



Department
for Transport

Zero Emission Bus Regional Areas Scheme – 2021 to 2022 Application Form

Call for Expressions of Interest

Applicant Information

Local transport authority: Nottingham City Council

(For joint bids only) Which local transport authority is the lead bidder: N/A

Area within authority covered by bid: Full Nottingham City Council area plus parts of Nottinghamshire County Council's districts of Broxtowe, Gedling and Rushcliffe.

Bid Manager Name and position: Richard Wellings, Principal Public Transport Officer

Contact telephone number: 0115 876 4896

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Postal address: Transport Strategy, City Development and Growth, Loxley House,
Station Street, Nottingham, NG2 3NG

Submission of proposals:

Applications to the Scheme will be assessed against the criteria set out here and in the guidance document. Please adhere to word limits. We will not accept any additional information unless specifically requested.

Proposals must be received no later than 17:00 on the following days.

- **Fast track process** - 5pm on 21st May 2021
- **Standard process** – 5pm on 25th June 2021.

You will receive confirmation that we have received your proposal within 1 working day.

An electronic copy only of the bid including any supporting material should be submitted to buses@dft.gov.uk.

Please include “**ZEBRA (Fast track Process) Local Transport Authority name**” in the subject line of the email if you are applying under the fast track process.

Please include “**ZEBRA (Standard Process) Local Transport Authority name**” in the subject line of the email if you are applying under the standard process.

Enquiries about the Fund may be directed to buses@dft.gov.uk.

Transparency and privacy

Please refer to the guidance for this scheme before completing the application form to understand how DfT will manage your data.

SECTION A: Mandatory Questions

Areas must satisfactorily answer all of the questions in this section to be eligible to progress to Phase 2 of the scheme. If you would like further information, please contact the Department for Transport at buses@dft.gov.uk.

Areas must provide the information requested in questions A1-A5.

A1. In total, how many new zero emission buses will your proposal deliver?

86 in total – 78 for Nottingham City Transport’s commercial operation and 8 for Nottingham City Council’s linkbus network.

A2. Total DfT funding sought (£m)

£23,898,883

A3. Third party funding contributions (£m)

£22,328,294

Made up of £20,342,892 private sector match and £1,985,402 local government match.

A4. Funding from other government schemes (£m)

N/A

A5. Total cost of the proposal (£m):

£46,227,176

Areas must be able to answer yes to question A6-A12 to be able to progress to Phase 2.

A6. If your bid is successful, are you able to invest DfT funding within the time outlined by your scheme?

Yes. Infrastructure will be implemented during 22/23 to align with the phased manufacture and delivery of the buses from the third of quarter of 22/23 through to the third quarter of 23/24.

A7. If your bid is successful, are you able to capitalise DfT grant funding?

Yes.

A8. Have you considered whether additional zero emission buses are needed to replace existing buses?

Evidence suggests that replacing diesel buses with zero emission buses can require additional zero emission buses to provide the same level service as provided by diesel buses. Areas should set out how many additional zero emission buses are needed to replace existing buses. If areas are of the view that additional zero emission buses are not required please set out why.

Yes. Based on future operational requirements post –pandemic the number of buses included within this bid will be sufficient to deliver the required peak vehicle requirement on the routes that will be converted to electric operation. The Nottingham City Transport project will see 78 Diesel buses replaced with 78 electric buses.

The Nottingham City Council Project will see 16 first generation electric buses with limited range replaced with 8 longer range electric buses aiding operational efficiency.

A9. Have you provided a breakdown of infrastructure costs for your proposal?

Infrastructure costs could include (but are not limited to): cost of charging unit or refuelling stations electrical or other power components; civil engineering works, labour costs (for installation); hardware costs; capital costs of developing associated software systems; surveys at the point of procuring the infrastructure provided they can be capitalised; upgrades to the energy grid to cater for increased energy demand.

Yes. Appendix K includes a breakdown of the infrastructure costs from potential project partners Western Power Distribution (WPD) and Zenobe Energy alongside the Value for Money (VfM) proforma that accompanies this application.

A10. Does your proposal have the support of bus operator(s) in the area?

*The proposal requires the support of at least one bus operator operating in the area who will operate the zero emission buses. The bid does not, however, need the support of all bus operators operating in the area. If local transport authorities are not able to provide this evidence of support from operators they **must** explain why.*

Yes, this bid is supported by Nottingham City Transport who operate 85% of the commercial bus network. All members of the longstanding local bus partnership were given the opportunity to participate in this Expression of Interest.

A11. Have you spoken with any energy companies when preparing your proposal?

