

6.0 Planning Assessment

This chapter explains why a BESS is being promoted at this location, how the Site has been selected, and details the assessment work that has been undertaken to inform the design layout and consideration of fit with relevant planning policies.

6.1. Why Battery Energy Storage?

As mentioned in chapter 4, the UK is working towards zero carbon in 2050. In order to achieve this target, the UK needs to radically increase its use of renewable energy.

However, since September 2020, the National Grid Electricity System Operator (ESO) has issued four electricity margin notices (EMNs), warning that the buffer of electricity supply required to ensure the lights remain on was too small¹.

The Energy Trend Report (January-June 2021) which focuses on the supply and demand of coal, oil, gas, electricity and renewables in the UK also demonstrates that renewable generation fell on the same period last year due to less favourable conditions in 2021, particularly for wind. Therefore, nowadays, the influx or intermittent renewable generation such as wind turbines and solar farms has led to problems and congestion on the grid.

As the UK continues the transition to renewable power generation and mass adoption of new technologies changes the profile of electricity demand, utilities must find new, reliable, and resilient methods of balancing demand and supply.

Battery storage can support wind and solar generation dips, especially in the face of unpredictable weather patterns and rising electricity demand as a result of new technologies such as electric vehicles.

Battery energy storage will be a long-term player in the grid of the future, albeit scaling this technology remains the biggest challenge. When coupled with wind and solar generation, large-capacity batteries can store excess energy during peak solar or wind hours, dispatching when demand is high. While battery storage technologies have become more cost-effective with significant advancement in recent years, energy storage installations have not kept pace with the closure of power plants.

Battery energy storage is also considered to be a low carbon source of energy as it allows greater supply of intermittent renewable energy to be stored and released on the local and national grid network, which has strong policy support at a national and local level as mentioned above.

Therefore, battery energy storage, in an economic sense, provides an answer to the expansion of variable renewables and helps to 'balance the system'. The need to roll out new grid connected batteries at an unprecedented speed and scale is required now if the UK is to deliver net zero electricity emissions by the middle of the next decade. Such is the scale of the challenge that Imperial College London have estimated that 'over 140GW of grid-connected batteries will be needed to achieve our net zero ambitions, representing a 100-fold increase on the volume of use today².

¹ [Meeting decarbonisation goals with reliability and resilience | Current News \(current-news.co.uk\)](https://www.current-news.co.uk/news/2020/09/01/meeting-decarbonisation-goals-with-reliability-and-resilience/)

² <http://www.imperial.ac.uk/news/223373/uk-offshore-wind-target-must-least/>

6.2. Site Selection Process

Energy storage projects need to be sited in locations where there is a cost effective and technically viable connection into the National Grid's transmission infrastructure, which can accommodate both the import (for charging) and export of electricity at the level which can be provided by the proposed storage facility.

The Proposed Development is located adjacent to Hams Hall Substation which is part of, and is operated by, the National Grid. Hams Hall Substation is one of twenty National Grid substations in England that the Applicant has determined to have adequate capacity available for its requirements, i.e. a minimum of 300MW of import capacity and 349.9MW of export capacity available (this analysis has been conducted using National Grid's publicly available ConnectNow tool³). Of these 20, following analysis there is not adequate land available at 12 of these substations as a result of limited space within the National Grid's existing substation compounds and lack of potential to expand onto surrounding land.

In 2019 National Grid announced two Pathfinder programmes: A Stability Pathfinder and A Constraint Management Pathfinder. The aim of the pathfinders was to identify and develop energy storage assets to provide stability and control constraints on the network. They identified two geographical bands in England (between B8 and B9), in which Hams Hall Substation falls, that were strategically capable of achieving the required level of stability and control (see Appendix 1). Only 2 of the remaining 8 substations originally shortlisted from the 20 are located between bands B8 and B9. Both are in Green Belt and Hams Hall is the only option for a project of this scale in the constraint management zone.

