

FUTURE FUELS 2016

AUTOMOBILE, MARINE AND AVIATION

Organised by

Institution of
**MECHANICAL
ENGINEERS**

26 April 2016

Institution of Mechanical Engineers
One Birdcage Walk, London

Combustion Engines and Fuels Group
Seminar

More details available at
www.imeche.org/futurefuels

SPEAKERS INCLUDE:



John Cooper
Director General
FuelsEurope and Concawe



Richard Mills
Strategy Director
Boeing



Rob Wakely
Head of Low Carbon Fuels Division,
Energy Technology & International Directorate
Department for Transport (DfT)



Richard Bruce
Director
Office of Low Emissions Vehicles (OLEV)

**“Attending the seminar put a lot of
the work I do in to context, gave me
good networking opportunities and
stimulated technical discussions.”**

 **University of Oxford**



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4 MARCH 2016
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LowC^{VP}
low carbon vehicle partnership

FUTURE FUELS 2016 AUTOMOBILE, MARINE AND AVIATION

26 April 2016,
Institution of Mechanical Engineers
One Birdcage Walk, London



FUTURE FUELS 2016: AUTOMOBILE, MARINE AND AVIATION WILL PROVIDE A PLATFORM FOR TECHNICAL EXPERTS TO DISCUSS AND DEBATE ALTERNATIVE FUELS AND THE ENGINEERING HURDLES IN REDUCING THE CARBON FOOTPRINT OF TRANSPORTATION.

The links between CO₂ from fossil fuels and global warming is firmly established, and the desire to reduce the CO₂ emissions associated with transportation remains a key policy driver.

Concerns over local air quality have also re-emerged as a significant factor of pollution in large cities, so Future Fuels 2016 will give an overall perspective on the different choices for low carbon mobility, with a critical appraisal of the strengths and weaknesses in each area.

This event will address concerns over air quality and the steps being made to improve it. By taking a closer look at the automotive, marine and aviation industries and the fuels on which they currently operate, this seminar will offer a unique chance to identify opportunities to lower the carbon footprint of mobility.

⊕ KEY TOPICS ADDRESSED:

- Competitive and regulatory landscapes for fuel and propulsion choices
- A European insight into oil refinery and biofuel integration
- How CO₂ emissions can be assessed on a well to wheels basis
- Future mobility options and the justification behind it
- Market opportunities in the transportation or carbon sectors

👤 ORGANISING COMMITTEE

Combustion Engines and Fuels Group, The Institution of Mechanical Engineers

Members Credits:

Roger Cracknell
Technology Expert – Combustion Chemistry,
Retail Fuels Technology Group

Shell Global Solutions

Jamie Turner
Professor of Engines and Energy Systems
University of Bath

John Williams
Expert Research Technologist (Retired)
BP International

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PROGRAMME

TUESDAY 26 APRIL 2016		
	09:00	REGISTRATION AND REFRESHMENTS
		REGULATION
	09:30	CHAIR'S OPENING REMARKS
	09:40	OPENING SESSION: WHAT IS THE ROLE FOR PETROLEUM FUELS IN THE TRANSITION TO A LOWER CARBON SOCIETY? John Cooper, Director General, FuelsEurope and Concawe • Exploring the role and effects of economy-wide carbon pricing • Costs, value and challenges of different decarbonisation policy approaches are compared • Examining how we can meet climate stabilisation and transportation needs in the most cost-effective manner
	10:10	TAKING FORWARD THE UK STRATEGY FOR ULTRA LOW EMISSIONS VEHICLES Richard Bruce, Director, Office for Low Emissions Vehicles (OLEV) • Setting out the UK Government's long-term commitment • Considering progress made to date, and the UK's move to becoming the fastest growing EV market in Europe • Thinking about future challenges and the path to mass market
	10:40	LOW CARBON FUELS STRATEGY THROUGH TO 2030 Rob Wakely, Head of Low Carbon Fuels Division, Energy Technology and International Directorate, Department for Transport (DfT) • The EU and UK low carbon fuels policy framework • The challenges and opportunities of reducing carbon emissions from fuel across transport sectors • A sustainable and achievable long-term low carbon fuels strategy for the UK
	11:10	NETWORKING REFRESHMENT BREAK
		INDUSTRY CHALLENGES
	11:40	THE ROLE OF FUELS IN DECARBONISING ROAD TRANSPORT Jonathan Murray, Deputy Director, Low Carbon Vehicle Partnership (LowCVP) • Moving from tailpipe to life cycle measures of CO₂ • Providing a comparison of the carbon footprint of competing vehicle and fuel technologies • Building consensus on deployment of future transport fuels
	12:10	PANEL DISCUSSION: KEY CHALLENGES FACING THE TRANSPORT INDUSTRY • What are the main engineering challenges in reducing emissions in low carbon vehicles? • What effect does transportation policy have on the combustion engines and fuels industries? • How do recent scandals in air quality impact the assessment of emissions, and what engineering challenges do these pose?
	13:00	NETWORKING LUNCH
		INTERNATIONAL TRAVEL
	14:00	THE CHANGING SCENE OF MARINE FUELS: A LOOK AT THE PAST AND INTO THE FUTURE Timothy Wilson, Principle Specialist Engineer on Marine Fuels, Lloyd's Register • Managing the unpredictability of marine fuel quality under the ever-increasing pressure of environmental legislation and dropping fuel prices • Exploring alternative fuel options: which are viable in the near future and what simply must be put aside? • Envisioning the outlook for the next 10–30 years
	14:30	AN AVIATION PERSPECTIVE: SUSTAINABLE AVIATION FUEL DEVELOPMENTS Richard Mills, Strategy Director, Boeing • Analysing an overview of sustainable aviation fuels • Assessing progress in sustainable aviation fuels development and commercialisation • Addressing challenges and opportunities for future progress
	15:00	NETWORKING REFRESHMENT BREAK
		