Yes – scoping discussions and site visits have been held with Western Power Distribution (WPD) and a quote received for grid connection and required substation upgrades. Scottish and Southern Electricity (SSE) have been engaged as a potential alternative to WPD as an Independent Distribution Network Operator, infrastructure partner and supplier for the non-contestable works associated with the grid connection and substation works. SWARCO have been engaged as potential charging station provider and Zenobe energy as a turnkey solution provider, leasing partner and smart charging system and vehicle telematics provider.

A12. Does your proposal comply with the accessibility requirements set out in the scheme guidance?

The scheme guidance sets out a number of accessibility requirements including: requiring buses to incorporate equipment to identify the route, each upcoming stop, and the beginning and end of diversions: providing an induction loop to aid direct communication between drivers and passengers who use a hearing aid and providing an additional flexible space in addition to the mandatory wheelchair space, suitable for a second wheelchair user and/or at least two unfolded pushchairs or prams.

Yes. Nottingham City Transport's and Nottingham City Council's fleet specification standards will directly mirror those outlined in the scheme guidance in relation to accessibility and will be applied to the procurement of any new buses. All buses procured will be compliant with the Public Service Vehicles Accessibility Regulations 2000 and will have as standard:

- Audio Visual route and next stop announcements
- Induction loops to support driver – passenger interactions on boarding and in wheelchair and priority seating
- Supplementary space in addition to the mandatory wheelchair space, suitable for a second wheelchair user and/or at least two unfolded pushchairs or prams.

SECTION B. Defining the place

This section will seek a definition of the area to be covered by the Zero Emission Bus Regional Area. Areas should:

- Include information setting out the extent of the area to be covered by the proposal – the **defined area**. If the defined area is different to the area covered by the local transport authority please make this clear. Please provide maps if required.
- Provide details on the bus sector including naming **all** operators who operate services in the defined area, their market share and fleet sizes. This should include both operators who are supporting your proposal and will be operating the zero emission buses and other bus operators in the defined b area.
- Clarify what proportion of bus services in the defined area will be operated using zero emission buses.

Area Covered by Nottingham's ZEBRA Proposal

This proposal will see full conversion of Nottingham City Transport's single decker fleet to electric bus operation alongside a vehicle upgrade to Nottingham City Council's existing linkbus fleet. Infrastructure will be upgraded at Nottingham City Transport's Trent Bridge Depot in order to charge the new buses. A sustainable energy supplier will be secured and, if feasible, a Solar PV array will be added to the depot roof alongside battery storage to either feed power back into the grid or charge the buses directly. Appendix A details the routes that will be covered and the Local Transport Authority areas across Greater Nottingham that will be served by the new electric buses. These include Nottingham City Council's area and a number of district boroughs within the Nottinghamshire County Council authority area. All of the services operate into Nottingham City Centre and serve a number of key attractors across the conurbation including the city's two hospitals, two football grounds and cricket ground, local college and university sites, centres of employment, district centres, parks and open spaces, suburban residential and key interchange points between heavy and light rail.

Additionally, Nottingham City Council is seeking to replace a number of limited range first generation electric buses with modern extended range vehicles alongside some minor upgrades to the charging infrastructure at the existing Queen's Drive Depot. For buses operated on the linkbus network which provides socially necessary services that plug gaps in the commercial offering.

Details of Local Bus Operators and Market Share

Nottingham's dominant urban operator is Nottingham City Transport, who currently operate 120 biomethane double deckers alongside 185 Euro VI diesel buses. The addition of electric buses to the fleet will continue their decarbonisation journey and the company's ambition to become the UK's first carbon neutral bus operator. TrentBarton, the other large operator that serve the majority of the rest of the commercial network focus predominantly on the intra –urban market between Nottingham and Derby and the towns that make-up the city regional hinterland to the North and the South. The rest of the market is made up of a handful of commercial services and the electric linkbus network of tendered services that plug gaps in the commercial bus market.

The table below details all operators within the defined area, the number of buses operated and their pre-pandemic market share:

| Operator | No. of Buses | Market Share |
|---------------------------|--------------|--------------|
| Nottingham City Transport | 305 | 85% |
| Trent Barton | 125 | 12% |
| Nottingham City Council | 58 | 3% |
| Stagecoach | 6 | |
| CT4N | 16 | |
| Marshalls | 4 | |
| Centrebus | 4 | |

Proportion of Electric Buses to Be Operated Within the Proposal Area

Discounting Nottingham City Council's non-commercial 58 bus electric fleet. 17% of the commercial fleet will be electrified as a result of this proposal. This equates to 26% of Nottingham City Transport's entire fleet, a significant proportion of vehicles given their local market share and operated mileage.