Hams Hall Substation is identified by National Grid's Stability Pathfinder as one of 3 substations in the Midlands rated as 'high' for its effectiveness in providing stability support at the national level. With only 2 being located between B8 and B9. Hams Hall Substation is also a Main Integrated Transmission System (MITS) node which means that connecting to this type of substation minimises wider works on the network and the diversity of constraint management services that can be provided to National Grid are maximised. In addition, a battery connected to a National Grid substation in the Midlands will help balance excess wind generation in the north with high demand in the south.

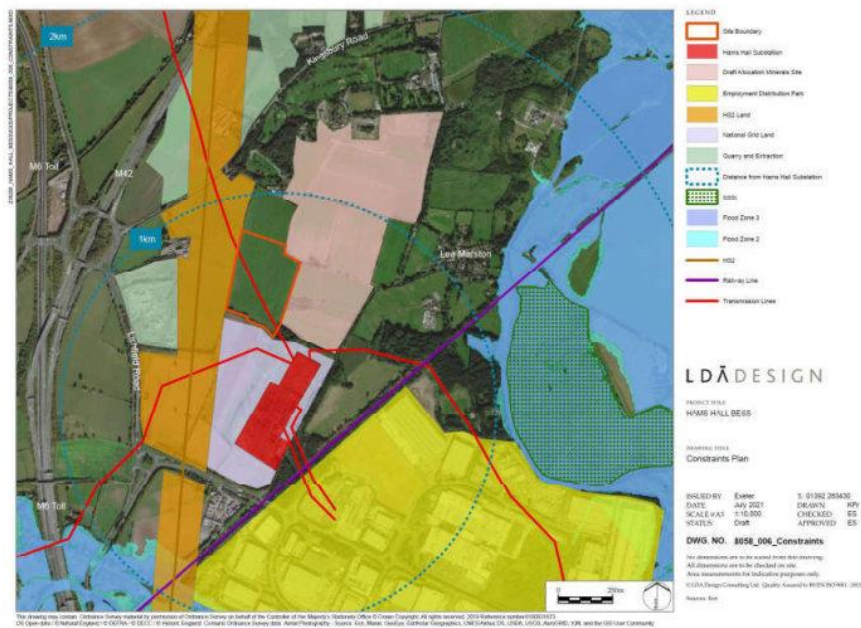
Hams Hall Substation has therefore been selected as a suitable location for a BESS by the Applicant from a nationwide review of locations. It should be noted that all of the locations highlighted within the Pathfinder are within Green Belt. This means that all options to solve this reinforcement issue will almost certainly require development on Green Belt land.

Figure 6.1 highlights that apart from the Green Belt designation, there are a range of other constraints around Hams Hall Substation that need to be considered in selecting the Site. The land surrounding the Hams Hall Substation is owned by National Grid. It is criss-crossed by a network of overhead lines, pylons and cables with sterilised buffers within which there can be no development, thereby making BESS development at a suitable scale unfeasible. The HS2 DCO area takes out a significant proportion of land to the west of Hams Hall Substation and makes development beyond it difficult. Significant areas to the

³ <https://customer.nationalgridet.com/s/pre-application>

west and north are already in use as quarry and extraction pits, whilst the land identified in green is a Minerals Safeguarding Area. The land highlighted in yellow is the extent of Hams Hall Distribution Park, an employment allocation located on the site of the former Hams Hall Power Station. Beyond these locations the distance from the Substation increases, and the proximity of Lea Marston and Curdworth, which include numerous listed buildings, closes. Furthermore, Whitacre Heath SSSI and extensive flood zone 2 and 3 areas cover a large swathe of land to the east of the Substation. As a result of these constraints, the Proposed Development Site is considered to offer the only viable option for accommodating a BESS in close proximity to Hams Hall Substation.

Figure 6.1 Site Selection – Constraints analysis



6.2.1. Very Special Circumstances

As outlined, battery storage provides a vital source of flexibility for the energy system. It can support the integration of low carbon technologies, reduce the overall costs of operating the system and help avoid or defer costly reinforcements to the networks. As such, battery storage projects are nationally important infrastructure for supporting the delivery of the Government’s target of reducing carbon emissions.