PROGRAMME

TUESDAY 26 APRIL 2016 (CONT.)

FUTURE INNOVATIONS IN FUELS



15:30

BIOFUELS: A VIABLE OPTION FOR ALL TRANSPORT MODES

Nils-Olof Nylund, Research Professor for Energy Use in Transport and Engine Technology, VTT Technical Research Centre of Finland

- Looking at the European Biofuels Platform and current projects
- Giving an overview of alternative energies for transport
- Identifying the performance and potential of advanced biofuels

16:00

COMPARING FUELS: FROM WELL TO WHEELS

Speaker to be confirmed

- Exploring the latest fuel innovations in improving fuel efficiency for future mobility
- Identifying technical challenges facing engineers in improving fuel economy and how these are being overcome
- Gaining an insight into joint ventures and innovation programmes for lowering carbon emissions

16:30

CHAIR'S CLOSING REMARKS

16:40

END OF SEMINAR

For the most up-to-date and detailed programme for the event, please visit www.imeche.org/futurefuels

- This programme is subject to change.
- The Institution is not responsible for the views or opinions expressed by individual speakers.



SPEAKERS AND CONTRIBUTORS

KEYNOTE SPEAKER



JOHN COOPER
DIRECTOR GENERAL, FUELSEUROPE AND CONCAWE

John Cooper was appointed Director General, FuelsEurope and ConcaWE in April 2015. He started his career in the motor industry working on future powertrains and after three years moved to BP Downstream where he now has 27 years of experience. His previous role was leading BP's compliance strategy for renewables regulation. He has also had business leadership roles in aviation fuels and lubricants, transport energy policy, and fuels technology in the UK and USA, and has represented the UK fuels industry at the UK Automotive Council Technology Group. He holds a BA in Engineering from Cambridge University and chairs the Board of Industrial Advisors at Cambridge University Engineering Department.

CHAIR



ROGER CRACKNELL
**TECHNOLOGY EXPERT – COMBUSTION CHEMISTRY,
RETAIL FUELS TECHNOLOGY GROUP, SHELL GLOBAL
SOLUTIONS**

Roger Cracknell is Shell's Technology Expert for Combustion Chemistry in the Global Fuels Technology team. Roger drives the technology thinking and anticipates trends and technology needs in areas related to Combustion Chemistry.

Roger is a Fellow of the Royal Society of Chemistry, a Visiting Professor of Mechanical Engineering at the University of Leeds, and Honorary Professor of Mechanical Engineering at the University of Birmingham. He has been awarded the 2010 Sugden Prize for the most significant UK contribution to combustion research and the 2014 SAE Arch T. Colwell Merit Award.

SPEAKERS



RICHARD MILLS
STRATEGY DIRECTOR, BOEING

Richard Mills is responsible for development and implementation of Boeing's business strategy for the UK and Ireland at a corporate level as well playing a leadership role in business unit initiatives. His work has covered evaluating opportunities in core and adjacent markets, supply chain initiatives, university relations strategy and environmental strategy.

Richard also has a pan-European role on environmental policy and strategy. His responsibilities include facilitating the activities of the European section of the Sustainable Aviation Fuel Users Group (SAFUG), an airline-led group focused on accelerating the development and commercialisation of sustainable aviation biofuels. He also helped found the Nordic Initiative for Sustainable Aviation.