Derby City Council, our partners in the Derby – Nottingham transforming cities programme are also developing a ZEBRA bid which will establish Derby as an advanced fuels centre, building on their strong Aviation, Rail and Automotive manufacturing base in partnership with Rolls Royce, Toyota and Bombardier. They are aiming to bring forward a 30 bus Hydrogen bid as part of their ZEBRA ambitions. Which if successful could result in a number of the intra urban TrentBarton services that operate between Nottingham and Derby to be transformed into Hydrogen operation, including the Red Arrow which provides a 24hr bus link between the two cities.

SECTION C: Ambition

This section will seek evidence of the level of ambition from the local transport authority to decarbonise their bus fleets, support bus services and decarbonise transport.

C1. Public transport ambitions

Areas should:

- Provide clear explanation of your ambition to decarbonise the bus fleet in the defined area and how this proposal will support this ambition. If the defined area is different to the local transport authority area please explain your ambitions to decarbonise the bus fleet in your local transport authority area and how this proposal will support this ambition.
- Provide evidence of existing plans to support the provision and operation of local bus services in the area. This could include existing partnership working between the local transport authority and bus operators, bus priority measures, improvements to information about bus services.
- Include complementary policies to decarbonise transport in the area.
- Explain how the proposal supports wider ambitions to increase public transport use and active travel in the area.

Please limit your response to 500 words.

Nottingham's Bus Decarbonisation Strategy and Associated Plans

Nottingham City Council has created an ambitious Carbon Neutral by 2028 plan (See Appendix B) which identifies decarbonisation of public transport as a key objective, mirroring the ambition of the city's 2018 public transport vision "Every Journey Matters – The Future of Public Transport In Our City" (See Appendix C) which called for every bus to be Euro VI or Ultra Low Emission by 2020. An objective that has been achieved but one which we now want to take to next level by accelerating the proportion of Zero Emission Buses in the fleet. These plans are further cemented by Nottingham's 2020-2025 Bus Strategy (See Appendix D), which further commits the city to the decarbonisation of buses.

Nottingham's Bus Quality Partnership and Bus Service Improvement Projects

Nottingham's 2020-25 Bus Strategy identifies the importance of Nottingham's longstanding Bus Quality Partnership. Which has implemented a comprehensive Advanced Quality Partnership Scheme for the city centre (See Appendix E) and the membership of it is now committed to implementing an Enhanced Partnership across the wider urban area by April 2022. Nottingham's 2020-25 Bus Strategy identifies a number of work packages being taken forward as part of the Derby-Nottingham Transforming Cities Programme that will build on the city's long term investment in bus priority and public transport information. Developed in partnership with the Bus Quality Partnership, these include, but are not limited to:

- Roll-out of traffic light priority for late running buses across all core high frequency bus corridors.
- Upgrades to our digital public transport information systems and hardware

- Additional Bus Lanes and Bus Lane enforcement
- A Demand Responsive Transport pilot
- A new Park and Ride site to the North of the city
- An operator pinch-point package
- Improvements to Broadmarsh Bus Station, Victoria Bus Station and Bulwell Interchange
- Improvements to Robin Hood Multi-Operator Smart Ticketing and Contactless Payment

Complementary Transport Decarbonisation Initiatives and Links with Active Travel

Plans for bus directly complement the city's wider transport decarbonisation programme "Go Ultra Low Nottingham". Which has delivered a comprehensive network of 400 charge points for Ultra Low Emission Vehicles across the Derby – Nottingham area, electrification of the Hackney Carriage fleet, conversion of the local public sector fleet including the UK's first electric Refuse Collection Vehicle and the city's first dedicated ULEV only service and repair centre. Work related to the local Future Transport Zone programme has also seen wireless taxi charging and the initiation of a citywide E-Scooter trial with Wind Mobility. This bus proposal given the increase in power infrastructure, augmented by Solar PV on the Trent Bridge depot roof and battery storage creates the potential for an electric neighbourhood mobility hub adjacent to the bus garages on Turney Street.

Many active travel projects including those being delivered through Transforming Cities and identified in the Local Cycling Walking Infrastructure Plan (See Appendix F) are integrated with bus priority corridors with dedicated bus lanes complemented with parallel cycle lanes and secure bicycle parking hubs. Improved pedestrian facilities and links to support better access to bus stops are also being delivered locally.

This proposal forms part of a 360 degree approach to improving bus services in Nottingham as highlighted in the Nottingham 2020-25 Bus Strategy and is a key aspect of improving the passenger experience through quieter, comfortable, modern buses which fit better with a Healthy Streets approach to our neighbourhoods where public transport, walking and cycling are prioritised.

C2. Community benefits

Please highlight any community benefits from your proposal. This could include economic development in the area or the creation and/or retention of jobs and apprenticeships related to the maintenance of zero emission vehicles, including batteries and fuel cells, and supporting infrastructure.