Energy storage projects need to be sited in locations where an available connection into the National Grid exists, which can accommodate both the import and export of electricity at the level which can be provided by the proposed storage facility. Locations adjacent to main substations are necessary as this reduces and requirement for potentially visually

intrusive connection infrastructure, while also maximising the electrical efficiency of the storage facility and its interaction with the grid.

The Proposed Development is located adjacent to Hams Hall Substation which is part of, and is operated by, the National Grid. Hams Hall Substation is a MITS node, which is defined by the National Grid as a transmission substation with connections to more than 4 transmission circuits excluding Grid Supply Point transformer circuits. The definition of a MITS Substation is designed to reflect the need for a connection to be sufficiently deep into the main integrated transmission system to provide the diverse constraint management options described below. MITS connection works are defined as those transmission reinforcement works required from the connection site to a MITS Substation. In summary, by connecting to a MITS Substation, wider works on the network are avoided and the diversity of constraint management services that can be provided to National Grid are minimised.

The Proposed Development will offer benefits in various forms and to various stakeholders, including:

- Enabling the integration of more renewables (especially solar PV and wind) in the energy mix - 1MW of energy storage enables 4MW of renewables to connect to the grid meaning Hams Hall alone would enable 1.4GW of renewables in the UK;
- Decarbonising the electricity grid within the Borough and nationally – this project will therefore assist the Council deliver the commitments made in its Climate Emergency Action Plan;
- Decreasing the need to invest in new conventional generation capacity and upgrades, resulting in financial savings and reduced emissions especially from electricity generation; and
- Improving energy security by optimising the supply and demand, thus reducing the need to import electricity via interconnectors.

Hams Hall Substation has been selected by the Applicant following a national review of potential sites for a large-scale battery, based on various factors relating the utility and robustness of the connection to the grid as set out below.

There is no available land within 1km of the substation which is outside of the Green Belt. As the strategic substation is in the Green Belt, there is little choice but to locate critical supporting infrastructure in the Green Belt. That being so, as explained throughout this document, it is fortuitous that the application site is ideal in every other respect.

Given the national importance of the Proposed Development in providing infrastructure for supporting the delivery of the Government's target of reducing carbon emissions, it is therefore considered that Very Special Circumstances for development in the Green Belt are clearly demonstrated in accordance with Paragraph 147 of the NPPF.

6.3. Impacts on the Green Belt

Paragraph 137 of the NPPF states *“the fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open; the essential characteristics of Green Belts are their openness and their permanence.”*

The five purposes of Green Belt as set out in paragraph 138 of the NPPF are:

1. *“to check unrestricted sprawl of large built-up areas;*
2. *to prevent neighbouring towns merging into one another;*
3. *to assist in safeguarding the countryside from encroachment;*
4. *to preserve the setting and special character of historic towns; and*
5. *to assist in urban regeneration, by encouraging the recycling of derelict and other urban land.”*

A Green Belt Assessment submitted with this Planning Application identifies that the Site does not contribute to purpose 1 or 2 of paragraph 138.

The Assessment goes on to state that the Site plays a limited role in contribution to purpose 3 – to assist in safeguarding the countryside from encroachment. Development of the Site would result in some very limited harm to this purpose, which would be very limited owing to the contained nature and limited visibility of the Site and Proposed Development. The surrounding wider agricultural landscape would remain characteristic and predominant.

Overall, it is concluded that the strategic function of the Green Belt purpose 3 would remain intact and purposes 1, 2 and 4 would be unaffected and 5 is not relevant.

6.4. Access and highways

A Transport Statement and Construction Traffic Management Plan (CTMP) have been prepared in support of the Proposed Development. The Transport Statement assesses the suitability of access to the Site and the potential impact of the Proposed Development during construction and operation.

