Hydrogen Awareness Training

Course Content

The course covers four key themes relevant to Hydrogen and the UK Natural Gas Network which will give an awareness of where the future of the gas network is heading and how it will develop over time.

The course starts with an introduction to the challenge of decarbonisation highlighting where the UK is currently and where it needs to end up. A focus on the challenge of decarbonising heat will also be highlighted and the seasonal variations will be discussed. This introduction is designed to give the candidates the wider context for why we are discussing hydrogen and will introduce to them the main advantages of hydrogen allowing the candidates to discuss their own knowledge on the topic to develop this understanding. The technology options for utilising hydrogen will be introduced highlighting how hydrogen can be utilised. A presentation of a complete hydrogen gas network from hydrogen production through to the end user will be presented which will set up the other key themes which will be delivered in the course.

An important piece of developing a greater awareness of hydrogen is an understanding of its key differences and similarities to natural gas. The second theme will develop an understanding of the properties of hydrogen in the context of natural gas and the current gas network. The physical properties of hydrogen will be discussed with the candidates and this will also allow them to ask questions and to dispel often held misunderstandings about hydrogen. The second half of the presentation of this theme will discuss how these properties impact the operation of the transmission of gas in gas networks and the ways in which hydrogen influences appliance design.

The third theme covered in the course will address the gas network and will begin by outlining the projects that are currently underway in the UK and internationally. This will introduce the candidates to the cutting edge of hydrogen gas network development and will give them context for the information that follows. The focus of this theme will be the production and distribution of hydrogen which will highlight the key infrastructure requirements for hydrogen networks. Different models for production will be highlighted and the challenges of energy storage will be detailed which will link back to slides presented in the introduction. Carbon storage will also be discussed and the carbon intensity of the energy which produces hydrogen. The final part of this section will be a discussion on hydrogen infrastructure rollout and the conversion process.

The final theme will be hydrogen in the home which will be used to provide the key details of how the introduction of hydrogen will impact installation in domestic properties. There are several topic areas covered here including:

- Appliance design
- Meter installations
- Leaks and gas tightness
- Safety of domestic installations
- Additional safety equipment

The final part of the course will allow for questions which are of importance to the candidates to be addressed. As they have experience of domestic and commercial settings it is expected that they may want to further understand specifics about how hydrogen will impact their job.

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