Please limit your response to 500 words.

Zero Emission Agglomeration, Retention of Jobs, Economic Development and New Skills

This proposal will continue Nottingham's progression as a national incubator and international model for Zero Emission vehicle technology. The alternative fuel mix deployed across the city's public transport network will yield useful comparative operational data. Which will support the progression of electric technologies, whilst simultaneously driving economic growth and improving the liveability and attractiveness of the city and district centres through significant reductions in air and noise pollution. The electrification of Trent Bridge garage, which is located within The Meadows residential area, will significantly reduce the noise impact of the garage following the transition away from diesel fleet. Increasing the available power infrastructure within this residential area also opens up the potential to create a neighbourhood mobility hub with e-bike, scooter, electric vehicle charging points and an electric car share scheme adjacent to the bus depot on Turney Street which could dynamically use power from the Solar PV battery storage and strengthened grid that this project would deliver.

The investment will also have an agglomeration effect on the local economy and skills base. Engineers and mechanics working for NCT will become skilled in maintaining and servicing electric vehicles, enhancing their employability. Local colleges already interested in offering courses in the maintenance and servicing of electric vehicles will now be able to develop local pathways into employment with the possibility of the local bus companies offering apprenticeships and work experience connected directly to this new technology. Academic institutions such as the newly formed Nottingham University's Centre for Advanced propulsion are well placed to benefit from close proximity to a real world test bed and creation of the Nottingham Electrical Vehicle Service Centre are early indicators of the type of agglomeration benefits that previous investment in zero emission technologies has helped to trigger locally.

Investment in electric buses will continue to protect jobs in the bus industry nationally whilst ensuring the attractiveness of bus travel on a local level by delivering a state of the art bus fleet which in turn protects jobs within the sector.

C3. Support for your proposal and wider vision

Provide evidence of support for your proposal and wider vision, such as letters of support or evidence of engagement, from partners.

This **must** include evidence of support from the bus operator(s) who will operate the zero emission buses. You **do not** need to include evidence of support from all bus operators within the area, only the operator(s) who will be operating the zero emission buses. This evidence must be a signed letter by both the CEO/equivalent level of the company and the local MD, committing to investing in the buses and operating them in the defined area e for a minimum of 5 years.

Local transport authorities that have not included this evidence must clearly set out the reasons for this.

You **must** also include evidence of engagement with an energy company. Energy companies could include Distribution Network Operators, Independent Distribution Network Operators, energy supplier, energy storage companies, smart charging providers or hydrogen fuel providers.

Areas may also wish to include evidence of support from other relevant bodies, depending on the proposal, for example:

- Other tiers of local government
- Local Enterprise Partnerships
- Local Energy Hub
- Leasing companies
- Finance companies

Please limit your response to 1000 words. Evidence of support, such as letter of support, can be included as annex.

Bus Operator, Stakeholder and Community Support for the Proposal and Wider Vision

Nottingham City Transport are fully committed to this proposal and have outlined their commitment to invest in the new electric buses in their letter of support for the minimum 5 year period in the defined bid area and will negotiate a minimum 10 year warranty for the battery and drive trains for any vehicles purchased to ensure the longevity of the investment. These commitments are mirrored in Nottingham City Council proposal to upgrade their linkbus operation. Nottingham City Transport's project is seen by the company as the first significant step towards full electrification and the cornerstone to deliver a full zero emission operation. Nottingham City Transport see electrification of their fleet as an exciting challenge that the entire company will need to rise to in order to implement new ways of working and a new all-encompassing culture within the business. As the Engineering, Operations, Finance and HR functions become accustomed to operating electric buses at scale. Nottingham City Transport's Managing Director letter of support can be found at Appendix G and is also complemented by a letter from the company's Engineering Director which fully outlines the company's bus decarbonisation journey, vision and forward plan. Letters of

support from a number of other key stakeholders and potential project partners can also be found at Appendix G including:

- the D2N2 Local Enterprise Partnership
- Nottinghamshire County Council
- University of Nottingham
- Nottingham Energy Partnership
- Sustainable Transport Nottingham
- Zenobe Energy
- Swarco
- SSE
- Nottingham Business Improvement District

A number of soft market testing and project scoping discussions have taken place with Energy companies including both Distribution Network Operators (DNO), Energy Suppliers, turnkey solution providers and smart charging providers. The range of potential project partners engaged include Scottish and Southern Electricity, Swarco, Western Power Distribution, Zenobe Energy and BYD. This has included site visits to both Trent Bridge Garage and the Queens Drive Depot to look at technical feasibility with a particular focus on power requirements and charger layouts.