6.4.1. Site Access – Construction

Access to the site will be via the existing access from the A4097 which has been developed for the construction of HS2. This access is of sufficient width to accommodate articulated vehicles and has visibility splays of 2.4 metres by 160 metres commensurate with the 50 miles per hour speed limit.

6.4.2. Site Access – Maintenance

Access for the future maintenance vehicles will be via a proposed new HS2 access road from Hams Lane which passes to the south of the site.

6.4.3. Traffic Impact

The main period for traffic movements associated with the Site will occur during construction, with only four maintenance visits required per week when the BESS is operational. It is anticipated that there will be in the region of 1,440 HGV movements during the construction phase, which is anticipated to take approximately 18 months, with a typical average of 7 deliveries (14 vehicle movements) per day. In addition, it is expected that a daily workforce of around 20 personnel may be required on site at any one time.

In summary, the Proposed Development provides an opportunity to store electricity provided by zero carbon energy generating facilities at a location which can be safely accessed by construction and operational vehicles and at which the temporary traffic impacts during construction would be minimal. The Proposed Development is therefore in accordance with Core Strategy Policy NW10 (Development Considerations), Emerging Local Plan Policy LP25 (Transport Assessments) and paragraph 109 of the NPPF.

6.5. Ecology and Biodiversity

A Phase 1 Habitat Survey was carried out in July 2021 within a survey area that encompassed the Site and adjacent land. An Ecological Appraisal is submitted with the application. The Ecological Appraisal describes and evaluates the habitats and features present on Site and assesses their potential to support protected species. It also identifies potential impacts of the scheme on biodiversity and sets out retention, enhancement or mitigation measures needed. A summary of key findings of the appraisal is provided below.

6.5.1. Statutory designated sites and Non-Statutory designated wildlife sites

Whitacre Heath Site of Special Scientific Interest (SSSI) is located approximately 1km east of the Site. The Site falls within the Impact Risk Zone of this Site. However, given the geographical separation of the Site from the SSSI and the nature of the Proposed Development, no direct or indirect impacts on the SSSI are anticipated.

6.5.2. Habitats

The Proposed Development footprint will result in the temporary loss of approximately 9 ha of improved grassland and 0.092 ha of marshy grassland. In addition, improved grassland will be temporarily impacted by the proposed temporary access route, which will be reinstated following the completion of the works. The improved grassland habitat that forms the majority of the Site does not meet the criteria for any Habitats of Principal Importance grassland habitat types.

The marshy grassland area recorded at the north-east of the Site is considered to be a local priority habitat. This habitat is small in extent (0.092 ha) and separated from other areas of similar wetland habitat. This habitat is not considered to meet the criteria to qualify as a Habitat of Principal Importance as it is not botanically species-rich in plants.

6.5.3. Protected species

The Ecology Appraisal summarises the potential for, or evidence of, presence of protected and notable fauna in the Site. The Ecological Appraisal considers that, subject to the application of the proposed mitigation identified, the Proposed Development is unlikely to have an adverse impact on protected species.

6.5.4. Retention, enhancement and mitigation

The following measures for habitat creation and enhancement measures are proposed in principle:

- A 9-10m buffer zone from the hedgerows on the boundaries of the Site will be included within the development, using a mix of native shrub species and broadleaf trees, including the use of fruit and berry bearing species for the benefit of species such as birds and badger;
- New areas of native wildflower meadow will be created within the unfenced areas of the Site.
- Areas of dense scrub at the boundaries of the Site, to provide further sheltering opportunities for amphibians, reptiles, nesting birds and badger;
- Creation of new native species-rich hedgerow on the northern boundary of the main area of the Site;
- The infilling of gaps in existing hedgerows; and
- Tree planting that is in keeping with the local area.

6.5.5. Biodiversity Net Gain

The Applicant is committed to delivering biodiversity gain through development. Whilst the Proposed Development will not achieve biodiversity gain in terms of area-based habitat units, it will achieve biodiversity gain in relation to linear habitat units i.e. hedgerow.

