

LOW CARBON TRANSPORT: ENGINEERING THE FUELS OF THE FUTURE

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Institution of
**MECHANICAL
ENGINEERS**

9 July 2019
One Birdcage Walk, London

Powertrain Systems
and Fuels Group
Seminar

KEY SPEAKERS INCLUDE:

Tolga Akertek, Plant Manager, Audi e-gas plant,
Audi

Matthew Keenan, Global Technical Expert, Exhaust
Aftertreatment,
Ricardo

Mike Muskett, Distinguished Advisor, Downstream
Technology,
BP

Andy Eastlake, Managing Director,
Low Carbon Vehicle Partnership



SUPPORTING ORGANISATIONS:



EVENT PARTNER:



Book your place at: www.imeche.org/lowcarbon

LOW CARBON TRANSPORT: ENGINEERING THE FUELS OF THE FUTURE

9 July 2019, One Birdcage Walk, London

IN LIGHT OF TIGHTENING EMISSIONS TARGETS, THERE IS AN INCREASING FOCUS FROM GOVERNMENT AND INDUSTRY ON PURE ELECTRIC VEHICLES. HOWEVER, IT IS IMPORTANT FOR INDUSTRY TO SEE THEM AS JUST PART OF THE SOLUTION AND TO LOOK AT THE LANDSCAPE AS A WHOLE BEFORE COMMITTING TO CERTAIN TECHNOLOGIES. AN ALTERNATIVE IS TO CONSIDER LOW CARBON FUELS IN INTERNAL COMBUSTION ENGINES AS BY 2050, A SCENARIO BASED AROUND LOW CARBON LIQUID FUELS COULD POTENTIALLY REDUCE GREENHOUSE GAS (GHG) LIFE-CYCLE EMISSIONS BY 87% OF THEIR 2015 VALUES*.

*("Europe's Clean Mobility Outlook: Scenarios for the EU light-duty vehicle fleet, associated energy needs and emissions", Ricardo Energy & Environment, 6 June 2018)

Address the latest developments in low carbon fuels including biofuels, power to liquid and ammonia so your business can explore how to incorporate them into your power sources. Gain insight into low carbon fuels in use by the automotive and marine sectors to see how challenges are being met. Be part of the discussion about how to overcome the barriers to widespread adoption with key cross-sector players. Join fuel developers, engine developers, fuel technology providers, OEMs, researchers and regulators to discuss how the different parts of the industry can work together to encourage adoption.

The seminar will form part of a two-day fuels-focused event (8-9th July) and is held in collaboration with the Low Carbon Vehicle Partnership (LowCVP). The two events focusing on future fuels will be co-located at One Birdcage Walk. Monday's LowCVP Annual Conference: Future Fuels on the Road to Zero will focus on fuels policy. Tuesday's Low Carbon Transport: Engineering the Fuels of the Future, run by the Institution of Mechanical Engineers, will focus on fuels practice, technology and associated challenges.

KEY PROGRAMME HIGHLIGHTS:

- **E4Tech** provide insights into new biofuel pathways for the biofuels for the future
- **Cardiff University** highlight the importance of ammonia and the development of a green ammonia internal combustion engine (ICE) demonstrator
- **Lloyd's Register** reveal their future plans for decarbonising the shipping industry
- **JCB** present their off highway roadmap to low carbon energy usage

ATTEND THIS SEMINAR TO:

- Learn from pioneers in the low carbon fuels sector including **BP, E4tech, Cardiff University, Audi, JCB** and **Ricardo**
- Stay up-to-date with the latest developments in low carbon fuels including current pathways and production to ensure your processes are cost-effective
- Hear from OEMs as they discuss practical application of low carbon fuels in both passenger and off-highway vehicles
- Gain insight into overcoming the main obstacles for large-scale use of low carbon fuels
- Network with and discuss the future of low carbon transport with OEMs, fuel developers, regulators and consultancies

ORGANISING COMMITTEE:

Powertrain Systems and Fuels Group
Institution of Mechanical Engineers

MEMBER CREDITS:

Penny Atkins, Principal Research Fellow,
University of Brighton

Steve Sapsford, Managing Director,
SCE Ltd.

