29/04/2021
10:00 – 12:00
Via MS Teams

Bus Decarbonisation Taskforce – Meeting 3

Taskforce Members		
Organisation	Name	Remark
Scottish Enterprise	Linda Hanna	Co-chair (rotating)
Transport Scotland	Stuart Greig	Co-chair
Confederation of Passenger Transport (Scotland)	Paul White	Present
Confederation of Passenger Transport (Scotland)	Andrew Jarvis	Present
Confederation of Passenger Transport (Scotland)	Christine McGlasson	Apologies
Confederation of Passenger Transport (Scotland)	Colin Craig	Present
First Bus	John Dowie	Present
Stagecoach	Martin Griffiths	Present
Scottish and Southern Electricity Networks	Chris Burchell	Andy Huthwaite deputising
Alexander Dennis Ltd.	Paul Davies	Present
Wrightbus	Buta Atwal	Present
Optare	Robert Drewery	Present
Zenobe	Steven Meersman	Present
Scottish Power	Keith Anderson	Graham Campbell deputising
Scottish National Investment Bank	Alastair McMillen	Present
HSBC	Robert King	Present
Lloyds	Victoria Whitehead	Present
Association of Transport Co-ordinating officers	John Berry	Present
Transport Scotland	Laura Murdoch	Apologies
BOC	Mark Griffin	Present
Scottish Government	Andrew Hogg	Guest speaker

1. Welcome and progress on actions

1.1. The co-chairs jointly welcomed attendees to the third meeting of the Taskforce. Stuart Greig set out housekeeping arrangements (including welcoming guest speakers and attendees who were deputising for regular taskforce members).

1.2. As the meeting was held in pre-election period the Chair informed the taskforce that while manifesto commitments for the Scottish Parliamentary Elections had been published there is little that can be discussed about them at this time.

1.3. The Chair invited updates on the Taskforce's Action Log. Claire Jones explained that work is underway exploring technology costs, information asymmetry, and the residual value risks of batteries which will be brought to the next Taskforce meeting. Paul White provided an update on CPT discussion with membership on vehicle standardisation: members are open to standardisation of vehicle specification if that would reduce costs, however there is some scepticism that the cost savings would be significant. Members would not be in favour of standardisation leading to very basic vehicles. Further discussion about the potential for demand aggregation across multiple operators is needed. Full survey of membership is still to take place and members expressed reservations on responding to the survey until the next Parliament.

1.4. Stuart Greig updated the Taskforce on progress since the last meeting including: the conclusion of the second round of the Scottish Ultra Low Emission Bus Scheme which will result in the deployment of 215 zero emission buses, the submission of plans for a hydrogen electrolyser near Glasgow by Scottish Power (supported by BOC) and, the recent hydrogen workshop hosted by KPMG on behalf of the Industry Advisory Group.

2. Energy Networks (Paper 3.1)

2.1. The Chair handed over to Andy Huthwaite and Graham Campbell to deliver a short presentation relating to energy networks and the regulatory framework. They outlined the regulatory framework for electricity distribution networks in the UK as set out in Paper 3.1. They also spoke to the importance of planning for the next regulatory period which will set out allowed expenditure for the companies.

2.2. They informed the Taskforce that innovation funding is available through the regulatory framework but that the threshold for securing funding is high and, in some cases, competitive.

2.3. The discussion was then opened up to the Taskforce. A question was asked about the role of timed and flexible connections in reducing connection costs. It was agreed that more knowledge about bus demand peak would be useful to understanding what role flexible and timed connections could play.

2.4. The Taskforce discussed the cost of network enhancements and concluded that the current focus (on a project by project) basis is too narrow and needs to be broadened to move to a whole-systems approach of planning network reinforcement, which would incorporate decarbonisation of buses alongside other net-zero targets such as domestic heating as well as other electric vehicles.

2.5. Representatives of the Distribution Network Operators (DNOs) argued that DNOs need sight of transition plans from operators in order to plan and agree a programme of electricity network enhancements over the coming years with the regulator OfGEM. The potential for a future demand mapping exercise, that

would complement the heatmaps for electricity distribution published by Scottish Power, and SSE, was discussed.

2.6. This lead into discussion about how bus operators and the energy networks can engage at a more productive level. Current engagement tends to be very high-level and Scotland-wide, or very local regarding civil works planning for individual depots. Engagement between the relevant parties for multi-depot, cross-modal, and cross-purpose district-level planning could be very helpful, and the development of future demand map could support that. In particular, it could lead to decreased timescales and costs by combining different decarbonisation projects including EV chargepoints and decarbonising domestic heating as these also significantly affect electricity network capacity. The Taskforce agreed that there is scope to bring together local government, bus operators, DNOs and other relevant stakeholders to address these intermediate district-level network enhancement planning opportunities to improve timescales and potentially reduce costs.

ACTION: Explore scope and resource required to develop future demand map, similar in nature to the heatmaps, and the potential for this to aid strategic planning and engagement between bus operators, DNOs and local government.