The preferred option will be to enhance at least 1.5 ha of grassland within the same landownership (see blue line areas of Drawing number 04-7625), to be semi-improved neutral (species rich) grassland. The off-site compensation area will be managed for 30 years, and the on-going management of the habitats will be prescribed through a LEMP, to achieve a good condition of this habitat and provide long term biodiversity gain. The enhancement of other suitable habitats will also be considered to help generate sufficient biodiversity gain, as necessary. The off-site compensation areas will require a Phase 1 habitat survey and condition assessment in order to confirm the baseline value and the enhancement potential in Biodiversity Unit terms.

6.6. Landscape and visual impact

A Landscape and Visual Impact Assessment has been conducted of the Proposed Development and is included in the Planning Application submission.

6.6.1. Effects on Landscape Character

There are no designated landscapes, such as Areas of Outstanding Natural Beauty, within the Site or study area that would be potentially affected by the Proposed Development.

The iterative design process has carefully considered the siting of the Proposed Development within landscape of LCA 12 – Middleton to Curdworth Tame Valley Farmlands. The landscape fabric of the Site, including the field pattern and structure, would be retained. There would be limited changes to the topography of the Site. Effects on landscape character are greatest within the Site and its immediate context where the landscape would change from having an agricultural character to that of a BESS and associated infrastructure. However, given the low heights of the Proposed Development, the majority of development at approximately 3.5m, screening provided by the existing Site field boundary vegetation, and intervening field boundary vegetation, the scale of effect would reduce rapidly with distance beyond the Site, set within the context of existing National Grid and road infrastructure.

Effects on LCA 12 – Middleton to Curdworth Tame Valley Farmlands would be at most of **Moderate-Slight significance** and **Adverse** within the Site itself and within its immediate context. A **Slight** and **Adverse** landscape effect would extend approximately 100m to the north to the field boundary at Reindeer Park and along some fringes of the adjoining fields where there are evident gaps. Beyond these areas, effects on this LCA would be **Minimal** and **Neutral**.

Planting proposed along the Site boundaries would further reduce predicted landscape effects beyond the Site as it matures. Landscape and ecological enhancements as part of the proposed landscape planting would be retained and left to support the Biodiversity Net Gain (BNG) achieved on-site.

6.6.2. Effects on Visual Receptors

The potential visibility of the Proposed Development would be largely limited given the relatively low elevation of the Site, relative flat topography of the surrounding area, low heights of the various proposed structures, and presence of existing vegetation along the Site boundaries and across the immediate surroundings. Field work has established that visibility of the Site is found to be largely limited to views up to approximately 150m to the north and partial inward views gained to the east (up to approximately 450m) and west (approximately 200m to 400m). Inward views to the north and south were found to be screened by landform and mature vegetation.

Visual effects arising from the Proposed Development would be at their greatest for visual receptors west of the Site, including footpath 165/M16/1, Dunton Hall and a short section of Kingsbury Road, and areas to the east including footpath 206/M14/1, a short section of Hams Hall Lane and an outlying Lea Marston property. From these locations in the short to medium term, effects would be of **Slight significance** and **Adverse**. As mitigation planting matures visual effects experienced from these locations would reduce to **Slight-Minimal** and, on balance, **Neutral**.

Outside of these locations effects on visual receptors would be **Minimal** and **Neutral** given the very limited visibility of the Proposed Development.

It should be noted that from all receptor groups it is considered unlikely that the Proposed Development would be seen given the low heights of the equipment.

6.6.3. Cumulative effects

Cumulative landscape and visual effects would arise from the introduction of the Proposed Development to a future baseline that includes the consented HS2 proposals directly west of the Site.

The HS2 proposals would substantially alter the southern part of LCA 12 - Curdworth-Tame Valley Farmland. HS2 would contribute the largest proportion of this cumulative effect and would become a permanent feature of the landscape, unlike the Proposed Development, which remains temporary and would be removed after its proposed operating life, 30 years.

