

# REDUCING DRIVING EMISSIONS: ENSURING COMPLIANCE WITH RDE AND WLTP

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31 MAY 2019

Institution of  
**MECHANICAL  
ENGINEERS**

9 July 2019  
One Birdcage Walk, London  
Seminar

## KEY SPEAKERS INCLUDE:

Duncan Robinson-Slater, Principal Engineer,  
**Vehicle Certification Agency (VCA) UK**

Hu Li, Associate Professor, Deputy Leader of the Clean  
Combustion Research Group, School of Chemical and  
Process Engineering,  
**University of Leeds**

Graziano Malivindi, Principal Emissions and Efficiency  
Engineer,  
**McLaren Automotive**

Simon Williams, Principal Calibration Engineer  
**MAHLE Powertrain**



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# REDUCING DRIVING EMISSIONS: ENSURING COMPLIANCE WITH RDE AND WLTP

9 July 2019, One Birdcage Walk, London

**THE INDUSTRY IS TWO YEARS ON FROM THE IMPLEMENTATION OF THE WORLDWIDE LIGHT VEHICLE TEST PROCEDURE (WLTP) AND THE REAL DRIVING EMISSIONS (RDE) TEST PROCEDURE AND WITH SEVERAL ADAPTATIONS SINCE, COMPANIES ARE STILL FACING CHALLENGES WITH THE TESTING PROCESSES.**

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.

Network with testing, design and performance engineers as well as researchers and specialists in emissions testing.

## KEY PROGRAMME HIGHLIGHTS:

- **Vehicle Certification Agency (VCA) UK** covers the current status of RDE Package Four and the requirements to meet this standard
- **Volvo Group** provide insights into their use of VECTO, the new simulation tool to measure CO2 emissions from heavy duty vehicles
- **McLaren Automotive** share lessons learned in adapting their calibration systems for carrying out RDE testing
- **HORIBA MIRA** reveal how they manage the efficiency challenges of operating a real driving emissions test service
- **Ricardo Energy & Environment** discuss particle number measurement and correct calibration of measurement systems

## ATTEND THIS SEMINAR TO:

- Hear from experts in emissions testing including Vehicle Certification Agency (VCA) UK, McLaren Automotive, HORIBA MIRA, Volvo Group, MAHLE Powertrain, Ricardo Energy & Environment, University of Bath and Cambustion
- Mitigate the risk of testing failure for your vehicles by learning best practice in preparing for and carrying out emissions testing
- Gain insight into the latest technology and testing techniques to improve the efficiency of your testing procedures
- Prepare for testing cars of the future with the growth in hybrid and electric vehicle adoption leading to further regulatory changes
- Discuss management of emissions testing challenges with your peers and industry leaders from OEMs, testing facilities, regulators, solution providers and academic institutions

## WITH THANKS TO:

Paul Markwick, Managing Director of Operations,  
**The Manufacturing Technology Centre**

Steve Mann, Real World Drive Emissions (RDE)  
& Calibration Leader,  
**HORIBA MIRA**

## DELEGATE FEEDBACK FROM THE PREVIOUS EVENT:

“““

*Very informative industry and legislator perspectives on the upcoming RDE regulations, and the challenges that the automotive industry faces to meet these from a testing and compliance perspective.”*

Changan UK Research and Development

“““

*The RDE seminar gave a useful insight into the challenges facing the industry that are posed by RDE.”*

