

Kiwa Hydrogen Commercial Training Course

Learning Outcomes

- Understand the challenge of decarbonising energy in the UK
 - Government objectives for decarbonisation
 - Breakdown of energy use and seasonality of demand
 - Energy challenges including the trilemma
 - The options for heat (gas, electricity, biomass, etc.)
- Know the environmental benefits of using hydrogen as a fuel
 - Motivation for using hydrogen
 - Benefits of using hydrogen as a fuel
 - Overview of current hydrogen research
- Know the global market potential for hydrogen
 - Summary of national and EU hydrogen strategies and funding plans
 - Market development activities including the development of industry standards, market regulation and market support mechanisms
 - Overview of funding opportunities and planned infrastructure projects
 - Overview of cost drivers and potential for cost reduction
- Know the principles of hydrogen combustion and safety issues relating to hydrogen
 - General principles of combustion
 - Similarities and differences with respect to fire, explosion, asphyxiation and CO poisoning
 - A systematic approach to calculating risk
 - Leak detection
 - Flame detection
- Understand the impact of hydrogen on legislation and standards
 - Primary legislation
 - Secondary legislation
 - European legislation
 - Industry standards
- Know the fundamental principles of hydrogen production
 - Future pathways for hydrogen production
 - The scale of different production technologies
- Know how hydrogen varies with storage scale
 - Inter-seasonal
 - Underground storage
 - High pressure storage
 - Sizing considerations
- Know how to transport hydrogen
 - Transmission
 - Distribution using the existing gas grid
 - Discrete transport
 - Network reinforcement and long-term options
- Know the principal factors relating to appliance modification for conversion to hydrogen
 - Use in the home, commerce, industry and transport
 - Hydrogen metering
 - Comparison of 100% hydrogen vs. hydrogen blending

- Know the principal economic factors of hydrogen production and use
 - Social implications of hydrogen
 - Indicative costs
- Know the risks and opportunities that hydrogen represents to companies looking to decarbonise their operations
 - What are the risks to a business's operations of hydrogen being blended into their natural gas supplies?
 - What hydrogen ready products are already available or currently being developed?
 - What product development opportunities might the development of hydrogen production, storage and distribution infrastructure present?