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**Merseytravel Hydrogen Bus Trial Project**

**Technical Support Brief**

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1. **Background**
   1. The Liverpool City Region is governed by the Liverpool City Region Combined Authority (“LCRCA”, “Combined Authority”, “we”, “our”) and its constituent local authorities. The Combined Authority has specific authority over devolved city region-wide issues, including economic development, transport, strategic housing and employment and skills, and is working to grow the economy and attract more residents and businesses to live, work, visit or invest in the Liverpool City Region (“LCR”).
   2. The LCRCA was established on 1 April 2014 and its members are the Liverpool City Region Metro Mayor, five local authority leaders of Halton, Knowsley, Sefton, St Helens and Wirral Councils, the elected Mayor of Liverpool City Council and the Chair of the Local Enterprise Partnership (“LEP”). Warrington and West Lancashire Councils are Associate Members of the Combined Authority. There are two co-opted Members in the Merseyside Police and Crime Commissioner and the Chair of the Transport Committee.
   3. In November 2015, the LCRCA secured a Devolution Agreement with Government, securing £900m of funding over a 30 year period, and brought together other funds into a Strategic Investment Fund (“SIF”). The Agreement also brought with it the devolution of powers and responsibilities from Government. Devolution is an important opportunity for the Liverpool City Region to take control over its own future, prioritise the things that matter most and that best meet local needs.
   4. The November 2015 Devolution Agreement together with the March 2016 updated agreement, details the CA’s remit and authority.
   5. Merseytravel is the Transport Executive Body of the LCRCA. Merseytravel, as an officer level delivery body of LCRCA, has a Scheme of Delegation to oversee specific activities and functions of the Combined Authority. It provides professional, strategic and operational transport advice to the Liverpool City Region Combined Authority to enable it to make informed decisions. It is also the delivery arm, making transport happen.
   6. Merseytravel delivers transport projects that support the economic growth of the city region. The focus is on improving connectivity within the region and beyond, improving the customer experience from ticket buying to journey planning and maintaining the integrated transport network, including the Mersey Ferries and Mersey Tunnels, to ensure it is fit for the future, accessible and safe. The aim is to make that network world class.
   7. The LCRCA’ s transport responsibilities include policy, strategic highways, freight, walking and cycling, tunnels and public transport.
   8. Buses are critical to the Liverpool City Region (LCR) – with 100,000 journeys to work and 60,000 journeys to places of education being made every day. They provide one of the main avenues for access to opportunity – transporting residents of the city region to work, training opportunities and apprenticeships, with 1 in 4 people in the Liverpool City Council area alone commuting on the bus.
   9. In July 2019 LCRCA approved the principles of the Vision for Bus a set of fifteen objectives built on the achievements of the LCR Bus Alliance and the outcomes of the Mayor’s Big Bus Debate. The Vision intends to tackle the issues identified by customers, further support the aims of the Bus Strategy, capture new innovations and technology in the sector and the region, and better recognises the important role of bus services in improving air quality through greener buses and modal shift from car.
   10. The Liverpool City Region has made a commitment that our bus network will be carbon neutral by 2040 and that no more diesel vehicles will be procured after 2025 or leased after 2030.
   11. The scope of the work that we are procuring under this brief relates to the bus project. However, we are looking to build a relationship with consultants that could continue, as appropriate, under separate agreement, past the scope of this project as the LCRCA develops its Hydrogen roadmap and strategy.
2. **The Project** 
   1. As part of its ambition that the Liverpool City Region (“LCR”) will become zero-carbon by 2040, Merseytravel is committed to a trial of up to 25 double decker hydrogen fuel cell buses (“FCEV”s).
   2. A key objective is the ‘phasing in of zero and ultra-low emission buses including ultra-low emission Euro 6, electric and hydrogen powered busses. The total fleet requirement for the LCR is in the order of 1,200 to 1,400 buses and it is recognised that public intervention, in partnership with operators, will be required to deliver this.
   3. The Merseytravel Hydrogen Bus Trial Project is a one of the early activities we are undertaking to deliver the zero-emission objective. The FCEV fleet will be the first hydrogen powered bus fleet in the LCR.
   4. After careful consideration of different funding models, it has been agreed that Merseytravel will purchase and own the fleet and lease it to commercial operators.
   5. Merseytravel are looking to procure a complete solution for a FCEV fleet from a bus manufacturer as either, a single supplier entity or, as part of a consortium. It is anticipated that the buses will be delivered in tranches as manufacture is completed. Merseytravel will be looking for proposals to maintain the vehicles.
   6. A new refuelling station will be built within the city region to supply hydrogen to the buses.
   7. The bus manufacture will occur in parallel with the development, installation and commissioning of the refueller.
3. **The Project Objectives are to:** 
   1. Contribute to zero carbon emission targets by 2040 within the LCR through cleaner public transport.
   2. Establish the feasibility of bus ownership within the LCR of hydrogen fuel cell buses, with the strategic intent of rolling out zero emission buses in partnership with operators across the LCR.
   3. Identify learnings from the Hydrogen Refuelling Station Operator and users, of the commercial viability of an LCR refuelling station.
   4. Identify robust operational requirements and the design and build requirements that are needed to meet or exceed the expectations of the public and the operators.
   5. To provide a high quality bus offer for the bus passengers of the Liverpool City Region, including industry leading, high-spec vehicles which utilise the latest safety and on board customer focused features which contribute to an enhanced journey experience, tailored to meet their requirements.
   6. To ensure that the Project delivers the maximum benefit for the LCR economy, aligned to the emerging Hydrogen Roadmap, by facilitating opportunities for local businesses to participate in the Project and creating high quality, skilled jobs.
   7. To manage the health and safety of all involved in the delivery of the Project, including bus users and staff.
   8. To understand the infrastructure and service requirements to ensure a well-maintained hydrogen bus fleet across the city region.
4. **Current Position**
   1. Merseytravel intends to procure the buses as a full hydrogen powered solution. The procurement procedure has yet to be decided.
   2. Specialist bus related technical expertise will be delivered by our Bus Operators.
   3. Merseytravel will appoint external technical consultants to assist with the project and provide advice in line with the scope detailed in section 6 below.
   4. Merseytravel intend to retain the appointed consultant at least through to the delivery stages of the project. We will work with the selected consultant to co-develop the scope of work for the period post the delivery of the fleet.
   5. Across the Liverpool City Region operates a network of 1,200 buses with an aspiration to increase this to 1,400 to deliver service enhancements. Euro 5 as standard is tendered on all contracts since 2019 and our Bus Alliance partners operate a fleet with an average age of 7 years or under. 48% of our network is euro 5 and by 2025 we need a diesel exit strategy agreed and implemented across the LCR Bus Network
5. **Project Resources** 
   1. Merseytravel have identified an internal, dedicated project management team to deliver the Project.
   2. The two main Bus Operators in the LCR, Arriva and Stagecoach both have key roles to play in the delivery of the project. As such, members of their teams have been successfully integrated into the various workgroups which have been established to develop the project.
   3. The Consultant can expect to have extensive interaction with personnel from these organisations.

