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Root Power (South) Limited

Proposed Battery Energy Storage System
Luzlow Lane, Werrington
Construction Traffic Management Plan

April 2025

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Client Commission			
Client:	Root Power (South) Ltd.	Date Commissioned:	April 2024

LTP Quality Control			
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LTP PROJECT TEAM

As part of our commitment to quality the following team of transport professionals was assembled specifically for the delivery of this project. Relevant qualifications are shown and CVs are available upon request to demonstrate our experience and credentials.

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PROPOSED BATTERY ENERGY STORAGE SYSTEM LUZLOW LANE, WERRINGTON CONSTRUCTION TRAFFIC MANAGEMENT PLAN

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1. INTRODUCTION

1.1 Background

1.1.1 Local Transport Projects Ltd (LTP) has been commissioned to produce a Construction Traffic Management Plan (CTMP) in support of a full planning application for a proposed Battery Energy Storage System (BESS) on land to the west of Luzlow Lane in Werrington, Staffordshire. A plan of the proposed site layout is included in ES Figure 1.2.

1.1.2 The local planning authority for the site is Staffordshire Moorlands District Council (SMDC) and the local highway authority is Staffordshire County Council (SCC).

1.1.3 A Transport Statement (TS) (LTP, 2025) has also been produced alongside this CTMP, which is included as ES Appendix 7.1 in this application.

1.2 Scope

1.2.1 The scope of this report outlined below:

- ***Introduction*** – Brief summary of the site location, proposed development and planning history;
- ***Local highway network*** – Description of the local highway network adjacent to the site, including details of key geometric features, speed limits and waiting restrictions.
- ***Construction traffic access arrangements*** – Description of the proposed access arrangements for construction and staff vehicles arriving at and departing the site.
- ***Construction programme*** – Details of the anticipated construction period at the site, the vehicles that are to be used and the expected frequency of construction vehicle movements at the site.
- ***Traffic management measures*** – Description of traffic management measures that are to be implemented to minimise the effects of traffic travelling to and from the site during the construction period, including reference to:
    - Measures to reduce peak period traffic movements;
    - Measures to reduce conflict;
    - Parking arrangements and manoeuvring facilities;
    - Promoting car sharing amongst staff;
    - Measures to protect pedestrians;
    - Measures to ensure appropriate storage of materials;
    - Highway cleaning regime; and
    - Signing strategy.

2. SITE BACKGROUND

2.1 Site Location, Existing Use & Planning History

2.1.1 The proposed BESS is to be installed on existing agricultural land to the west of Luzlow Lane in Werrington, Staffordshire and is bound on all sides by agricultural land. The approximate location and boundary of the site and proposed access track alignment is highlighted in red in Image 1 below.

Image 1: Site Location

Source: Copyright Google Earth Pro (License Key-JCPMR5M58LXF2GE)

2.1.2 It is understood that there have been no recent pertinent planning applications relating to the application site.

2.2 Development Proposals & Access Arrangements

2.2.1 The report is based upon the proposals outlined on the site layout plan included as ES Figure 1.2. The development proposals will be seeking full planning consent to provide a BESS contained within a fenced compound and separate transformer, with further details expected to be submitted as part of the planning application.

2.2.2 It is expected that the delivery and construction/installation period of the proposed BESS is expected to be 14 months. The trip generation projections associated with the proposed development are presented in Section 4 of this report.

2.2.3 Vehicular access to the site is to be provided via an existing field access connecting with Luzlow Lane on the eastern site boundary, which is expected to be widened as part of the development to accommodate the largest construction vehicle movements. The access is expected to be utilised during the construction, installation, and maintenance periods.

Photo 1: Existing Field Access on Luzlow Lane

2.2.4 Vehicle parking for site workers during all stages of construction and operation will be accommodated on-site with no vehicles allowed to park or wait on the adjoining highway network during any stage of the development.

3. SITE ASSESSMENT

3.1 Local Highway Network

3.1.1 As previously mentioned in Section 2.2, the site is to be accessed from Luzlow Lane utilising the existing field access which is expected to be widened as part of the proposals to accommodate the largest construction vehicle movements. Luzlow Lane is a two-way single carriageway that measures approximately 5.7m in width and is subject to a derestricted speed limit (60mph) within the vicinity of the site. The road provides access to Bagnall Road and Thorney Edge Road via a priority junction approximately 900m to the north of the site access and Armshead Road and Thorney Edge Road approximately 60m to the south of the access. There are not any existing waiting or parking restrictions in place on Luzlow Lane within the vicinity of the site.

Photo 2: Luzlow Lane

3.1.2 Approximately 60m to the south of the existing site access, Luzlow Lane forms a priority crossroads junction with Thorney Edge Road (to the east) and Armshead Road (to the west) with an existing farm access forming the southern arm of the crossroads.

