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# ADE Response | Draft Hydrogen Action Plan | 18 January 2022

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## Introduction

The ADE is the UK's leading decentralised energy advocate, focussed on creating a more cost effective, efficient and user-led energy system. The ADE has more than 140 members active across a range of technologies, they include both the providers and the users of energy equipment and services. Our members have particular expertise in heat networks, combined heat and power, demand side energy services including demand response and storage, and energy efficiency.

## Summary

The ADE supports the direction of this draft plan, although its scope appears very broad, with many of the specific details not yet finalised. While we applaud the ambition of 5GW (matching the 5GW target for the whole of the UK) the strategy does not yet provide sufficient policy detail on achieving this and given the nascent state of the hydrogen industry currently, stronger implementation of rolling out infrastructure will be necessary to demonstrate the feasibility of this. We would also recommend prioritising the most efficient use of hydrogen for hard-to-decarbonise areas, with a clear winner under this strategy being fuel switching Scotland's industrial CHP units.

## Consultation Questions and responses

### Draft Action Plan

1) **To what extent do you agree with the roles that hydrogen may play in our future energy mix and the pace of hydrogen uptake as set out in the Hydrogen Economy: route map to 2030 and 2045?**

We consider that hydrogen is most likely to play a role in the decarbonisation of industrial clusters. This is in line with the Scottish Government Hydrogen Policy Statement (2020) and a 'hydrogen hubs' approach as set out in the strategy.

The pace of hydrogen uptake set out in this strategy is ambitious, and to achieve such growth in the Scottish hydrogen economy we will need to see more detailed, structured strategies and plans, with clear links between plans, actions, and desired outcomes over time. We would prioritise areas where no reasonable alternative decarbonisation pathways exist or are likely at scale. Decarbonisation of Combined Heat and Power (CHP) units is likely to be a clear priority here, as it is highly efficient use of a decarbonised fuel, and can deliver hydrogen savings compared to less efficient uses.

2) **What are your views on the actions themes and key actions identified to support the development of the hydrogen economy over the next 5 years?**

The key actions identified in this strategy reflect the fact that it is very early stages for a Scottish hydrogen economy, with substantial focus on building the evidence base for hydrogen, commitments to undertake reviews and publish findings, and establishing institutional structures and collaborative fora. As mentioned in response to Q1, more detail, structure and clear links from plans to actions to outcomes, over time, will be required to deliver on ambitions.

The six action themes appear sensible (upscaling production, development of domestic market, hydrogen integration in the energy system, supply chain and workforce development, international collaboration and innovation and research together capture key action areas that will need to come together to facilitate the growth of a Scottish hydrogen economy).

Upscaling production

We agree with the approach to integrate hydrogen production with onshore and offshore wind development.

The ADE strongly welcome collaboration between the Scottish and UK Governments on a Hydrogen Standard. Given cross border trading of hydrogen will increase in accordance with the growth of the sector, any divergences from the UK and European markets will create trade barriers and inefficiencies that will affect hydrogen rollout. It is therefore critically important that Scottish and UK standards both align and are sufficiently low carbon. For example, not taking into account carbon leakage in transfer of natural gas for blue hydrogen is likely to be insufficiently low carbon.

Development of domestic market

The strategy appears to emphasise action around hydrogen for transport in particular, and hydrogen for heating. While action 11 does address industrial decarbonisation, given the likely role of hydrogen for industrial decarbonisation, and the potential of industrial energy use being an important source of demand for hydrogen, we would expect to see greater emphasis in a hydrogen strategy on hydrogen for industrial decarbonisation.

Hydrogen integration in the energy system

The ADE strongly agree with the importance of understanding how hydrogen can be integrated in the wider energy system and how benefits can be maximised and welcome the intent to work with the UK Government and Ofgem in this regard.

Supply chain and workforce development

Supply chain growth and skills development is and will be a challenge across low-carbon/decarbonisation sectors; taking early steps to develop and encourage uptake of training/education in the hydrogen sector will be important to support future growth of the sector.

International collaboration

The ADE support the focus on establishing early partnerships internationally to create opportunities for Scottish hydrogen export.

### Innovation and research

We agree that funding for innovation and research, fora for knowledge exchange and collaboration and support for multi-national collaboration are important to underpin the growth of a hydrogen economy.

- 3) **In your view, is there any further action that we, or other key organisations (please specify), can take to maximise the positive impacts and minimise negative ones on people, communities and businesses in Scotland in support of a just transition to net zero?**

Alongside strategies to support the growth of a Scottish hydrogen economy, it will be important to ensure sufficient focus is directed at decarbonisation outside of hydrogen hubs, and that costs/benefits of decarbonisation are distributed fairly across different decarbonisation pathways.

While the strategy does mention training and education (action 25) and awareness raising around opportunities for the oil and gas supply chain to move into the hydrogen sector, this is an important area, which will need sufficient concrete plans to support the retraining of members of the oil and gas industry to build the capabilities to take advantage of new opportunities in the hydrogen sector. This will be key to ensuring that a hydrogen economy supports a just transition.

- 4) **Are there further actions that could be taken by government or industry that you think would drive a reduction in the cost of hydrogen? Please provide evidence to support any suggestions.**

We see the UK's hydrogen business model as the primary mechanism for reducing hydrogen costs. However, Scotland can go further and faster than the rest of the UK by supplementing areas of hydrogen infrastructure such as CAPEX costs. Please also refer to our answer to question 7. As set out in the strategy, capitalising on cheap electricity from wind energy will be key in driving down the cost of hydrogen production in Scotland.

- 5) **What are your views on the funding principles and scope of the Emerging Energy Technologies Fund? In your view, are there any eligibility and project assessment criteria we should consider as part of the Emerging Energy Technologies Fund?**

We support the principle of the fund to support regional renewable hydrogen production linked to demand cases, and would welcome further detail on how the EETF will consider links between hydrogen production projects and demand. It is not clear from the definition of the scope of the programme whether/how this link will be embedded.

We strongly agree with the scope of the programme to sit as complementary to the UK Government Net Zero Hydrogen Fund, and encourage continued interaction with the UK Government to ensure complementarity.

- 6) **In your view, what should be the priority areas of focus for the Hydrogen Innovation Fund over the next 5 years?**

Priority areas for the Hydrogen Innovation Fund should include emphasis on cost reductions and reducing the cost of hydrogen infrastructure. This can also include an emphasis on the supply side, with funding going towards demonstrator projects on fuel switching CHP units to hydrogen and use of hydrogen for industrial scale boilers. As per the

UK hydrogen strategy and the Climate Change Committee's advice, the iron and steel sector is also a priority use of hydrogen fuel which should be investigated.

7) **What are your views on how we can use Scottish Government funding to leverage and encourage private sector and other forms of investment?**

The UK hydrogen business model mechanism (with inspiration from the Contracts for Difference model for renewable energy) offers a good mechanism through which to encourage investment. While we foresee this being the primary mechanism for funding large scale hydrogen projects in future, the Scottish government can provide additional grant funding for CAPEX costs of new infrastructure, and gain a competitive advantage within the UK by doing so.

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