

# **Decarbonising Heavy Duty Internal Combustion Engines - Challenges and Opportunities**

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## **Abstract**

Battery electrified power is predicted to become the dominant mode of propulsion in future light duty transport. For sustainable heavy duty applications, challenges remain around practical range, payload and total cost. Currently there is no economically viable single solution. For commercial transport and power generation applications the problem is compounded by long service lives (e.g. several decades). Fuels such as green Ammonia and Hydrogen have excellent potential to play a significant role as sustainable future fuels in both retrofitted and advanced engines. However, significant uncertainties remain around safe and effective end use, with these unknowns spanning across fundamental understanding, effective application and acceptance. This talk will summarise these challenges, set around disruptive engine concepts under development at Nottingham and capable of operating with high thermal efficiency and ultra-low NOx.