

SUBJECT:	Presentation of a report on the Development of Hydrogen fuelled vehicles and their introduction into MCC
MEETING:	Strong Communities Select Committee
DATE:	11th July 2019
DIVISION/WARDS AFFECTED:	ALL

1. PURPOSE:

To brief members on a study commissioned by Welsh Government into the state of development of hydrogen as a transport fuel and into the feasibility of hydrogen being introduced into Monmouthshire as a sustainable low emission fuel.

2. RECOMMENDATIONS:

- 2.1.1 That members note the contents of the report.
- 2.2 That officers provide members with an update on latest developments in the state of the hydrogen fuel industry in the context of road transport.
- 2.3 That members be kept abreast of further developments and opportunities that may arise to explore the potential to introduce hydrogen as a low emission fuel into the municipal transport market.

3.0 KEY ISSUES:

Members may be aware that the authority is supporting the development of a hydrogen fuel cell car being developed by Riversimple based in Llandrindod Wells. In particular the authority has accommodated the siting of a hydrogen fuel refuelling station at the Bus Station in Abergavenny.

Hydrogen and electric are the least polluting of any transport fuel either established (petrol and diesel) or in development (Bio methane, Bio diesel) so their introduction into the transport market is recognised as potentially a major contributor to reducing pollution and Wales becoming carbon neutral.

The transport industry has known of the benefits of hydrogen as a transport fuel for many years but the major limitation in any significant development has been the lack of a fuelling infrastructure.

The development of the Rasa car by Riversimple necessitated a refuelling station so its installation in Abergavenny was taken as an opportunity to explore the hydrogen fuel industry within the vehicle industry further.

Welsh Government supported the investigation and commissioned Jacobs to undertake the study. Attached in the final report from Jacobs.

The report discusses in some detail the state of the hydrogen vehicle industry and also focuses on the options and opportunities for Monmouthshire at this time (section 6 – WP3 – Task 1-3 – Conclusions -pages 44 and 45 of the electronic copy attached).

Whilst the complete report may well be of interest to members to better understand the state of the hydrogen industry in transport terms for ease of reference the conclusions of the report are replicated on the next page of this report.

Officers will discuss these conclusions with members at the committee meeting and offer a broader overview of any further developments such as further studies or the introduction of any hydrogen fuel based vehicles in municipal fleets in Wales.

1. WP3 Task 1-3 Conclusions

Based on the review of Monmouthshire County Council's fleet, availability and characteristics of hydrogen-fuelled vehicles in this study the following conclusions can be drawn:

