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Response to: 'Hydrogen development in Wales' ***Baselining report into hydrogen activities and expertise in Wales***

April 6, 2021

Uniper

Uniper is an international energy company with around 12,000 employees in more than 40 countries. The company plans to make its power generation CO2-neutral in Europe by 2035. With about 35 GW of installed generation capacity, Uniper is among the largest global power generators. Its main activities include power generation in Europe and Russia as well as global energy trading, including a diversified gas portfolio that makes Uniper one of Europe's leading gas companies. In 2020, Uniper had a gas turnover of more than 220 billion cubic metres. Uniper is also a reliable partner for municipalities, public utilities, and industrial companies for developing and implementing innovative, CO2-reducing solutions on their way to decarbonizing their activities. As a pioneer in the field of hydrogen, Uniper is active worldwide along the entire value chain and is implementing projects to make hydrogen usable as a mainstay of energy supply.

The company is headquartered in Düsseldorf and currently the third-largest listed German utility. Together with its main shareholder, Fortum, Uniper is also the third-largest producer of CO2-free energy in Europe.

In the UK, Uniper operates a flexible generation portfolio of seven power stations capable of powering around six million homes, and a fast-cycle gas storage facility. A broad range of commercial activities is offered through the Engineering Services division, while the Uniper Engineering Academy delivers high-quality technical training and government-accredited apprenticeship programmes for the utility, manufacturing and heavy industry sectors.

In North Wales we own and operate Connah's Quay Power Station, a 1,380MW combined cycle gas turbine which provides dispatchable, flexible power generation.

Uniper CCUS and Hydrogen

Uniper is investigating the feasibility of CCUS, hydrogen fuel switching, and other decarbonisation options for the UK fleet. Uniper is developing options for low carbon hydrogen production both by electrolysis and gas reformation with CCS at our Connah's Quay site in North Wales, both for local use and to connect to the Hynet North West infrastructure.

Consultation Response

We have set out our answers to the questions below. Our views in summary:

- There is value in Welsh government developing a hydrogen strategy for Wales. It could be more ambitious than this pathway and have greater focus on the longer term.

- Welsh government should develop and support activities that will create reliable and steady demand for low carbon hydrogen, enable the commercial production of low carbon hydrogen, and demonstrate clear and lasting commitment to establishing a low carbon hydrogen economy in Wales.

Consultation questions:

1. **Public and private sector representatives are developing a hydrogen pathway for Wales based on evidence that hydrogen will be required to play a part in the future energy mix if we are to meet our climate change aspirations. Do you agree this activity is needed to ensure Wales is well positioned to take advantage of potential opportunities arising from use of hydrogen? If not, why? Do you have any evidence to support these views?**

We agree that there is activity that the Welsh government can usefully lead on, in anticipation of a UK hydrogen strategy. Development has to be industry/private sector led but enabled by public sector support. This includes stimulating demand and demonstrating commitment to low carbon hydrogen-based solutions through use of public funding / public resources, and place-based support for hydrogen in industry.

2. **Why are you supportive/not supportive of Wales pursuing hydrogen opportunities? If supportive, what actions can you / your organization, take to contribute towards the development of the hydrogen sector in Wales (and under what conditions)?**

Uniper's Connah's Quay location is well positioned for large scale hydrogen production, which can be enabled by physical access to low carbon power through the electrical infrastructure at the site, as well as the proposed HyNet CO_2 transport and storage system that would run past Connah's Quay. To allow production and distribution of hydrogen at large scale in North East Wales it will be essential to bring hydrogen pipeline infrastructure to Deeside and Connah's Quay, both to export the hydrogen produced on site and ensure North Wales benefits from wider sources of hydrogen. In addition, the interconnected infrastructure including storage would ensure a more resilient supply.

We have been attending and contributing at the Welsh Hydrogen Reference Group to support the development of Hydrogen in Wales. We are partnered with the Net Zero North West cluster, where we are contributing our technical and strategic expertise to

support the development of potential decarbonisation pathways for North West England and North Wales. We are also exploring the business case for the production of green hydrogen from renewable power at our Connah's Quay location, and are working with the 'Deeside Hydrogen Hub' project team to consider the potential for us to provide low carbon hydrogen as part of their plans to decarbonise local public transport through hydrogen fuel cell technology.

3. **Do you have any evidence on the best sources of energy for low carbon / renewable hydrogen production? Should Wales seek to generate hydrogen within the country or seek import opportunities, or pursue both options?**

Wales has considerable opportunity to produce green hydrogen from wind and water resources; existing, planned or potential.

