remarks: Jean-Marc Sohier, Concawe

10:10 – 10:30 Keynote Speech: Luis Cabra, Concawe

Session 1: Adaptation of refineries to contribute to the Green Deal: Technologies

Synopsis

The EU Refining industry is embarked on a transformation journey to contribute to the Green Deal goal of reaching climate neutrality by 2050. But which technologies are needed to make this transformation happen? Thanks to the expertise of relevant academia and research institutions' experts as well as licensors and technology providers, the first session of the 14th Concawe Symposium will set the scene with some selected examples of how the "fuels of the future" could be produced. The experts will provide insights regarding the state-of-the-art technologies, presenting potential innovative approaches and exploring what opportunities and challenges are emerging within and beyond the adaptation of the refining industrial sites.

10:30 – 12:10	Thermochemical biofuel conversion processes: Overview & innovative approaches	David Chiaramonti, <i>Polytechnic University of Turin</i>
	Biomass-to-Liquid technologies: Status of recent developments & challenges	Jiří Hájek, <i>ORLEN UniCRE</i>
	Coffee Break	
	Waste-to-Chemicals: A new concept of biorefinery	Giacomo Rispoli, <i>NextChem</i>
	Advanced biofuels from refinery processing of fast pyrolysis bio-oil	Tijs Lammens, <i>BTG Bioliquids</i>

12:10 – 12:40 Q&As / Panel discussion with the participation of
Marta Yugo, *Concawe*

Session 2: Carbon Capture & Utilisation (e-Fuels) & Circular Economy

Synopsis

This 2nd session will cover the opportunities and challenges linked to a selection of emerging technologies to boost circularity within the refining system. It will particularly gather more insights about how Circular Economy and CCU aspects could be integrated into the future refining industry. Aspects such as the need for supply chain creation, pre-treatment and R&D efforts for the development and scale-up of waste-to-products technologies and their integration within the refining sites, including how to make the most of potential synergies with other industries will be introduced and discussed.

15:00 – 17:00	A look into waste to fuels supply chains: From feedstocks to final products	Chris Sim, <i>E4tech</i>
	ProcessForPlanet (HorizonEurope): CCU, waste minimisation and hubs for circularity	Ludo Diels, <i>A.SPIRE</i>
	E-Fuels: A techno-economic assessment of EU domestic production and imports towards 2050	Alba Soler & Patrick Schmidt, <i>Concawe / LBST</i>
	Coffee Break	
	Power-to-Liquids	Alfonso García, <i>Repsol</i>
	Co-processing for refinery integration of biofuels production	Duncan Akporiaye, <i>SINTEF</i>

17:00 – 17:30 Q&As / Panel discussion with the participation of
Tamour Javed, *Aramco*



Moderator: Alain Mathuren, *Concawe*

10:00 – 10:10 Introduction

Session 3: Focus on Aviation and Maritime

Synopsis

This 3rd session will look at the challenges ahead of the most hard-to-abate sectors, aviation and maritime transport. It will provide a unique understanding of future low carbon pathways and the aircrafts and ships (and related fuels!) of the future! The future towards a low carbon international aviation and maritime sector is thrilling, this session will therefore provide a unique opportunity to understand different scenarios on how the future demand (after COVID-19 pandemic and down to 2050!) and how the combination of both aircraft/vessel technologies and fuel related opportunities are essential to contribute to reduce future emissions. A session deep diving into opportunities, challenges/barriers as well as key R&D areas.

10:10 – 11:50

Aviation Deep Dive: Overview and preliminary results

Luca Bertuccioli, *E4tech*

Towards a sustainable aviation sector: Key R&D areas

Stephen Dooley, *Trinity College Dublin*

Coffee Break

Technological, operational and energy pathways for maritime transport to reduce emissions towards 2050

Tim Scarbrough, *Ricardo*

Maritime energy transition: Alternative energy carriers and beyond

Jurrit Bergsma, *TNO*

11:50 – 12:20

Q&As / Panel discussion with the participation of Damien Valdenaire, *Concawe*

Session 4: Alternative Fuels towards 2050

Synopsis

The closing session of the Symposium will feature key presentations followed by a panel discussion, where relevant speakers will share with the audience the main R&D areas for future fuel development as well as a roadmap for the road transport towards 2050 conducted by the EU technology platform ERTRAC. In addition, the session will focus on key questions such as the availability of sustainable feedstock to produce these alternative fuels, and if so, how significant their role can be to contribute to reducing GHG emissions?

15:00 – 16:40	Alternative fuels development for diesel engines	Robert McCormick, <i>National Renewable Energy Laboratory</i>
	Sustainable energies and powertrains for road transport	Roland Dauphin, <i>Concawe</i>
	Coffee Break	
	Sustainable bio-feedstock availability in the EU: A look into different scenarios towards 2050	Calliope Panoutsou, <i>Imperial College London</i>
	LCA analysis – Role of fuels & powertrains	Anne Bouter, <i>IFPEN</i>

16:40 – 17:10 Q&As / Panel discussion

17:10 – 17:20 Wrap-up of the Symposium with the participation of
Jean-Marc Sohier, *Concawe* and John Cooper, *Concawe*