Photo 3: Luzlow Lane/Armshead Road/Thorney Edge Road Crossroads

3.1.3 Armshead Road is a two-way single carriageway measuring approximately 6.2m in width and is subject to a derestricted speed limit (60mph) in the vicinity of the crossroads junction with Luzlow Lane and Thorney Edge Road, although the speed limit reduces to 40mph approximately 180m to the south-west of the junction. The speed limit reduces again to 30mph on the approach to the built-up extents of Werrington, with the road providing access to Rownall Road via a priority crossroads junction, which in turn provides access to the A52 approximately 60m to the south of the junction with Armshead Road.

3.1.4 The A52 forms a major east-west road running between Newcastle-under-Lyme and Mablethorpe in Lincolnshire via Derby, Nottingham, Grantham, Boston and Skegness. Locally, the road forms a two-way single carriageway measuring approximately 6.3m in width and is subject to a 40mph speed limit. The A52 provides access to the A520 approximately 1.1km to the east of the Rownall Road junction and the A5009 and Bucknall Road approximately 5.5km to the west via signalised crossroads.

3.1.5 Luzlow Lane approximately 900m to the north of the site access forms a simple priority T-junction with Bagnall Road and Thorney Edge Road. Bagnall Road is a two-way single carriageway measuring approximately 6.7m in width and is subject a derestricted speed limit (60mph). The road continues to the north-west providing access to Bagnall village.

3.2 Access Via Sustainable Modes

3.2.1 Due to the rural nature of the site, the sustainable transport provision (e.g. walking, cycling and public transport) is limited within the vicinity of the site. Furthermore, the nature of a BESS development means that trips by construction staff via sustainable modes are unlikely to be feasible.

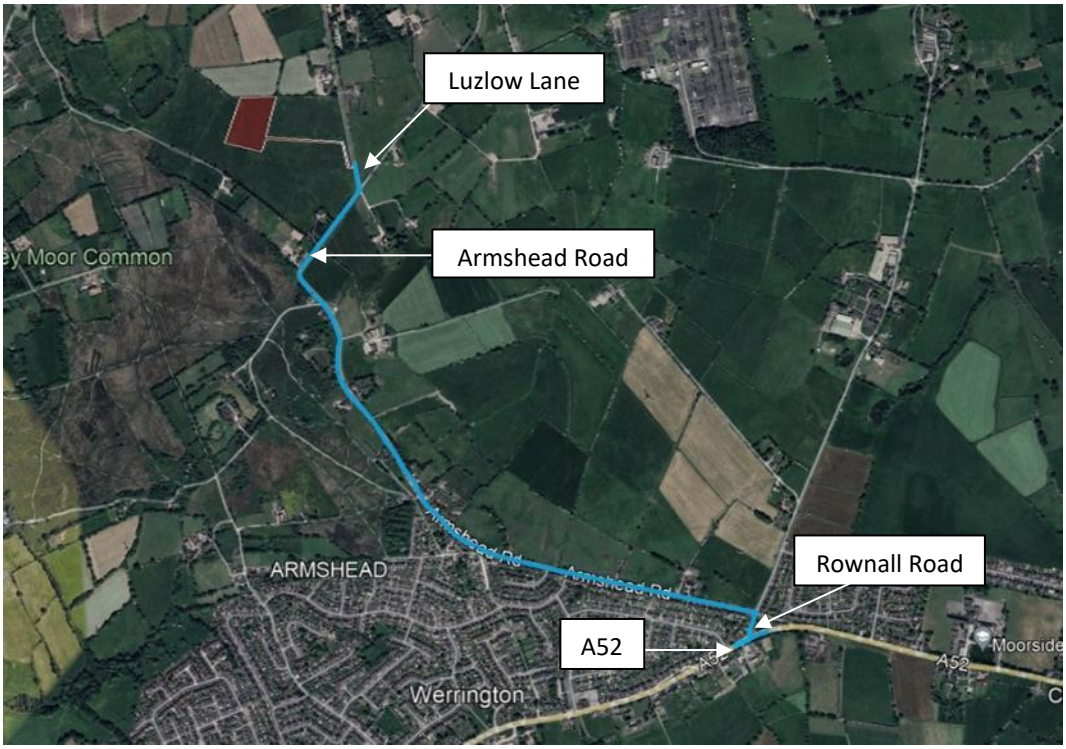
3.3 Proposed Construction Vehicle Routeing

3.3.1 The likely constraints relating to the routeing of Heavy Goods Vehicles (HGVs) associated with the construction of the site have been considered, with the proposed routeing for all large construction vehicles accessing/egressing the site during the construction phase outlined below. All large vehicles would be expected to utilise this route back to the 'A' road network, with HGVs currently expected to utilise the identified route without issue. Vehicles arriving at the site are advised to arrive via the following route:

- A52 – Rownall Road – Armshead Road – Luzlow Lane.