- The current range of hydrogen fuelled vehicles available includes light vehicles, such as cars and range-extender or dual-fuel vans to fuel cell buses and dual-fuel refuse collection vehicles and road sweepers. There are plans from various vehicle manufacturers to release increasing numbers of hydrogen fuelled vehicles in the near future (within the next five years), particularly in the heavy duty vehicle sectors.
- Hydrogen-fuelled vehicles are particularly well suited to heavy duty applications, and in some cases may be the only viable zero emission option. While the cost of hydrogen-fuelled vehicles is currently high as the technology is in a pre-commercial phase of deployment, costs and hence prices of these vehicles could reduce significantly with increasing scale of manufacturing expected from the growing demand for zero emission mobility solutions.
- MCC is supporting the Riversimple fuel cell car trial by integrating a small number of Rasa cars into the fleet. The composition of MCC's fleet means that until more hydrogen vehicles in the van / minibus / truck segments are available, the opportunities for the Council to use more hydrogen-fuelled vehicles in its day-to-day operations are relatively limited. However, the hydrogen transport sector continues to develop, several major strategic studies have identified heavy duty vehicles as a key application area for hydrogen, and vehicle manufacturers are responding to this opportunity. MCC should therefore follow developments in this sector and monitor the availability of zero emission vehicles across a wide range of classes.
- To build on the momentum created around hydrogen transport locally, MCC should continue to work with Riversimple, trial the cars, provide feedback, and support the on-going efforts to identify additional early adopters of the technology that will be required for Riversimple to realise its plans to increase the scale of production and commercialise the technology (the target date for the start of series production is currently late 2021).
- There is spare capacity at the Abergavenny hydrogen refuelling station (HRS) installed as part of the Riversimple trial and therefore an opportunity to refuel and trial other 350 bar vehicles in the short term. Given the relatively high cost of hydrogen from the station, it is unlikely to provide an economically sustainable source of fuel on an on-going basis for vehicles other than the most fuel efficient (such as the Rasa). The most feasible route for MCC to obtain hydrogen-fuelled vehicles in the near term would be short-term tests of existing demonstration vehicles from companies such as Microcab or ULEMCo, both of which have vehicles that could be made available for trials. Further discussions with these suppliers would be needed to determine the details of any such demonstration.
- The case for installing additional HRS in the area is likely to rely on significant increases in the demand for hydrogen for transport applications, implying fleets of tens of vehicles and an investment of several million pounds. If vehicle numbers increase, the preferred location for new refuelling infrastructure will depend on the types of vehicles, users of the vehicles, and other factors. For example, Riversimple cars are designed as small, ultra-efficient vehicles mainly for local use and HRS for Riversimple customers are expected to be sited in and around towns. On the other hand, drivers of larger vehicles that might be used for inter-city driving on a more regular basis may be better served by HRS in slightly different sites. An initial assessment of the base locations of MCC's fleet vehicles suggests Caldicot (near the M4 / M48) and Raglan (on the A40 / A449) could be good strategic sites for HRS mainly used by Council employees while providing links to stations in Swindon and Port Talbot.
- Hydrogen transport projects require a range of stakeholders including vehicle providers, end users and hydrogen fuel suppliers. MCC could help to facilitate hydrogen projects in the region, potentially partnering with other local authorities to establish a platform where these stakeholders can meet and develop projects. This would also help to raise awareness amongst and increase the profile of hydrogen as a transport fuel across Wales.
- Discussions with current users of hydrogen vehicles, such as the local authorities in Aberdeen, Fife, as well as the Yorkshire Ambulance Service would provide an insight into the day-to-day operations of hydrogen vehicles within a fleet and the potential challenges and issues that need to be considered when planning any deployment project.
- A proposed pathway for further development of the hydrogen fuelled vehicle fleet is illustrated below. Initial discussions with existing hydrogen customers, hydrogen vehicle providers and potential hydrogen stakeholders in the region would be the first steps to develop a hydrogen transport project in the region. The detail of the project and timelines would be dependent on the scale and scope of the project, with a potential hydrogen bus project deploying 40 fuel cell buses estimated to require approximately £10 million of additional funding.

4.0 EQUALITY AND FUTURE GENERATIONS EVALUATION (INCLUDES SOCIAL JUSTICE, SAFEGUARDING AND CORPORATE PARENTING):

4.1 Members are not being invited to make specific recommendations for decision to Cabinet or Council so a complete Future Generations and Equality Impact Assessment is not attached. However the introduction of low/zero emission vehicles is acknowledged as one of the greatest contributors to reducing pollution and developing a transport strategy to contribute to the WG commitment to the public sector becoming carbon neutral by 2040. As such officers would recommend that the authority continues to monitor the development of the hydrogen fuel transport industry and brings forward recommendations as the circumstances dictate.

5.0 OPTIONS APPRAISAL

This is a research study specifically into hydrogen as a transport fuel. As such options are not provided.

6.0 EVALUATION CRITERIA

There are no specific decisions in relation to the introduction of hydrogen fuel vehicles at this time.

Any future recommendation of this nature will include an evaluation process.

7.0 REASONS:

MCC's corporate priorities talk amongst other things of sustainable and resilient communities and future well being. Similarly Welsh Government is committed to becoming carbon neutral.

So whilst the low emission transport industry is in its infancy in the commercial and municipal sector it is important that MCC remains abreast of new developments and eventually develops a strategy to reduce pollution in the future.

8.0 RESOURCE IMPLICATIONS:

None arising directly from this report but staff resources will be engaged in remaining abreast with the industry and developing any further proposals to move to low/zero emission fuels in the future.

8 CONSULTTEES:

Enterprise DMT

9 BACKGROUND PAPERS:

Jacobs report - appendix to this report

10 AUTHOR: Roger Hoggins, Head of Operations

11 CONTACT DETAILS:

Tel: 01633 644133

E-mail: Rogerhoggins@monmouthshire.gov.uk