Shell Global Solutions

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# PROGRAMME

| <b>TUESDAY, 9 JULY 2019</b>      |   |
|----------------------------------|---|
| 08:30                            | REGISTRATION AND REFRESHMENTS   |
| 09:00                            | <b>CHAIR'S OPENING REMARKS</b><br>Paul Markwick, Managing Director of Operations, The Manufacturing Centre  |
|                                  | <b>CURRENT REQUIREMENTS OF WLTP AND RDE REGULATION AND STATUS OF EMISSIONS</b>  |
| 09:10<br><b>KEYNOTE ADDRESS</b>  | <b>RDE PACKAGE 4: AN OVERVIEW</b><br>Duncan Robinson-Slater, Principal Engineer, Vehicle Certification Agency (VCA) UK  |
| 09:40                            | <b>THE SIGNIFICANCE OF PARTICLE NUMBER AUTOMOTIVE EMISSIONS (WLTP AND RDE)</b><br>David Sykes, Senior Consultant – Airborne Particle Specialist, Ricardo Energy & Environment   |
| 10:05                            | <b>EURO6D-TEMP TRANSIENT EMISSIONS FROM A VERY CLEAN DIESEL PASSENGER CAR</b><br>Mark Peckham, Director, Cambustion   |
| 10:30                            | <b>QUESTION AND ANSWER SESSION</b>  |
| 10:45                            | NETWORKING REFRESHMENT BREAK  |
|                                  | <b>OVERCOMING THE CHALLENGES IN CARRYING OUT TESTING</b>  |
| 11:15                            | <b>PRACTICALITY, TEST SUCCESS AND EFFICIENCY CHALLENGES OF OPERATING A REAL DRIVING EMISSIONS TEST SERVICE</b><br>Tom Moakes, Senior Engineer – RDE & PEMS, HORIBA MIRA   |
| 11:40                            | <b>WLTP AND RDE INTRODUCTION FROM THE PERSPECTIVE OF A HIGH PERFORMANCE VEHICLES MANUFACTURER</b><br>Graziano Malivindi, Principal Emissions & Efficiency Engineer, McLaren Automotive  |
| 12:05                            | <b>THE USE OF FAST RESPONSE GAS ANALYSERS IN DEVELOPMENT FOR RDE TESTING</b><br>Edward Chappell, Research Fellow – Department of Mechanical Engineering, University of Bath   |
| 12:30                            | <b>QUESTION AND ANSWER SESSION</b>  |
| 12:45                            | NETWORKING LUNCH  |
|                                  | <b>CUTTING-EDGE MEASUREMENT TECHNIQUES AND TECHNOLOGIES</b>   |
| 13:45                            | <b>INCREASING OPERATING EFFICIENCY AND RAISING CO2 AWARENESS FOR LGVS WITH VECTO</b><br>Mark Collins, Sales Engineer, Volvo Group   |
| 14:10                            | <b>USING CONVERGE TO SUPPORT EMISSIONS PREDICTION</b><br>Chris Riley, Business Development Manager (Europe), Convergent Science   |
|                                  | <b>FUTURE VEHICLE TESTING</b>   |
| 14:35                            | <b>FUTURE RDE DEVELOPMENT METHODS</b><br>Simon Williams, Principal Calibration Engineer, MAHLE Powertrain   |
| 15:00                            | <b>QUESTION AND ANSWER SESSION</b>  |
| 15:15                            | NETWORKING REFRESHMENT BREAK  |
| 15:45                            | <b>PARTICLE NUMBER EMISSIONS AND SIZE DISTRIBUTION OF A HYBRID CAR FROM REAL WORLD DRIVING AND WLTP</b><br>Hu Li, Associate Professor, Deputy Leader of the Clean Combustion Research Group and Low Carbon Research Group, School of Chemical and Process Engineering, The University of Leeds  |
| 16:10                            | <b>QUESTION AND ANSWER SESSION</b>  |
| 16:15<br><b>PANEL DISCUSSION</b> | <b>ACHIEVING CONSISTENCY ACROSS THE INDUSTRY</b><br>Tom Moakes, Senior Engineer - RDE & PEMS, HORIBA MIRA<br>Duncan Robinson-Slater, Principal Engineer, Vehicle Certification Agency (VCA) UK<br>David Sykes, Senior Consultant - Airborne Particle Specialist, Ricardo Energy & Environment <ul style="list-style-type: none"><li>• How can we ensure all testing is carried out fairly and correctly?</li><li>• How can the industry manage the bottle-neck in updating line-ups with the added complexity of the RDE test?</li><li>• How will the UK industry tie in with the regulation across the world to ensure homogenous systems?</li></ul> |
| 16:55                            | <b>CHAIR'S CLOSING REMARKS</b>  |
| 17:00                            | END OF SEMINAR  |

**For the most up-to-date and detailed programme for the event, please visit:**  
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- This programme is subject to change.
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Registration fees include entry to the sessions, refreshments and a copy of the conference proceedings.

| Delegate Type   | EARLY BIRD RATE<br>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 |
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### CONFERENCE VENUE

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9 July 2019, London

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 engineering challenges are being met. Discuss how to overcome the barriers to widespread adoption with key cross-sector players.

[www.imeche.org/lowcarbon](http://www.imeche.org/lowcarbon)



### INTERNAL COMBUSTION ENGINES AND POWERTRAIN SYSTEMS FOR FUTURE TRANSPORT

10-11 December 2019, Birmingham

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.

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