Financing and leasing opportunities, including turnkey solutions have also been discussed with OEMs such as BYD-ADL, Caetano, Scania, Wrightbus and Yutong. Alongside organisations such as Zenobe Energy.

Detailed evidence of the type of engagement and discussions outlined above can be found as part of Appendix K.

As evidenced earlier in Section C of this submission. This project proposal does form part of wider strategic vision for Nottingham not only through the existing Nottingham Bus Strategy and Plan but also through the Carbon Neutral 2028 Nottingham Plan which was developed by the wide coalition of stakeholders who make up the city's green partnership. This proposal also links strategically to the D2N2 Local Enterprise Partnership (LEP) Energy Strategy. Which by 2030, aims to make Derbyshire and Nottinghamshire a national pioneer in clean growth and a test-bed for world-class energy systems innovation. The letter of support from the LEP that accompanies this application is further evidence of their support for this project which will accelerate the decarbonisation of buses in Nottingham and also support the future roll-out an expansion of the Zero Emission bus fleet via the proposed infrastructure investment.

Local passenger groups, including Sustainable Transport Nottingham support the decarbonisation of the bus fleet locally and see it as instrumental in maintaining Nottingham's bus system as one of the best in the UK.

Aside from local passenger groups we receive regular communications from local school children and others asking us what the Council is doing to advance the cause of electric buses and decarbonisation more widely in Nottingham. Regular enquiries are also made to

elected members formally via Councillor Casework and through engagement on social media. There is little doubt that there is popular support for electric buses. Survey feedback on our Air Quality Plan also garnered significant public support for the electrification of Nottingham's buses. A small sample of the type of comments we received from members of the public as part of that consultation can be seen below:

"I think that city transport in and around the city centre should all be electric"

"Make all buses and taxis electric"

"We should be a bold city and make a name for ourselves. Set crazy targets and reach them, for example all electric by 2030. All public transport electric by 2022"

Our local academic institutions, including our universities are supportive of our bus decarbonisation vision and this particular proposal. The University of Nottingham, with a student and staff body that represent a significant number of trips on the network are supportive of this bid and recognise its alignment with their own carbon ambitions and sustainability strategy.

SECTION D: Air Quality

This section will seek evidence of the air quality challenges in the area and how your plans tackle air quality in the area. Areas should:

- Set out the air quality challenge in the area, such as whether the area is identified in the national assessment as exceeding statutory limits.
- Set out how the proposal would address the local air problem.
- Provide evidence of existing transport plans to tackle air quality and greenhouse gas emissions.

Please limit your response to 500 words.

We will not accept bids covering places that cannot show that they have air quality issues.

Nottingham's Current Air Quality Challenge and Existing Transport Plans to Tackle Air Quality and Greenhouse Gas Emissions

In July 2017, the Department for Environment Food and Rural Affairs (DEFRA) published its "UK Plan for tackling roadside Nitrogen Dioxide concentrations". Nottingham City Council's administrative area was named in the document as having concentrations of Nitrogen Dioxide (NO₂) above the average annual legal limit of 40µgm⁻³. The City Council was then mandated by the Secretary of State to produce a plan that would show how the Council would reduce concentrations of NO₂ to within the legal limits.

Nottingham's plan contains a number of measures aimed at improving Air Quality:

- Retrofitting the bus fleet to improve emissions standards.
- Increasing the number of Ultra low emissions vehicles in the Council's Own fleet.

- The Taxi Strategy is working to reduce the age of the Hackney carriage and Private hire fleet together with our Go Ultra Low Programme and the EV taxi “try before you buy” scheme these measures are shifting the taxi fleet towards low emission vehicles.

The Local Plan (See Appendix H) was submitted and approved by DEFRA in September 2018. On the 21st November 2018 the Ministerial Direction (Environment Act 1995 (Nottingham City Council) Air Quality Direction 2018 came in to force which compelled the Council to implement its plan.

Notwithstanding the measures already delivered the plan contained a commitment to go much further in improving air quality than just meeting the air quality directive limit for NO₂. Acting on this commitment the Council extended one of its existing Air Quality Management Areas for nitrogen dioxide to cover the entire City. In addition, it is currently reviewing its Clear Zone delivery permit scheme in the centre of the city to ensure that only the cleanest vehicles can enter to deliver to shops.

How Nottingham’s ZEBRA Project will accelerate and Sustain Air Quality Improvements

Air quality monitoring data for 2020 generally shows a reduction in the annual average NO₂ and particle concentrations. When examined in detail the monitoring data shows that the lowest measured NO₂ and particle concentrations coincided with the strictest periods of ‘lockdown’. However, on 3 arterial routes (not identified in the detailed infraction modelling), diffusion tube data continues to indicate NO₂ concentrations in the range 39-43 ug/m³.

