

Gas Vehicles

Summary of industry debates hosted by National Grid

19 January 2018 to 23 March 2018

Introduction

The heavy transport industry is starting to gather pace and momentum for the use of gas vehicles (GVs) to deliver early decarbonisation and air quality benefits across the country.

1. Between January and March 2018, National Grid hosted a series of informal meetings for industry leaders to discuss the potential future for GV's in the UK.
2. This note is a summary of the questions, issues and priorities identified at those meetings.
3. The initial phase of informal industry discussions ended on 23 March 2018 and the participants concluded that the next steps should be taken forward by the Natural Gas Vehicles Network (NGVN) trade association, initially focusing on policy advice, vehicle testing, the role of biomethane/bioSNG, connections to the gas network and technical standards.
4. Views expressed in this note reflect the themes of the informal meetings and are in no way indicative of the view of National Grid.

European obligations

In their [29 September 2014 press release](#), the European Commission made the following statements with regard to the directive associated with clean transport fuels, the provisions of which are expected to be transferred into United Kingdom law when it exits the European Union:

5. "clean fuels have been held back by three main barriers: the high cost of vehicles, a low level of consumer acceptance, and the lack of recharging and refuelling stations".
6. "natural gas use in trucks and ships can substitute diesel".
7. "ensure a sufficient number of publicly accessible refuelling points, with common standards...both in urban and sub-urban areas as well as on the TEN-T (Trans-European Transport Networks) core network, ideally every 150 km, to be built by end-2025".

2018 priorities

It is important to provide clear and objective evidence of whether GV's can accelerate delivery of the government's decarbonisation and air quality targets in the immediate term, subject to supportive government policies being in place. Attendees at the informal meetings believed that:

8. GV's in the heavy transport sector could be a significant 'quick win' for the delivery of government targets for decarbonisation and improved air quality.
9. Delivery of these benefits through the widespread deployment of GV's across the heavy transport sector is dependent upon the following:

- a. Government policies to incentivise the transition of heavy vehicles from diesel to gas.
 - b. The scale of biomethane (biogas) and biosynthetic natural gas (bioSNG) availability in the fuel production mix.
 - c. Access to sufficient network-connected gas filling stations in optimum locations.
 - d. Development of technical standards for filling stations and associated infrastructure.
10. The following two target milestones in 2018 have been identified as being crucial to stimulating progress in the GV market:
- a. Production of independent emissions test data from the latest gas and diesel vehicles by **August 2018**.
 - b. Development of an industry GV White Paper and the associated need for industry participants to lobby and influence the content of the Autumn Budget statement (expected **November 2018**) with regard to retaining and extending the gas/diesel duty differential and also using vehicle excise duty and rebated diesel duty to disincentivise diesel and incentivise gas.

Industry questions, issues and priorities

Future governance

Question: What industry governance requirements are needed if GVs are to be developed as a strategic approach to decarbonisation and air quality improvements in the transport sector?

Attendees at the informal meetings believed that:

Issues and priorities

- 11. Structured industry governance via an independent trade association is required to coordinate industry participants' input into GV developments and influence government policies associated with heavy transport's contribution to decarbonisation and air quality targets.
- 12. The majority view arising from the informal meetings was that such a trade association should focus on the following immediate priorities to maintain the recent increase in pace and momentum:
 - a. Seek a wide membership, inclusive of all interested stakeholders.
 - b. Appoint a chairperson from its membership.
 - c. Confirm the working group structure, chairs and members to cover the following subject areas (to be kept under review): policy and public relations, vehicle emissions testing, biomethane and bioSNG, gas network infrastructure and technical standards.
 - d. Develop a funding model/options to enable the trade association to be self-funding from the outset.

13. Participation in the working groups should be open to any and all organisations who wish to participate, although it should be recognised that as a practical matter any industry forum will need to be self-funding and this may necessitate membership and associated subscriptions. In addition, other organisations such as government departments, other trade bodies and organisations from other countries should be invited to meetings at the discretion of members.
14. The trade association should advise members of their obligations under the Competition Act and any other relevant legislation and regulatory requirements.
15. The majority view of participants of the informal meetings was that the NGVN was the preferred forum to continue the debate.