3.3.2 The route back to the primary road network (described as travelling away from the site) is the above routeing reversed. The proposed construction traffic route is highlighted in blue within Image 2.

Image 2: Construction Traffic Routeing



Source: Copyright Google Earth Pro (License Key-JCPMR5M58LXF2GE)

3.3.3 Construction staff trips made by car and/or Light Goods Vehicles (LGVs) would also generally be expected to utilise the route outlined above to access/egress the site. Although there are not expected to be any constraints relating to cars/vans utilising Luzlow Lane to the north or Thorney Edge Road.

3.3.4 All relevant parties involved in making deliveries of construction materials, once the construction of the site commences, will be instructed on the above routeing arrangements before arriving/departing the site. This arrangement is to be strictly enforced, and all sub-contractors and suppliers are to be monitored to ensure that they use the defined route.

3.4 Swept Path Analysis

3.4.1 Swept path analysis for the site has been undertaken as part of the TS (LTP, 2025) to establish whether the largest vehicle expected to access/egress the site can adequately navigate the site access junction with Luzlow Lane, Luzlow Lane/Armshead Road/Thorney Edge Road priority crossroads and manoeuvre within the site. The results of the swept path analysis demonstrate that a standard articulated HGV can adequately access/egress the site via the existing access connecting with Luzlow Lane, subject to some minor widening/surfacing upgrades. The results also demonstrate that a standard articulated HGV can suitably manoeuvre along the internal access road.

3.4.2 It is acknowledged that a standard articulated HGV would be required to utilise the full extents of Luzlow Lane carriageway to turn into the site and therefore suitable traffic management measures would be implemented on-site during the construction period to facilitate the movements of large construction vehicles with further details provided in Section 5.

3.4.3 It is considered that if a standard articulated HGV is able to traverse the access route, then other smaller vehicles (e.g. LGVs) would also be able to adequately access and egress the site.

4. CONSTRUCTION PROGRAMME

4.1 Construction Programme

4.1.1 Whilst the exact timing details at the site are currently unknown, the delivery and construction/installation period of the proposed BESS is expected to take place over a 14-month period, and consist of six phases:

- ***Phase 1***: Site preparation, including highways access;
- ***Phase 2****:* Site civils and earthworks;
- ***Phase 3***: BESS equipment deliveries;
- ***Phase 4****:* Mechanical installation;
- ***Phase 5***: Electrical installation; and
- ***Phase 6:*** Demobilisation and Site Clearance.

4.1.2 During the above construction period there would be trips associated with the arrival and departure of construction staff as well as the delivery of parts and construction materials.

4.1.3 The operating times for construction activities will be carefully managed. It is envisaged that construction activities will take place during suitable daytime hours across the week (Monday to Friday) in order to protect local amenity, possibly with some limited construction activity and HGV movements on Saturdays.

4.2 Construction Phase Traffic Generation

4.2.1 The delivery and construction/installation period for the BESS is expected to last for approximately 12-14 months. Information provided by the Applicant indicates that construction traffic generation over this period will total approximately 302 two-way HGV movements (arrivals and departures).

4.2.2 Table 1 summarises the estimated HGV construction traffic based on information provided by the Applicant. Details of the average daily two-way HGV movements has also been provided.

Table 1: Estimated HGV Construction Traffic Generation

Vehicle Type	Total HGVs	Two-Way HGV Movements
Surfacing & Access Road	65	130
Battery Containers	48	96
DNO Substation	2	4
Transformer/Inverter Units	8	16
Switch rooms	2	4
Welfare/LV Control Room	1	2
Ancillary Equipment	1	2
Fencing & Gates	2	4
Miscellaneous Deliveries	20	40
Crane Deliveries	2	2
TOTAL	**151**	**302**

4.2.3 Information provided by the Applicant indicates that the site is expected to generate an average of 16 two-way HGV trips per day during the construction phase.

4.2.4 It is expected that the maximum number of construction staff on-site will vary subject to the construction schedule, with a maximum of 10 staff expected to be working on site at any one time. Staff trips will be made by cars, minibuses or vans/small LGVs. Staff vehicle movements would typically occur at the start and end of the working day and generally not coincide with the movement of large construction vehicles.

4.2.5 Car sharing amongst staff is to be promoted and will be a realistic travel mode for those staff who are employed by the same service company/sub-contractor (for example, civils contractor, electrical engineer).

4.2.6 Vehicle parking for site workers during all stages of construction will be accommodated on-site. No vehicles will park on the adjoining road network at any stage.

4.2.7 It is also noted that vehicle trips generated during the construction phase are temporary and would cease upon completion of the works at the site.