The project will see the entire fleet of single deck diesel buses currently being run by Nottingham City Transport electrified and longer range upgraded buses rolled out on the city’s linkbus network of contracted services. This will see significant reductions in emissions from buses in the City AQMA and wider conurbation including AQMA’s in the County Council districts of Gedling and Rushcliffe.

Based on 19-20 pre-pandemic operated KMs during the period 01/03/19 to 29/02/20 it is estimated by using DEFRA Copert Emissions Factors that 2,024kg of NO_x emissions will be saved per annum by the conversion of the diesel routes within this bid to electric bus. Using an ADL – BYD E200 as a baseline, and its Ultra Low Emission Bus Certificate to estimate the Well to Wheel Greenhouse Gas Emission Savings of 3,126,537 kg CO₂e will be saved per annum (See Appendix I).

SECTION E: Value for Money

This section will seek evidence how you meet the Value for Money criteria, as set out in the guidance. Areas are also required to submit a separate value for money proforma that has been published alongside the application form. This spreadsheet requests basic information about the proposed investment to enable the value for money to be assessed using the Department's "**Greener bus model**".

The information in a completed pro forma, enables the model to estimate the greenhouse gases (GHG) emissions savings, other environmental & social impacts such as reduction in particulate matter (PM) and nitrogen oxide (NoX) emissions and savings & costs in the public and private sectors. By quantifying the key impacts of a proposed investment, this model helps provide decision-makers with as full a view as possible, about impacts on the environment, society, transport operators and the government finances.

The model provides a measure of the 'Value for Money', in the form of a benefit cost ratio (BCR) alongside other metrics such as the total estimated GHG savings and a cost effectiveness indicator estimating the net cost per tonne of carbon saved. These outputs will be used to score bids based on value for money.

The model does not capture every possible impact from a proposed investment, such as impacts from any resulting increases in patronage, improvement to the quality of journeys, or increased reliability. Where wider impacts (positive or negative) from investment are expected these should be stated, in the pro forma, as non-monetised impacts. These will be considered when making a value for money judgement, as set out in the Department value for money framework.

Please see the accompanying VfM Spreadsheet.

SECTION F: Deliverability

This section will seek evidence of how the Zero Emission Bus Regional Area will be delivered, and demonstrate that plans are credible and deliverable.

F1. Method of delivery and timescale for implementation

Establish the method of delivery, to cover:

- How you will work with local bus operators and other partners to deliver the proposal
- Any public consultation or third-party permission that will be required (e.g. for infrastructure)
- Explain any mitigations put in place for SMEs.
- Timescales for implementation, including when orders will be placed for zero emission buses and when supporting infrastructure will be delivered.
- Please demonstrate how your plans are credible and deliverable in the time proposed, and that any risks have been understood and mitigated

Please limit your response to 1,000 words.

Previous Electric Bus Project Delivery

Nottingham City Council has a strong track record in relation to the successful delivery of electric buses and infrastructure, as evidenced by its existing electric bus project which has operated successfully over a number of years (See Appendix J). Developed in partnership with the DfT and supported financially by Nottingham's Workplace Parking Levy. It has benefitted from previous rounds of green bus and low emission bus funding.

Nottingham City Transport Major Bus Project Delivery

Nottingham City Transport has a strong track record as evidenced by the successful delivery of its £42m Biomethane Bus project which was supported with funding from the Low Emission Bus and Ultra Low Emission Bus schemes. The project saw the roll out of 120 Biomethane Double Deckers, the implementation of a fuelling station and gas compression kit and importantly, in the context of this proposal, the delivery of a new grid connection and substation. This project was delivered on time and to budget by Nottingham City Transport's Engineering Team and provides confidence that the project management skills and capacity exist within the company to make a success of this electric bus proposal.

Project Delivery Scoping and Partnership Work

Preparations and groundwork, both from a physical infrastructure and project management perspective, are well advanced in relation to this proposal. Nottingham City Council's Major Projects department are working with Nottingham City Transport to scope their requirements with potential infrastructure partners such as SSE, SWARCO and Zenobe and their shortlisted bus manufacturers. Whilst a decision on their preferred bus is yet to be taken, the infrastructure project has been fully scoped (See Appendix K) and builds upon extensive renovations to Nottingham City Transport's Trent Bridge Depot that have been made in order to futureproof it for electric bus operation (See Appendix L). Nottingham City Council has also engaged in soft marketing testing with both bus manufacturers and infrastructure

providers See Appendix K) and local SME EV Charging Solutions to scope the work required at our existing bus depot.