The interconnector with Ireland and the Western HVDC link cable between Hunterston in Scotland and Deeside, linking in through the Connah's Quay Grid Substation, also provide physical access to low carbon power to enable green hydrogen production using less local renewable sources but contributing to grid stability services.

There is considerable potential for low carbon hydrogen production in North East Wales, which could bring additional benefits in terms of investment, employment and skills. Potential carbon storage in the Liverpool Bay fields, proposed by the HyNet project, provides the opportunity for large scale blue hydrogen production using natural gas reformation with CCS. Exploring import/export potential between North West England and North East Wales would support robust supply/demand scenarios and security of supply.

4. **In your view, does the proposed hydrogen pathway complement ongoing and planned hydrogen initiatives across the UK? What other actions should be considered in the hydrogen pathway that would further distinguish Wales, or support other UK activities? Do you have any evidence to support these views which you can share?**

The transport sector initiatives (buses, fuel cell vehicles, trains) are broadly aligned with wider UK initiatives and could support green hydrogen production projects in Wales. Greater clarity is needed on the future trajectory and certainty of demand to give sufficient visibility and confidence in scalable green hydrogen production projects, but the pathway is a good start to this. Having at least one 10MW+ green H2 production project is a good initial target that would support a hub distribution approach to hydrogen refuelling.

The place based approach allows for production and demand to be considered in combination. The pathway should align with developments that are or will be funded by the Industrial Strategy Challenge Fund or enabled through the soon to be launched CCUS Cluster Sequencing process.

It is important that the Welsh hydrogen pathway integrates with activities that are happening in England that can in combination deliver significant benefits to Wales as well. For example, the Hynet cluster in the North West of England is planning to develop the depleted gas field in the Liverpool Bay for storage, supporting the optimisation of critical pipeline infrastructure for CO2 transport to storage. Welsh government should support the development or acceleration of activities in or connecting to the Hynet cluster: both the pipeline infrastructure and the storage facility

could play a critical role in enabling cost effective CCUS for the South Wales Industrial Cluster and large scale hydrogen production in North Wales.
Additionally, investment in accelerating deployment of Hydrogen infrastructure to connect North Wales to the HyNet network could catalyse earlier development of Hydrogen in the North Wales region.

Consultation questions – Hydrogen Pathway Scope:

5. **Are there other areas where you believe hydrogen and fuel cell technologies have a role to play in Wales in the short term (period to 2025)?**

6. **Do you believe the pathway strikes the right balance between being ambitious yet proposing actions which can be delivered?**

This pathway is quite narrowly focused on short term deliverables and on end-use of hydrogen, particularly for transport. We would welcome more concrete information about how the Welsh government intends to support the production of low carbon hydrogen in Wales, both in the near and long term.

Consultation questions – Hydrogen Pathway Delivery:

7. **In addition to the points set out in the objectives, are there any other "no regrets" actions that you believe Welsh Government / industry should take in the short term to develop the hydrogen sector in Wales? Do you have evidence you can share in support of that view?**

8. **What are the key barriers, risks and challenges to realise the opportunities described? In your view, what measures would help to overcome these and what are the key enabling factors?**

One of the key opportunities that we see to support the activities described in the pathway is a focus on the local production of green hydrogen to support the greening of transport through hydrogen fuel cell technology, as set out in the proposed pathway.
In the longer term, support for the delivery of shared infrastructure and for interconnectivity will deliver robust energy systems and enable large scale production.

Consultation questions – Welsh Language Considerations:

9. **We would like to know your views on the effects that 'Hydrogen in Wales' and the next steps for developing the hydrogen energy sector in Wales would have on the Welsh language, specifically on opportunities for people to use Welsh and on treating the Welsh language no less favourably than English. What effects do you think there would be? How could positive effects be increased, or negative effects be mitigated?**

10. **Please also explain how you believe the proposed opportunities could be formulated or changed so as to have positive effects or increased positive effects on opportunities for people to use the Welsh language and on treating the Welsh language no less favourably than the English language, and no adverse effects on opportunities for people to use the Welsh language.**

Consultation questions – summary:

11. If you have any related comments which we have not specifically addressed in this consultation, please respond under question 11, supported by any relevant evidence.

Welsh government should consider how best to leverage opportunities, including matching low carbon hydrogen production in Wales with end-use solutions. In particular, the deployment of 200 fuel cell buses in Wales must be fuelled by low carbon, not grey, hydrogen, and that hydrogen should be produced in Wales.