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Dear Colleague,

## Review of Electricity Market Arrangements

I am writing on behalf of the UK Hydrogen and Fuel Cell Association (UK HFCA) and in response to your current consultation the Review of Electricity Market Arrangements.

The UK HFCA is the leading pan-UK trade body in the hydrogen energy sector, with a Mission to support the growth of our members and the sector, and to ensure that the right policy framework is in place. Our 100 plus member companies represent over 200,000 employees globally, with combined revenues over £400 billion, and cover the entire value chain from raw material sourcing, to supply chain and components, financing, professional services, B2B and consumer facing solutions.

Hydrogen will play a substantial role in all aspects of energy, and will make an essential contribution to the decarbonisation of the UK's electricity system through the deployment and operation of long duration hydrogen storage and the operational flexibility of electrolysers.

This response from the UK HFCA covers the following questions:

1. Do you agree with the vision for the electricity system we have presented?
14. Do you agree that we should continue to consider a split wholesale market?
40. Do you agree we should continue to consider each of these options (an optimised Capacity Market, running flexibility-specific auctions, and introducing multipliers to the clearing price for particular flexible attributes) for reforming the Capacity Market?

### ***Question 1. Do you agree with the vision for the electricity system we have presented?***

Yes, the UK HFCA agrees with the notion that the current electrolytic allocation market is unsuitable for achieving a fully decarbonised and cost-effective electricity system by 2035 and is broadly supportive of the proposed vision for the electricity system of the future. However, this vision understates the role and importance of hydrogen in the electricity system as a key low-carbon flexibility solution. The recent BEIS report on the benefits of long-duration electricity storage<sup>1</sup> states that as our reliance on renewables grows, we will see an increasingly volatile pattern of residual demand. This report also observes that the UK's electricity system could expect prolonged periods of excess or shortfalls in renewable energy output, where the UK could require up to 17 TWh of hydrogen

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<sup>1</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1095997/benefits-long-duration-electricity-storage.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1095997/benefits-long-duration-electricity-storage.pdf)

storage underground. Consequently, we would expect to see the vision include mechanisms to support the build out of this long duration storage, where underground hydrogen storage, hydrogen gas turbines and fuel cells are likely to play a key role in the delivery of electricity to consumers at time of need.

***Question 14. Do you agree that we should continue to consider a split wholesale market?***

The UK HFCA supports any measures that can be clearly demonstrated to bring down the cost of renewables. Electrolytic hydrogen production which adheres to the Low Carbon Hydrogen Standard requires ready access to low cost and low carbon electricity. Beyond that, electrolytic hydrogen production can be intermittent or consistent, and to realise its full potential as a flexibility asset, hydrogen storage needs to be incorporated into any designs going forward.

***Question 40. Do you agree we should continue to consider each of these options (an optimised Capacity Market, running flexibility-specific auctions, and introducing multipliers to the clearing price for particular flexible attributes) for reforming the Capacity Market?***

Long duration storage is a key pillar of hydrogen's offering to the electricity market, and long duration storage is an important balancing mechanism for the future capacity market. As more renewables come online and more energy demand transitions to electricity, the UK's seasonal balancing requirements will increase and any reformed capacity market must address this. The BEIS report on long duration electricity storage<sup>2</sup> concludes that the implementation of hydrogen storage could reduce net zero system costs by £13-24bn. Incentives for long duration storage providers will be required in the reformed capacity market to realise this system cost saving. We recommend that consideration should be given to making long duration storage providers eligible for the capacity payment which electricity generators currently receive.

In our current market, wind farms receive a payment to be curtailed; with long duration storage, this electricity can be utilised by deploying preferably co-located electrolytic hydrogen production with the payment transferred to the long duration storage provider. Another area of concern is non-commodity costs, such as green levies, which are paid by the end user to cover the costs of various funding mechanisms for green electricity. We consider that hydrogen storage should not be included in non-commodity cost schemes as it is not the end user of electricity. Without financial incentives to provide long duration storage to the market, it will be too economically challenging for the private sector to undertake.

The proposal for specific flexibility auctions is supported by the UK HFCA. More specifically, we welcome the proposal to include location as a valued flexibility characteristic. Rewarding project owners for operating a long duration storage asset in certain locations will help enable the UK to decarbonise all regions of the country.

The UK HFCA would welcome the opportunity to discuss our recommendations further.

Kind Regards,



**Celia Greaves**

**CEO**

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<sup>2</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1095997/benefits-long-duration-electricity-storage.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1095997/benefits-long-duration-electricity-storage.pdf)