Implementation Timescales

Given the current levels of preparedness at both the infrastructure sites covered by this proposal - Trent Bridge Depot (garage reconfiguration works complete) and Queen’s Drive Site (power and substation infrastructure in place), and discussions with bus manufacturers on their order fulfilment timescales we are assured that this proposal is deliverable within the scheme timescales. The high level Gantt charts below indicate the expected 2022-2024 project delivery timescales for both projects included within this proposal:

| ID | Task Name | Start | Finish | Duration | Q2 22 | | Q3 22 | | | Q4 22 | | | Q1 23 | | | Q2 23 | | | Q3 23 | | | Q4 23 | | |
|----|---|------------|------------|----------|---------------------------------------|-----|-------|-----|-----|-------|-----|-----|-------|-----|-----|-------|-----|-----|-------|-----|-----|-------|-----|-----|
| | | | | | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov |
| 1 | Nottingham City Transport (NCT) Infrastructure Installation | 01/04/2022 | 31/03/2023 | 261d | [Gantt bar from Apr 2022 to Mar 2023] | | | | | | | | | | | | | | | | | | | |
| 2 | Phase 1 – Bus Manufacture and Delivery (26 Buses) | 30/09/2022 | 31/03/2023 | 131d | [Gantt bar from Sep 2022 to Mar 2023] | | | | | | | | | | | | | | | | | | | |
| 3 | Phase 2 – Bus Manufacture and Delivery (26 Buses) | 02/01/2023 | 30/06/2023 | 130d | [Gantt bar from Jan 2023 to Jun 2023] | | | | | | | | | | | | | | | | | | | |
| 4 | Phase 3- Bus Manufacture and Delivery (26 Buses) | 03/04/2023 | 29/09/2023 | 130d | [Gantt bar from Apr 2023 to Sep 2023] | | | | | | | | | | | | | | | | | | | |

| ID | Task Name | Start | Finish | Duration | Q2 22 | | Q3 22 | | | Q4 22 | | | Q1 23 | | | Q2 23 | | | Q3 23 | | | Q4 23 | | |
|----|---|------------|------------|----------|---------------------------------------|-----|-------|-----|-----|-------|-----|-----|-------|-----|-----|-------|-----|-----|-------|-----|-----|-------|-----|-----|
| | | | | | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov |
| 1 | Nottingham City Council (NCC) Infrastructure Installation | 01/04/2022 | 30/09/2022 | 131d | [Gantt bar from Apr 2022 to Sep 2022] | | | | | | | | | | | | | | | | | | | |
| 2 | Phase 1 – Bus Manufacture and Delivery (8 Buses) | 01/07/2022 | 30/12/2022 | 131d | [Gantt bar from Jul 2022 to Dec 2022] | | | | | | | | | | | | | | | | | | | |

Risk Management

The key risk in regard to this proposal, subject to a successful funding award, is that this will be Nottingham City’s Transport’s first foray into the delivery and operation of electric buses and the associated infrastructure. This risk is mitigated by the fact that Nottingham City Transport’s Engineering Team have been researching electric buses for a number of years and have been in advanced conversations with a number of the main Original Equipment Manufacturers for a significant amount of time. The company have also been active participants in the ZEMO partnership (formerly Low Carbon Vehicle Partnership) bus working group with knowledge exchange on the subject of electric buses between engineering directors being a key aspect of that discussion forum. This coupled with the survey work carried out at Trent Bridge Garage identifying power and infrastructure requirements. Alongside information shared with the company from Nottingham City Council’s Electric Bus Project team on the pitfalls and benefits of this technology - supplemented with advice from their contemporaries within the bus industry. Means that they are ideally placed to deliver a successful project, and this key risk is fully mitigated. For completeness Appendix M provides an extended summary of the risks associated with this proposal.

Risks will be tracked in accordance with Nottingham City Council’s corporate risk management principles, which draw upon the PRINCE2 methodology. The strategy requires the identification and recording of risks, an evaluation of their likelihood and any mitigation actions. This approach ensures that all risks are captured and processed in a consistent manner. Without mitigation, these could result in increased costs to the programme, reductions in the quality of outputs and slippages in timelines, all impacting the overall benefits and outcomes the bid seeks to deliver.

Ownership of the risk register falls with the Programme Manager to be appointed by Nottingham City Council. These risks will be subject to on-going monitoring and mitigated through effective programme management and partnership working, with updates reported to a joint Nottingham City Council and Nottingham City Transport Programme Board.

Issues may arise as the projects develop and their impacts, and any subsequent action to manage them, are to be discussed between the Project Leads and Programme Manager at the earliest opportunity after the issue has been identified. Issues are to be recorded (utilising a Risks, Issues, Actions and Decisions (RIAD) log) by the Programme Manager.