#### The Business Case will be produced in accordance with the Green Book principles as follows:

* Strategic Case -core content to be developed by Project Team prior to input from technical advisor
* Management Case – core content to be developed by Project Team prior to input from technical advisor
* Economic Case – being co-developed by Project Team and separately appointed consultants
* Financial Case – to be developed with input from specialist technical advisor
* Commercial Case – core content to be developed by Project Team prior to input from technical advisor.

1. **Scope**
   1. The Hydrogen Bus Trial Project, including the project management team, requires specialist technical support to continue developing the project.
   2. The scope of the works to be undertaken through this commission may include, but is not limited to, the following activities during the procurement, manufacture, delivery and approvals phases of the Hydrogen Bus Trial Project:
   3. Provision of specialist technical support, as required, to the Hydrogen Bus Trial Project. Elements are anticipated to include:
      1. FCEV buses including: fleet procurement, fuel system specification and design for the procurement process, fuel cell technology and market intelligence, maintenance programme design, scoping of maintenance training, refuelling facilities, safety considerations, scope definition, project implementation and commissioning;
      2. Review current status and assist in development of the project’s technical specifications;
      3. Advising on factors and influencers in respect of hydrogen fuel pricing;
      4. Assist, as required, in the preparation of procurement documentation for the Hydrogen Bus Trial Project;
      5. Input to all Five Cases of the Outline and Final Business Case as noted in 5.4 above and the related assumptions;
      6. Co- development of a future-proofing strategy for the LCR zero emission bus fleet;
      7. Insight and intelligence, subject to commercial sensitivity, on related projects and market developments for wider hydrogen matters that influence the assumptions supporting the development of the project;
      8. Participation, as members of the team in technical bid evaluation;
      9. Supporting the legal team with technical input into contract preparation, including lessons learnt from equivalent projects;
      10. Provision of specialist support, as required, throughout the life of the project;
      11. Providing advice on bus depot and maintenance requirements;
      12. Providing advice on bus ownership issues;
      13. Leading on a region wide risk assessment with key stakeholders to determine challenges to be addressed in taking this project forward;
      14. Undertake visits to successful bidder’s manufacturing facility and facilities of manufacturer’s subsidiaries, agents or suppliers as required to assist on sign off and inspection of buses as part of acceptance process. Working with our Bus Operators to co-develop the FCEV fleet acceptance process;
      15. Arrange visits/meetings/introductions, to reference projects for the project team;
      16. Provision of support to project stakeholders, for example reports for internal project boards, as and when requested and instructed/approved by Project Management Team;
      17. Work with Bus Operators as required, including in relation to operational procedures;
      18. Attendance at, and input, into Project related meetings as and when required including instigation and facilitation of meetings integral to achieving Project delivery (as agreed with appropriate Project Management Team members);
      19. Ad hoc support may also be required should matters requiring specialist advice arise.
      20. Work with the Merseytravel Bus Team and LCR Operators to determine which bus routes across the city region bus network, would hydrogen fuelled buses best be allocated to, recommending viable propulsion alternatives for vehicles on other routes where necessary.
      21. Work with the Merseytravel Bus Team and LCR Operators to advise on any necessary depot changes required to be facilitate the operation of hydrogen fuelled buses, this could include advising on the siting and design of new depots across the city region.
2. **Outputs**
   1. The outputs of the commission will be co-developed with the successful consultant to ensure the successful delivery of an integrated solution to meet the strategic aim of the project. Regular reporting to the Project Team on performance against agreed tasks and performance against agreed budget will be required.
   2. We will agree a format for regular reporting against agreed milestones, but respondents are encouraged to include proposals on reporting and suggested ways of working.
   3. We will require a detailed proposed workplan for delivery within four weeks of appointment.
3. **Timescale**
   1. Services are to be provided as and when required within the project timeframe, which we anticipate being, at least a year, through and potentially beyond the delivery of the FCEV fleet (this could be a two-year term). Progression of engagement between phases is not guaranteed although is our preferred way forward as we are seeking a collaborative partnership. A review of the Consultant’s performance will be undertaken throughout the project.
   2. Inception meeting to be held within 1 week of appointment.
   3. Respondents should assume that attendance will be required at weekly project meeting (currently held virtually) supported by frequent interaction with members of the project team. Respondents should assume that the workload will fluctuate during the course of the assignment.