Views experienced from the visual receptors directly east would be affected by HS2 proposals. However, the cumulative visual effect of this change would be to screen views looking towards the Site from the west, with limited potential for combined and sequential views experienced from footpath 165/M16/1 to the east, south and west.

The resultant cumulative effect on landscape character is assessed to be of **Moderate significance and Adverse** within the **Immediate** context of the Site given the extent of new development that would be introduced into the lightly undulating, agricultural landscape. HS2 would contribute the largest proportion of this cumulative effect and would become a permanent feature of the landscape, unlike the Proposed Development, which remains temporary and would be removed after its proposed operating life.

Cumulative effects on visual receptors would be limited to receptors immediately west of the Site where the rerouting of footpath 165/M16/1 would result in some potential combined and sequential views from short sections of the route resulting in **Slight, significance and Adverse** effect.

6.6.4. Landscape Plan

A Landscape Plan is submitted with the Planning Application. This Plan has been informed by the LVIA and discussions with BSG Ecology, setting out areas for new and enhanced planting to screen views from surrounding receptors.

Given the enclosed nature of the site and the incorporation of proposed mitigation measures, it is considered that the Proposed Development complies with Core Strategy Policy NW11 (Renewable Energy and Energy Efficiency) and emerging Local Plan Policy LP14 (Landscape).

6.7. Archaeology and Heritage

A Heritage Desk-based Assessment has identified no overriding heritage constraints to the Proposed Development.

There is the potential for Roman period remains to be present within the Site, as similar remains have been identified in close proximity to the Site during a recent archaeological evaluation. Potential Roman remains may comprise ditch features or pit features associated with an agricultural use of the Site, and would be of limited heritage significance.

It is likely that during the medieval and post-medieval period the Site was in use for arable cultivation, as such, buried remains of ridge and furrow cultivation may be present, as may former field boundaries. No previous built development appears to have occurred within the Site, and as such the expected survival of any potential buried remains would be good.

The Assessment has also considered the proposed changes to the setting of Grade II Listed Dunton Hall and a Grade II Listed Barn associated with Dunton Hall. The report found that the proposals would not impact upon the significance of these buildings, which is primarily derived from their architectural form. There is limited intervisibility between the Site and Dunton Hall and the planned route for HS2 runs between the Site and these buildings. Indeed, a significant section of the main Grade II listed barn will be demolished to allow for HS2 construction traffic routing. As such the report found that there would be no non-physical impact upon these heritage assets and there would be no harm to their significance from the proposals.

Therefore, it is considered that the Proposed Development would be in accordance with Policy NW14 (Historic Environment) of the Core Strategy and Policy LP15 (Historic Environment) of the emerging Local Plan.

6.8. Noise

A Noise Statement has been submitted with the Planning Application. This Statement provides a comparison between the estimated rating noise level of the battery storage scheme and the future ambient noise level at the nearest NSRs to the site.

The rating noise level of the battery storage scheme is lower than the anticipated HS2 noise level during the daytime at all the nearest NSRs and during the night-time for dwellings at Dunton Hall. It is likely that the rating noise level will also be lower than the ambient noise level at 2 Hams Lane. Whilst the rating noise level exceeds the ambient noise level at Reindeer Park by up to 6 dB during the night-time if all equipment is continuously operational, the exceedance of the internal ambient noise levels suggested in BS 8233 by 1 dB is unlikely to be perceptible.

Potential noise mitigation measures include use of quieter equipment, use of equipment enclosures, localised noise barriers, or a noise barrier along the northern boundary of the site. It is therefore considered that, with noise mitigation, the aims of paragraph 180 of the NPPF, Core Strategy Policy NW10 (Development Considerations) and emerging Local Plan Policy LP31 (Development Considerations) will be met as noise from the proposed development will not result in any significant adverse impacts on health or quality of life to nearby NSRs.

