

Summary for UK policy makers- current priorities of the UNITED KINGDOM HYDROGEN ASSOCIATION

The UKHA is an industry association whose mission is to foster the development and use of hydrogen technologies and to promote the use of hydrogen as an energy carrier in the United Kingdom.

The Role of Hydrogen

This is the century that we must tackle Climate Change and still meet the energy needs of the UK economy. Low carbon and sustainable energy solutions are required. The UKHA believes that hydrogen can play an essential role in achieving sustainable supply options and a low carbon future.

The Commitment of the United Kingdom Hydrogen Association

A transition to a future low-carbon energy economy requires commitment from many stakeholders. The membership of the United Kingdom Hydrogen Association aims to encompass those stakeholders, representing companies, organisations and individuals with a commitment to exploring opportunities for hydrogen energy in the United Kingdom. The UKHA supports all hydrogen-energy stakeholders, including large multi-national companies, UK-based businesses and SMEs, research organisations and others involved in the production, storage, delivery, or use of hydrogen or hydrogen technologies that include hydrogen-rich feedstocks and hydrogen-based solutions. The UKHA is committed to:

- Defining hydrogen's role in a sustainable, low-carbon energy future in the UK
- Facilitating development of UK policy initiatives by providing authoritative advice to government on hydrogen technologies, benefits to the UK, industry viewpoint and proposed actions
- Advocating strongly for a positive social, political and economic environment for the development of hydrogen's role in a low-carbon energy economy in the UK
- Forming a focal point for the shared interests of all stakeholders
- Providing a voice to answer concerns and issues about hydrogen energy
- Giving guidance on research and deployment priorities
- Sharing up-to-date information and facilitating knowledge transfer about hydrogen energy technologies, including; technical data, case studies, information on past and existing demonstrations, safety information such as recommended practices, standards, and regulations that apply to hydrogen energy systems, and information on the social and economic factors associated with hydrogen energy in the UK
- Promoting the development of best practise and its adoption
- Providing a central focal point to assist policy makers in the UK to support hydrogen energy research, development, and deployment
- Influencing the impact of EU policies on the UK
- Provide a voice at the European Hydrogen Association and other international hydrogen forums to ensure UK interests are represented
- Representing the UK hydrogen industry in European and International organisations and initiatives.
- Raising awareness of the technologies and capabilities of those actively engaged in hydrogen energy technologies within the UK and internationally

Hydrogen energy technologies are commercially available today in niche applications where hydrogen's unique benefits bring special value. The UKHA believes that the path to more wide-scale commercialisation of hydrogen energy systems will only be successful by working together in an industry/ government partnership. Neither group can succeed alone.

The UKHA will continue to share its vision of an energy future in the UK through the sustainable utilisation of hydrogen. This vision, which represents a commitment by the UKHA, can help shape national and international energy policy, thus paving the way to hydrogen's key role in a global low-carbon energy economy.

The Key Drivers for Hydrogen in the UK

Support for hydrogen from policy makers, industry and the public is crucial to the health of the UK's environment, its energy system and its industry. Hydrogen energy can play a key role in addressing:

- Climate Change
- Energy Diversity
- Energy Efficiency
- Security of Supply
- Sustainability

Working with the UK Government – the priorities

1. Support development of effective UK Government policies. The 2003 Energy White Paper and the 2006 Energy Review are cognisant of the use of hydrogen, and set appropriate and worthwhile aims for the UK over the long term. The UKHA supports these high level aims, however, UK policy needs to be updated in future as some assumptions that underpinned previous reports are no longer valid. The UKHA is well positioned to assist with understanding the nuances of complex dependencies in an ever-changing energy landscape. Hydrogen can be produced from all energy resources, provide a common transport fuel throughout the country and partner electricity as an energy vector to match supply and demand. Further work should be planned to follow the current energy review.

2. Obtain and recognise the benefits from the use of hydrogen. The proposed Hydrogen Co-ordination Unit is needed to highlight the benefits of low carbon hydrogen, in research through to commercial use, across all initiatives enacting UK policy. In addition, benefits should be promoted at the large scale (e.g., hydrogen from pre-combustion carbon capture and storage, off-peak and grid balancing of national grid electricity, storage and supply of low carbon energy for heat and particularly transport applications), as well as the small scale (e.g., community and distributed wind/tidal/wave-hydrogen-fuel cell systems, standby and mobile and auxiliary power).

3. Support for demonstrations. A full range of joint government/industry activities is required to demonstrate new UK capability in hydrogen. If not primarily driven by hydrogen, the hydrogen vector should be described and evaluated. All current and planned support mechanisms should be considered, from local to international levels.

4. Support for commercialisation. A number of economic tools are recommended to aid market penetration of hydrogen energy technologies, including:

- Removing remaining barriers to adoption for market segments closest to commercial viability
- Regulation and procurement policies to increase demand and/or reduce demand risk
- Ensuring that the low-carbon route is also the most economical route for the UK
- Ensuring tax incentives are available for technology development and early commercialisation phases
- Providing incentives to early-adopters as technologies become available
- Enabling credits with emission trading schemes

5. Government use of low carbon hydrogen. The UKHA recommends that, when government sets targets for efficient and sustainable use of energy, the use of hydrogen to achieve those aims is tracked and reported.

6. Need for appropriate regulation. The UKHA recognises the need for funded work on safety, codes and standards and education in support of hydrogen production, storage, and consumption. The Government needs to provide implementation training to local/regional governments and reduce the planning barriers for the use of hydrogen.

7. Public education. The UKHA will support leadership from Government to provide, through established routes, general and specific information on hydrogen to inform stakeholder decisions and public perceptions.

8. Support for transition pathways. The UKHA strongly supports technological and economic development of sustainable energy sources. The UKHA further envisages a growing portion of future hydrogen production to come from electrolysis used in the management of variable renewable energy output. Ultimately, society and the market will determine the energy mix consistent with its resources and needs. The near-term commercialisation of hydrogen internal combustion engine vehicles and hydrogen/natural gas or hydrogen/electric hybrids allows a platform for hydrogen energy technology commercialisation. When fuel cell technology is ready for mass commercialisation, it can find its place faster with a hydrogen infrastructure already in place. Government policies should consider transition strategies.

9. The UK Economy. The UK economy will benefit from early experiences with hydrogen energy projects. The UK Government should support opportunities for UK organisations to participate in research projects, demonstrations, and the building of global partnerships for deployment. This will lead to permanent scientific and industrial jobs, expertise, and business contracts that will have a positive impact on the UK economy, as well as regional economies. Conversely, failing to engage proactively may lead to UK organisations being left behind economically and environmentally.