Policy proposals

Question: With the urgent need for transport to deliver decarbonisation and air quality benefits, what policy proposals will the heavy transport sector make to government? Attendees at the informal meetings believed that:

Issues & priorities

16. A key focus within any evolving policy framework should be: *“What is the cleanest and most efficient way of moving people and goods around the UK today and into the future?”*
17. The GV industry should consider how to engage with government and what its key messages would be when responding to the focus referred to above.
18. The future transport fuel-mix is expected to be multi-fuel for several decades with an increasing role for gas (natural gas, ultimately blended with gaseous and liquid biomethane/bioSNG), hydrogen and batteries to replace petrol and diesel.
19. There were thought to be good reasons why GVs could have a significant role in the coming decades and the merits of GVs should be objectively compared against the merits of diesel and battery technology, particularly in high weight/load applications.
20. Consideration should be given to the costs associated with transitioning away from diesel to other fuel sources and the timescales upon which various technologies will facilitate this.
21. The Road to Zero report and Road Duty Review are government initiatives relevant to the GV sector where the consultation windows will close relatively soon.
22. The GV industry may be in possession of information which will help government make the best decisions possible in the delivery of its decarbonisation and air quality strategy and the GV industry should investigate how best to raise the visibility of that information resource to government.
23. Government should analyse the various transportation types, the opportunities each creates for clean air and decarbonisation, and the aggregate value thereof when considering where the quick wins lie in meeting the government objectives articulated in the Clean Growth Strategy and Alternative Fuels Directive.
24. Decarbonisation and air quality benefits are national issues and it is therefore important that local policies support and align to central government strategy.

25. If one or more government departments consider it useful, the GV industry could develop a plan setting out what is needed in terms of GV production, gas network access, filling stations and biomethane/bioSNG contribution to get around 3,000-5,000 GVs on the road in the next three years; and the subsequent reduction in nitrogen oxides (NOx), sulphur oxides (SOx), particulates and greenhouse gases (GHG).
26. Consideration should be given to the need to align UK policy for GVs with the approach taken in mainland Europe and Ireland in the context of the UK's role in post-Brexit trade agreements across Europe, e.g. Gas Networks Ireland (GNI) is planning a €75m investment in GV infrastructure and the French GV sector has indicated a need for 250 gas filling stations by 2020.

Vehicle Testing

Question: How does emissions performance compare between different fuel types and how should this shape the future approach to heavy transport? Attendees at the informal meetings believed that:

Issues and priorities

27. The latest vehicles of different fuel types should be independently tested to provide objective and credible emissions performance data in order for DfT to review and decide government policy with HM Treasury.
28. Such tests should cover an appropriate range of metrics, including but not limited to NOx, SOx, particulates and GHG reductions. Consideration should be given to which is the best economic, environmental, technological and commercial fit for: (i) lower mileage and payload; and (ii) higher mileage and payload.
29. There may be a case for focussing on well-to-wheel emissions performance rather than focussing on tailpipe emissions only.
30. Freight vehicle owners typically change their fleet over a five to eight year cycle, meaning a transition to GVs and delivery of decarbonisation and air quality benefits could happen quickly.
31. Engagement with government on the nature and scope of the test protocols by the GV industry is desirable to enable government to make its decision against the background of the best available facts.

Biomethane and BioSNG

Question: What role will biomethane and bioSNG have in the GV market in the short, medium and long term? Attendees at the informal meetings believed that:

Issues and priorities

32. Identifying the volume of gas required by GVs, the proportion of demand that could be supplied by biomethane/bioSNG (gaseous and liquid) over short, medium and long timescales is a priority and could use a market segmentation approach.
33. Industry could leverage development of biomethane and bioSNG technology and the timescales for deployment.
34. Business decisions for the type of gas to be used will likely be based on many considerations, such as safety, total cost of ownership, environmental/noise impact, ease of use, personal protection equipment (PPE) and customer benefits.

National Infrastructure Map

Question: Where should gas filling stations be built to enable the quick and widespread uptake of GVs? A map of Great Britain is required setting out potential gas network connections across the transmission and distribution networks. Attendees at the informal meetings believed that:

Issues and priorities

35. The UK gas network owners, in conjunction with other organisations, will (subject to confidentiality and other similar restrictions) produce a map of Great Britain's gas networks, core road network and major freight depots, highlighting the potential locations for network-connected gas filling stations.
36. The aim should be to provide a country-wide view across the National Transmission System (NTS) and distribution networks (DNs) which can then be used by the transport industry to help them to make decisions related to any future network connection requirements.

Technical Standards

Question: What standards are required for gas filling stations and associated infrastructure? Attendees at the informal meetings believed that:

Issues and priorities

37. The UK currently has approximately 35 gas filling stations (private and public access) at key motorway/road networks. There are a range of views of how many gas filling stations might be needed, ranging from 100 to 300 across Great Britain (compared to 8000+ petrol/diesel filling stations). For comparison, Italy has approximately 1000 operational gas filling stations.
38. Detailed design of filling stations and associated infrastructure will be a function of a range of physical requirements such as freight depot locations, driving routes, the road network, service station locations and proximity to the gas network.
39. Common standards will help accelerate the build and commissioning of new equipment, enabling the freight sector to have access to the required gas infrastructure for their vehicles.