6.9. Flood Risk and Drainage

The Site is located within Flood Zone 1, and as such is considered to be at low risk of flooding from fluvial and sewer sources, very low risk of flooding from surface water, and moderate risk of flooding from groundwater sources. Given the low risk of flooding to the Site and the nature of the Proposed Development, no mitigation measures have been proposed.

The Site is currently greenfield. The impermeable areas across the Site are limited, therefore no formal drainage is required. As such, a pragmatic approach has been taken to promote infiltration and create storage across the Site. The proposed storage containers will be constructed atop concrete plinths with loose gravel between the plinths. The areas between the containers will also be stripped of grass and replaced by loose gravel, whilst approximately 30% of the Site will remain vegetated. Whilst this does alter the surfacing, the loose gravel will be freely draining, allowing runoff to infiltrate to the substrate as per the existing soft landscaped scenario. The loose gravel surface will intercept and distribute flows, create storage, attenuate runoff, and promote infiltration across the Site.

The following recommendations have been made:

- All ground-based services (cabling etc.) should be designed and installed to be flood resilient/water compatible, and this should be achieved in accordance with appropriate design standards and best practice guidelines.
- Any security fencing mesh sizing should be made as large as reasonably practical to ensure free flow of flood water through the fence and reduce the possibility of debris build up affecting overland flow routes.

Providing the development adheres to the conditions advised within the flood risk report, the proposals demonstrate that the runoff rates can be managed and mitigated on site and would not be increased post-development. Therefore, runoff would not adversely affect flood risk and surface water drainage at the Site. On this basis, it is considered that the requirements of Core Strategy Policy (NW10 (Development Considerations) and emerging Local Plan Policy LP31 (Development Considerations) will be met.

6.10. Arboriculture

A Tree Survey has been conducted across the whole site. This has informed appropriate buffer margins between the Proposed Development and existing hedges.

No trees or hedgerows would be impacted by the Proposed Development. The existing gap in hedgerow through which the proposed construction access track will pass has been swept path tested for HGVs and does not need any further widening. The long-term maintenance access track that the BESS will link to will be provided by HS2.

6.11. Socio-economic

The Proposed Development will not only directly contribute towards achieving the Government's carbon reduction aims but also helps achieve other important, social and economic goals. The scheme will generate economic benefits through generating jobs for installation, maintenance and its eventual decommissioning. Where possible local contractors, where quality, skills and services match requirements, will be used for the construction phase of the Proposed Development.

7.0 Conclusion

The Proposed Development is for the installation of a 349.9MW Battery Energy Storage System with associated infrastructure at land to the northwest of the existing Hams Hall Substation, North Warwickshire.

Given the national importance of the Proposed Development in providing infrastructure for supporting the delivery of the Government's target of reducing carbon emissions, it is considered that Very Special Circumstances for development in the Green Belt are clearly demonstrated in accordance with Paragraph 147 of the NPPF.

This Planning Statement has demonstrated that the Site is suitable for the development and is justified in planning policy terms. Where impacts may be experienced in relation to landscape and visual impacts and ecology, mitigation measures are proposed in order to adequately manage them so that effects are minimised or removed.

The Proposed Development accords with the relevant policies of the Development Plan and emerging Local Plan and as such can be approved without delay.

Appendix 1 MITS Substations

8058
29

Appendix A

 System schematics and geographic drawings

Contents

Appendix A includes a set of system schematics and geographic drawings of the current NETS, with the approximate locations of existing power stations and reactive compensation plants shown. The schematics also show the NETS boundaries and ETYS zones we have used in our analysis. This year we have included an appendix A8 which identifies the relevant GB existing MTS substation.