4.3 Post Construction

4.3.1 Generally, the BESS would operate on an unmanned basis. It is understood that the BESS would generate approximately between 10 and 20 vehicle trips per month to support site operations and general maintenance activities at the facility. These trips will be typically made by cars or LGVs (e.g. vans). While the temporary construction compound will be removed following construction completion, space will be retained on-site for LGVs to turn around, ensuring vehicles can enter and exit in a forward gear.

5. TRAFFIC MANAGEMENT MEASURES

5.1 Introduction

5.1.1 Although the expected vehicle trip generation is expected to be relatively low (as identified in Section 4.2), there are a number of traffic management measures that are proposed to reduce the impact during the construction period, and these are outlined below.

5.2 Measures to Control Traffic Movements

5.2.1 A banksman would be on-site at the access junction on Luzlow Lane to manage all vehicle movements during the construction period. All HGVs would enter and exit the site in a forward gear and turn right out of the access. In order to maximise visibility, the existing vegetation will be trimmed back and maintained for the duration of construction.

5.2.2 Deliveries to the site are generally expected to occur on weekday daytime periods, which will ensure that construction activities at the site do not adversely impact on the operation of the local highway network during peak periods. Limiting site deliveries will also protect amenity for nearby residents living in properties along the construction route. Deliveries to/from the site will be pre-planned and scheduled to avoid conflicts and ensure that any impacts associated with construction traffic movements can be mitigated.

5.3 Measures to Reduce Conflict

5.3.1 As mentioned previously, a banksman will be available on-site at all times during the construction period to coordinate the movement of vehicles at the existing access on Luzlow Lane. This will ensure that two large vehicles do not attempt to use the access junction at the same time and therefore ensure that safety on the access road and the public highway is not compromised.

5.3.2 A daily delivery sheet will also be used to coordinate deliveries in order to avoid vehicles arriving simultaneously and is to be provided on a weekly basis to the construction supply chain so to mitigate against conflicting HGV movements along the proposed delivery route, with vehicles held on-site along the site access road to avoid two-way HGV movements at the site access, all deliveries will be preplanned and staggered throughout the day to minimise the potential of conflict.

5.4 Parking Arrangements & Manoeuvring Facilities

5.4.1 Construction staff are likely to travel in cars or small vans and these trips would typically occur at the start and end of the working day and therefore not coincide with the movement of large vehicles. As previously outlined, car sharing amongst staff is to be promoted and expected to form a realistic travel mode for those staff employed by the same company.

5.4.2 Adequate parking provision will be provided in order to accommodate all operatives on-site. As such, an adverse impact on the operation of the surrounding highway network is not envisaged.

5.4.3 The internal compound area is to be arranged in such a way that all delivery vehicles will be able to enter and exit in a forward gear, reducing the number of reversing manoeuvres that are required on-site.

5.5 Measures to Protect Pedestrians/Cyclists

5.5.1 There is limited pedestrian infrastructure within the vicinity of the site, with no footways on Luzlow Lane. Where necessary, temporary signing/barriers will be provided to safeguard pedestrians. Furthermore, a banksman will be on-site at the access junction to direct large construction vehicles in and out of the site, therefore ensuring that any pedestrian and cycle movements on Luzlow Lane are appropriately managed.

5.6 Storage of Materials

5.6.1 All plant and construction materials are to be securely stored within the site compound when not in use and therefore will not adversely affect the operation of the public highway. As much waste as possible is to be recycled, and where possible vehicles delivering materials to site will leave with waste.

5.6.2 Contractors are to work with reference to best practice guidance including the *'Considerate Constructors Scheme – Code of Considerate Practice'* (CCS, 2017), which makes specific reference to minimising the impact of deliveries, parking and working within the highway.

5.7 Highway Cleaning Regime

5.7.1 Throughout construction, wheel wash facilities will be provided on-site to reduce the risk of mud/dust/dirt being transported to public roads, with a road sweeper utilised when required. Monitoring should be undertaken by the site manager in order to assess the cleanliness of the adjacent carriageway on an ongoing basis.

5.8 Traffic Signing Strategy

5.8.1 It is recommended that a suitable temporary signing strategy be implemented to facilitate safe access to/from the BESS site for HGVs associated with the development. The temporary signing strategy would be subject to SCC Highways approval and be installed prior to the commencement of works at the site and maintained as necessary for the duration of the works.

5.8.2 A temporary signing along the identified construction route would be introduced including Luzlow Lane in the vicinity of the access junction, to warn other road users of the likely presence of construction vehicles making turning movements. All signing will be in accordance with The Traffic Signs Regulations and General Directions (TSRGD) 2019.

6. REFERENCES

CCS (Considerate Constructors Scheme), 2017. Considerate Constructors Scheme – Code of Considerate Practice.

LTP (Local Transport Projects Ltd), 2025. Proposed Battery Energy Storage System, Luzlow Lane, Werrington. Transport Statement.