RICHARD BRUCE
DIRECTOR, OFFICE OF LOW EMISSIONS VEHICLES (OLEV)

Richard Bruce has been head of OLEV in the UK since 2012. OLEV is a cross-Government team comprising people and funding from the Departments for Transport, Business, Innovation and Skills as well as Energy and Climate Change. OLEV's role is to support the early market for ultra-low emission vehicles, maximising the benefits from this transition for the UK economy and taking forward the Government's policy of reducing transport emissions to address concerns over carbon, air quality and energy security.



ROB WAKELY
**HEAD OF LOW CARBON FUELS DIVISION, ENERGY
TECHNOLOGY AND INTERNATIONAL DIRECTORATE,
DEPARTMENT FOR TRANSPORT (DFT)**

Rob Wakely heads up the Low Carbon Fuels Division in the UK Department for Transport, leading strategy and policy delivery on the EU Renewable Energy and Fuel Quality Directives, and the Renewable Transport Fuels Obligation Unit, which operates the UK biofuels mandate and sustainability compliance. Current strategic and policy work streams include working across Government, with industry and NGOs to plan the UK's biofuels strategy, and encourage the development of advanced biofuels from waste.

SPEAKERS AND CONTRIBUTORS

SPEAKERS



JONATHAN MURRAY
POLICY AND OPERATIONS DIRECTOR,
LOW CARBON VEHICLE PARTNERSHIP (LOWCVP)

Jonathan Murray is an environmental economist with over 20 years' experience working in the automotive and fuel industries, including time with Energy Saving Trust, the Motor Industry Research Association and Total Oil. His experience involves developing policy, designing and implementing programmes to promote markets for environmental vehicles, technologies and fuels. In 2005, Jonathan joined LowCVP. During his time there he has successfully introduced consumer labels, encouraged the introduction of low carbon buses, helped shape policy to support innovation and developed programmes to encourage low carbon commercial vehicles. He is currently supporting the DfT in developing policy to deliver on targets for the Renewable Energy and Fuel Quality Directives by 2020, and policy framework to encourage innovation and deployment of future low carbon fuels and infrastructure.



TIMOTHY WILSON
PRINCIPAL SPECIALIST ENGINEER ON MARINE FUELS,
LUBES AND EXHAUST EMISSIONS, LLOYD'S REGISTER (LR)

Tim Wilson has spent the past 20 years working with Lloyd's Register's Fuel Oil Bunker and Advisory service, after 20 years as a marine engineer. He is currently the Principal Specialist on fuels lubricants and exhaust emissions within the LR Ship Performance Group, focusing on effective fuel management from the bunker manifold to the exhaust stack, evaluating the best approaches to optimising fuel efficiency. This includes the assessment and independent validation of alternative fuels and novel technologies in a company's efforts to achieve environmental compliance on exhaust emissions.

Tim also participated as the Rapporteur for the European Sustainable Shipping Forum (ESSF) Implementation Sub Group; formed for the development of the Sulphur Directive Implementation Act which was published in February 2015.



NILS-OLOF NYLUND
RESEARCH PROFESSOR FOR ENERGY USE IN TRANSPORT
AND ENGINE TECHNOLOGY, VTT TECHNICAL RESEARCH
CENTRE OF FINLAND

Nils-Olof Nylund graduated with a Doctor of Technology degree in Mechanical Engineering (Internal Combustion Engines) from Helsinki University of Technology. His current position is as Research Professor for Energy Use in Transport and Engine Technology at VTT Technical Research Centre of Finland.

Since 1998, he has been either Chairman or Vice Chairman of the IEA Implementing Agreement on Advanced Motor Fuels (AMF). In addition, he also has been the IEA End-Use Working Party (EUWP) Vice Chairman for Transport since 2007.

BOOKING FORM

EVENT CODE: SEM6348

**EARLY BIRD ENDS
4 MARCH 2016**

FUTURE FUELS 2016 AUTOMOBILE, MARINE AND AVIATION

26 April 2016, Institution of Mechanical
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www.imeche.org/futurefuels

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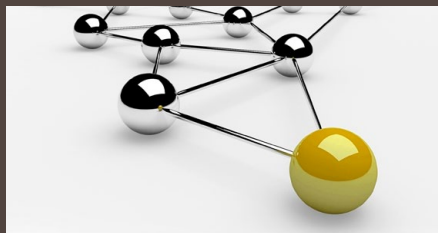
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