Roy Horrocks, Supervisor, Dunton Technical Centre,
Ford Motor Company Ltd

Jamie Turner, Professor of Engines and Energy Systems,
University of Bath

Roger Cracknell, Technology Expert – Combustion Chemistry,
Shell Global Solutions (UK)

Rob Morgan, Principal Research Fellow,
University of Brighton

John Williams, Expert Research Technologist (Fuels and Lubricants),
BP

WWW.IMECHE.ORG/LOWCARBON

BOOK YOUR PLACE TODAY

TERMS AND
CONDITIONS
APPLY

PROGRAMME

TUESDAY, 9 JULY 2019

08:30	REGISTRATION AND REFRESHMENTS
09:00	CHAIR'S OPENING REMARKS Penny Atkins, Principal Research Fellow, University of Brighton
09:10 KEYNOTE ADDRESS	FUELLING A LOW CARBON TRANSPORT SYSTEM Andy Eastlake, Managing Director, Low Carbon Vehicle Partnership
DEVELOPMENTS IN ALTERNATIVE FUELS	
09:40	BIOFUELS OF THE FUTURE Jo Howes, Principal Consultant, E4tech
10:05	POWER TO GASEOUS / LIQUID FUELS Speaker to be announced
10:30	QUESTION AND ANSWER SESSION
10:45	NETWORKING REFRESHMENT BREAK
11:15	OVERVIEW OF OTHER ALTERNATIVE FUELS Speaker to be announced
11:40	DEVELOPMENT OF GREEN AMMONIA ICE DEMONSTRATOR: FUTURE POSSIBILITIES Anthony Giles, Research Associate, Cardiff University
12:05	QUESTION AND ANSWER SESSION
12:15	LOW CARBON FUELS MEETING THE CHALLENGES OF CURRENT AND FUTURE POWERTRAINS Matthew Keenan, Global Technical Expert, Exhaust Aftertreatment, Ricardo
12:25 PANEL DISCUSSION	WILL FUTURE FUELS SIMPLY BE DROP IN? Jo Howes, Principal Consultant, E4tech Anthony Giles, Research Associate, Cardiff University Matthew Keenan, Global Technical Expert, Exhaust Aftertreatment, Ricardo <ul style="list-style-type: none">• Can we be focused solely on developing drop in future fuels in order to meet society's requirements?• What are the potential volumes of drop in fuels?• How significant are the compatibility issues between current powertrains and low carbon fuels?
12:50	NETWORKING LUNCH
	AFTERNOON CHAIR Steve Sapsford, Managing Director, SCE Ltd.
OVERCOMING THE CHALLENGES TO SCALE UP PRODUCTION	
13:50	PERSPECTIVES ON FUTURE CO2 ABATEMENT COSTS OF POWER TO FUEL Mike Muskett, Distinguished Advisor, Downstream Technology, BP Richard Pearson, Technical Advisor – Automotive Engineering, BP
BEST PRACTICE APPLICATIONS OF FUELS IN USE	
14:15	AUDI E-GAS: EXPERIENCE AND FUTURE CHALLENGES Tolga Akertek, Plant Manager, Audi e-gas plant, Audi
14:40	OFF-HIGHWAY DIRECTIONS ON LOW CARBON ENERGY SOURCES Alan Tolley, Group Director – Powertrain, JCB
15:05	QUESTION AND ANSWER SESSION
15:20	NETWORKING REFRESHMENT BREAK
15:50	DECARBONISING THE SHIPPING INDUSTRY Edward Fort, Global Head of Engineering Systems, Lloyd's Register
16:15	QUESTION AND ANSWER SESSION
16:20 PANEL DISCUSSION	HOW DO WE ENABLE WIDESPREAD ADOPTION OF LOW CARBON FUELS FROM AN ENGINEERING PERSPECTIVE? Alan Tolley, Group Director – Powertrain, JCB Andy Eastlake, Managing Director, Low Carbon Vehicle Partnership <ul style="list-style-type: none">• How can OEMs work together with fuel developers to enable large scale production and adoption of future fuels?• How can we reduce the cost of producing low carbon fuels to make them commercially viable?• How can we ensure sustainability across fuel manufacture, distribution and dispensing at the volumes required?
16:55	CHAIR'S CLOSING REMARKS
17:00	END OF SEMINAR

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

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

HOW TO BOOK YOUR PLACE

FEES AND CHARGES

Registration fees include entry to the sessions, refreshments and a copy of the conference proceedings.