2.7. The Taskforce agreed that the Communications and Engagement Plan should include the development of a framework to communicate key messages for other stakeholders such as the Independent Distribution Network Operators (IDNOs), smaller bus operators, and the wider finance industry not represented at the Taskforce meetings.

3. Energy Supply (Paper 3.2)

3.1. The Chair invited Andy Hogg, Deputy Director for Energy Industries at the Scottish Government to deliver his presentation on the Scottish Government-Targets and Policies to meet net-zero by 2045 to the Taskforce. Andy took the Taskforce through slides which set out the progress towards decarbonisation and future strategy.

3.2. Following the presentation the Chair opened the discussion.

3.3. The Taskforce discussed the role of transitional lower-carbon technologies such as Liquefied Natural Gas (LNG), Liquefied Petroleum Gas (LPG), and Compressed Natural Gas (CNG). General consensus was reached that while these fuels may address some operational concerns, these options incur similar costs to electrifying but without much improvement on emissions (although the buses are less expensive than zero emission buses) so it is better to by-pass these options and go straight to zero emission.

3.4. The chair finished by adding that it would be helpful for Scottish Government energy officials to brief the Taskforce once new ministerial priorities became clear.

4. Hydrogen (Paper 3.3)

4.1. The Chair invited Sara Grainger to present and summarise Paper 3.3 on hydrogen.

4.2. Sara Grainger emphasised that both battery-electric and hydrogen fuel-cell buses are expected to form the future, zero emission bus fleet, and that there is no requirement or wish to pick one technology or the other. It is however the case that battery-electric and hydrogen fuel-cell buses and associated infrastructure are at different stages of commercial development and thus require consideration separately.

4.3. Hydrogen fuel-cell technology poses distinct challenges and opportunities compared to battery-electric buses. In particular, given the costs of hydrogen refuelling infrastructure and the benefits of adopting hydrogen technology at scale, hydrogen presents a good opportunity for collaborative working across bus operators and/or across multiple modes of transport. The Taskforce discussed the importance of considering hydrogen bus developments as part of a wider picture for hydrogen transport developments, and other hydrogen applications such as domestic heating or industrial uses.

4.4. It was pointed out that although there has been significant successes with hydrogen buses in Scotland this hasn't involved SULEBs funding and there have not been any bids put forward to SULEBs for hydrogen buses. The Taskforce agreed that this is mostly attributable to the higher operating costs of hydrogen fuel cell buses and agreed that a single subsidy scheme for both battery-electric buses and hydrogen fuel-cell buses may not be appropriate in the immediate future.

4.5. The Taskforce discussed the Aberdeen Hydrogen Bus Project and agreed that while it produced many benefits, the project lacked the capability for future expansion and could have widened the scope of potential vehicles. This reduced hydrogen production volumes which increased per-unit costs and contributes significantly to the higher operating costs of hydrogen buses.

4.6. The Taskforce considered whether local government should have a more prominent role and support co-ordination across modes to realise benefits of scale. Importantly it was argued that it is not necessarily about providing funding for hydrogen refuelling infrastructure but rather support to co-ordinate a large enough number of vehicles to enable economies of scale to reduce costs. This enables multiple types of vehicles (and companies) to utilise the infrastructure.

4.7. The Taskforce agreed that this is particularly important for more rural areas where multi-modal use of hydrogen refuelling will be key due to smaller volumes of vehicles within an individual fleet. Importantly, rural areas offer the opportunity of connecting to (and securing a hydrogen supply from) renewable

generation. This will require consideration of the size of haulage, demand for rail, ferries and others as well as local bus demand.

4.8. The Taskforce also discussed the implications of hydrogen from a financier perspective with finance representatives pointing out that there is a need for risks to be spread fairly.

5. Summary of agreement reached and next steps

5.1. Stuart thanked Linda Hanna for chairing the meeting and attendees for their contributions.

5.2. The next Taskforce meeting will focus on the supply chain opportunities and challenges, review of a draft pathways and future of capital subsidy for zero emission buses and is scheduled for 15 July. A chair will be announced in due course.

NOTE: Since this meeting, the Scottish Parliamentary elections have been held and the focus of the next meeting of the Taskforce may be reconsidered in the light of the manifesto commitments of incoming Scottish Ministers.

Reference	Action	Due Date	Status
BDT-02a	Produce a paper on technology costs and identify opportunities where costs could be reduced	15 July	Open
BDT-02b	Produce a paper on battery residual value risk and possible second-life post automotive use.	15 July	Open
BDT-07	CPT to liaise with stakeholders on the pros and cons of vehicle standardisation which could be taken forward to support leasing arrangements	29 April	Closed
BDT-08	CPT Scotland (in conjunction with the secretariat) to explore potential for demand aggregation across multiple operators.	15 July	Open
BDT-09	The secretariat will co-ordinate with manufacturers to addressing data asymmetry and comparability regarding component costs.	15 July	Open
New Actions			
BDT-10	Building on action BDT-08, explore potential to address intermediate district-level network enhancement planning opportunities between bus operators, DNOs, local government and other stakeholders to improve timescales and potentially reduce costs.	September	Open