Public Consultation

Early engagement will be sought with the planning and highways authority to ensure that the appropriate permissions and statutory duties and requirements are met prior to any infrastructure installation.

F2. Monitoring and evaluation

Please provide indicative details of how monitoring and evaluation will be used to ensure learning about the project and inform future schemes. A detailed monitoring and evaluation plan is not required at this stage but should explain how the approach to delivering services will ensure that future learning is maximised.

Monitoring and Evaluation Approach

Nottingham City Council has proven in-house monitoring and evaluation capability which will deliver the evaluation for this package. The team has extensive industry experience in monitoring and evaluation for major transport interventions and has published several peer reviewed journal papers in that field. Examples include two major evaluations for the Workplace Parking Levy (WPL) and The Nottingham Ring Road Improvement Scheme (NRIS). The Evaluation approaches were tailored for the individual schemes.

The WPL evaluation was based around a hybrid Theory of Change/Realistic evaluation approach but also used quasi experimental components and was conducted in partnership with Loughborough University with oversight from the DfT. Monitoring and evaluation of the ZEBRA programme will be undertaken to:

- Assess the extent to which the programme achieves its aims and objectives through an assessment of outcomes and impacts; and
- Assess what aspects of the programme have worked well, or less well, in terms of through a review of the delivery process.

We will work with DfT to co-develop a battery of indicators that are capable of monitoring progress towards achieving individual objectives over an agreed evaluation period. A baseline for these will be established and the indicators tracked throughout the evaluation period indicators could include:

- Bus patronage
- Bus journey times and reliability
- Modelled changes to NO₂, particulate and Carbon emissions

- Monitored changes to changes to NO2 and PM 2.5
- Surveys of local Stakeholders (i.e. Business and Residents) before and after to understand how they have responded to the implementation of the electric buses
- Impact on jobs, training, apprenticeships and wider economic development

We will also participate in DfT and ZEMO knowledge exchange forums as we have done historically in relation to projects funded through previous Low and Ultra Low Emission Bus funding and also host national and international study visits to support the acceleration of the uptake in electric bus technology and the advancement of public transport decarbonisation.

F3. Procurement, State Aid and subsidy rules

Please confirm you have received advice on legal requirements in relation to procurement, subsidy control and state aid.

Please also demonstrate how you will abide by legal requirements in relation to procurement, subsidy control and state aid, including an explanation, together with supporting evidence, of how you will comply with the principles under the UK-EU Trade and Cooperation Agreement.

Please limit your response to 500 words.

Legal Advice in relation to Procurement, State Aid and Subsidy Rules

Nottingham City Council has commissioned comprehensive independent legal advice in relation to procurement, subsidy control and state aid from BrowneJacobsen LLP and their subsidy control specialists. They will also provide additional support in relation to compliance with the EU-UK Trade and Co-operation Agreement “6 Principles” should this EOI be taken through to the full business case development stage.

A full public procurement exercise will be undertaken for both projects. Existing procurement frameworks such as Crown Commercial Services or a full blown competitive tender competition will be used to award any contracts for the supply of the buses and infrastructure.

In relation to State Aid, there is no expectation for this proposal to have any compliance issues with the Northern Ireland protocol. The purchase of Hydrogen Buses from Northern Ireland based Wrightbus is not being considered as part of it, but in any case buses purchased from manufacturers will be made at market rates meaning manufacturers will not be receiving any subsidy. If we were to procure battery electric buses from Wrightbus. We would ensure that all buses and infrastructure relating to this proposal will be purchased on market terms at market rates to ensure that no subsidy or State Aid is granted to third parties which could have an impact on trade between Northern Ireland and the EU.

An initial review of the “6 Principles” in relation to the EU-UK Trade Co-operation agreement (TCA), taking on board advice from BrowneJacobsen, has given us comfort that they can be met on environmental grounds with the key point being that the market intervention rate

of 75% for infrastructure and the cost difference between an electric and diesel bus is the least distortive way to deliver decarbonisation of buses locally. Discussions with local operators have also indicated that funding at a lower rate would not be sufficient for them to be able to invest and build the business case for the delivery of bus decarbonisation locally. The advice we have received from BrowneJacobsen also indicates that the prior State Aid regime will still be relevant in determining whether a project is compliant with the TCA “6 Principles”. As the funding formula for ZEBRA mirrors that used for the previous Ultra-Low Emission Bus fund which was State Aid compliant, we are given further comfort that this proposal will meet all legal requirements in relation to subsidy, procurement and State Aid.

If this EOI progresses to the full business case stage we will complete a detailed analysis covering the factual, policy and economic considerations of this bus decarbonisation project along with an auditable paper trail in order to demonstrate full compliance with the “6 Principles”.