Delegate Type	EARLY BIRD RATE Until 31 May 2019	STANDARD RATE
Member, Institution of Mechanical Engineers / Supporting Organisation	£260 + VAT = £312	£300 + VAT = £360
Non-member	£340 + VAT = £408	£390 + VAT = £468
Full-time Student/Retired	£100 + VAT = £120	£100 + VAT = £120
Access to sessions from the co-located seminar on Reducing Driving Emissions: Ensuring Compliance with RDE and WLTP	£70 + VAT = £84	£70 + VAT = £84

THREE WAYS TO BOOK

1 online:
www.imeche.org/lowcarbon

2 email:
eventenquiries@imeche.org

3 phone:
+44 (0)20 7973 1251

Please read the information listed below as each booking is subject to the Institution's standard terms and conditions.

CONDITIONS OF BOOKING

Completed application forms should be returned to the address above, along with the correct payment. Attendance at the event will be confirmed on receipt of the full balance. All participants are advised to bring a copy of their confirmation with them on the day, to ensure the fastest possible entry.

SPECIAL REQUIREMENTS

Please inform us of any special requirements, ie dietary or access, on the relevant section of the booking form or email eventenquiries@imeche.org

Cancellation

For a refund (minus £25+VAT admin charge), cancellations must be received at least 30 days prior to the event. Replacement delegates are welcome at any time. The Institution reserves the right to cancel any event. In this case, the full fee will be refunded unless a mutually convenient transfer can be arranged. In the event that the Institution postpones an event for any reason and the delegate is unable or unwilling to attend on the rescheduled date, they will receive a full refund of

the fee paid. The Institution is not responsible for any loss or damage as a result of a substitution, alteration or cancellation/postponement of an event. The Institution shall assume no liability whatsoever if this event is cancelled, rescheduled or postponed due to a fortuitous event, Act of God, unforeseen occurrence or any other event that renders performance of this conference impracticable, illegal or impossible. For the purposes of this clause, a fortuitous event shall include, but not be limited to: war, fire, labour strike, extreme weather or other emergency.

Please note that while speakers and topics were confirmed at the time of publishing, circumstances beyond the control of the organisers may necessitate substitutions, alterations or cancellations of the speakers and/or topics. The Institution reserves the right to alter or modify the advertised speakers and/or topics if necessary without any liability to you whatsoever. Any substitutions or alterations will be updated on the event's webpage as soon as possible.

LIABILITY

The organisers do not accept liability for any injuries or losses of any nature incurred by delegates and/or accompanying persons, nor for loss or damage to their luggage and/or personal belongings.

CONFERENCE VENUE

Institution of Mechanical Engineers
One Birdcage Walk
Westminster
London
SW1H 9JJ

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OTHER EVENTS TO LOOK FOR



REDUCING DRIVING EMISSIONS: ENSURING COMPLIANCE WITH RDE AND WLTP

9 July 2019, London

This seminar will focus on lessons learned to equip you with the knowledge needed for cost-effective and successful testing processes. Hear directly from the Vehicle Certification Agency about requirements laid out in WLTP Act 2 and RDE Package Four to ensure you are compliant. Maximise the chance of testing success of all your models by learning about the latest testing technologies and facilities available.

www.imeche.org/emissions



INTERNAL COMBUSTION ENGINES AND POWERTRAIN SYSTEMS FOR FUTURE TRANSPORT

10-11 December 2019, West Midlands

This conference will not only cover the particular issues for the internal combustion engine market but also reflect the impact of alternative powertrains on the propulsion industry. Join us in December to benefit from the insights and perspectives of engineers, researchers and academics from around the world.

www.imeche.org/icengines

The Institution of Mechanical Engineers organises over 120 events a year, including free-to-attend lectures as well as conferences, seminars, annual luncheons and dinners. Please visit www.imeche.org/events for the complete list of events.

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