Appendix A

Geographical	
A1 - GB Existing Power Stations.....	2
A2 - GB Existing Transmission System.....	3
A3 - GB Transmission System Boundaries.....	4
Schematic	
A4 - GB Existing Transmission System.....	5
A5 - GB Transmission System ETYS Zones.....	6
A6 - GB Transmission System Boundaries.....	7
A7 - GB Reactive Compensation Plant.....	8
A8 - GB Existing MTS Substations.....	9

Figure A1: GB Existing Power Stations

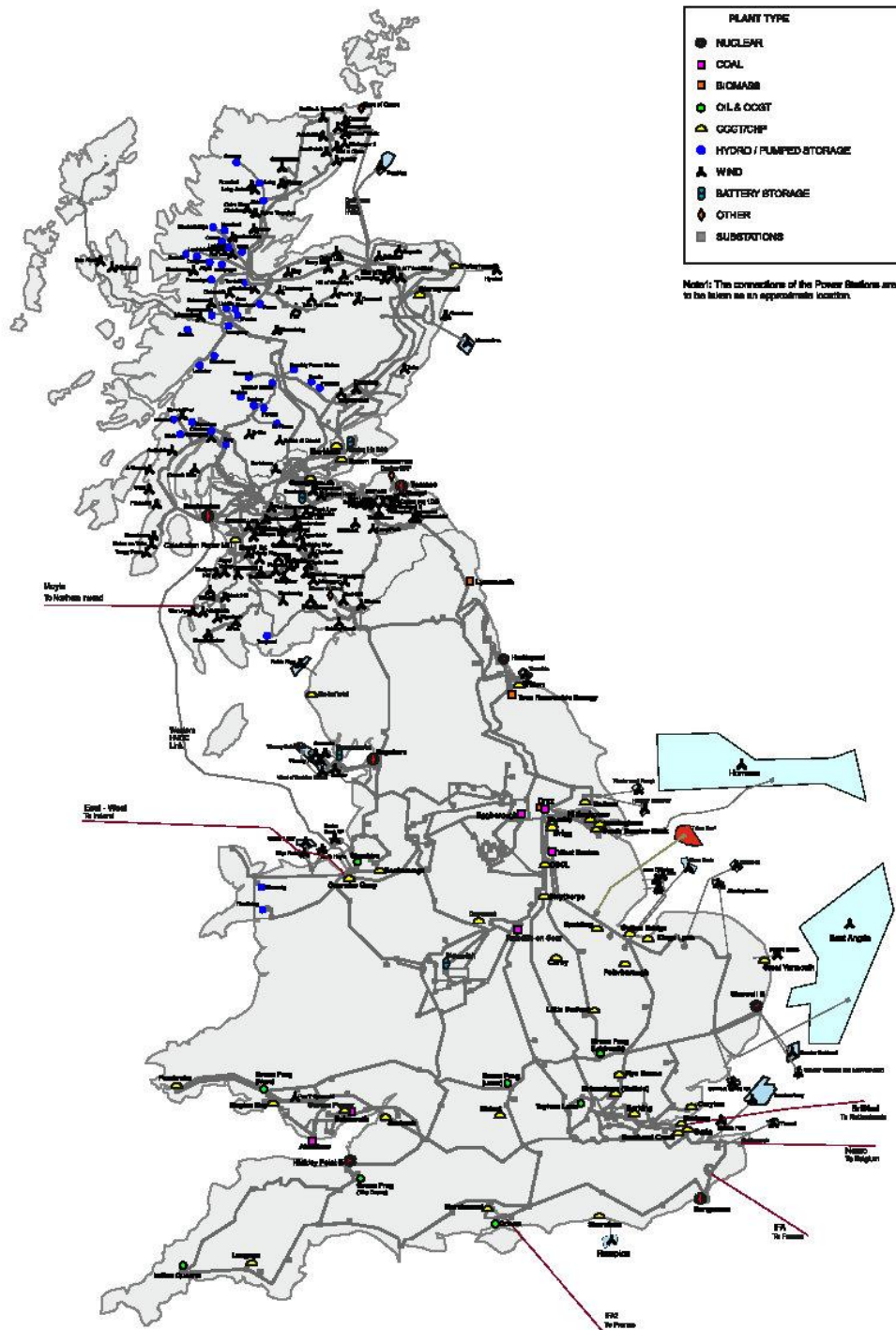


Figure A2: GB Existing Transmission System

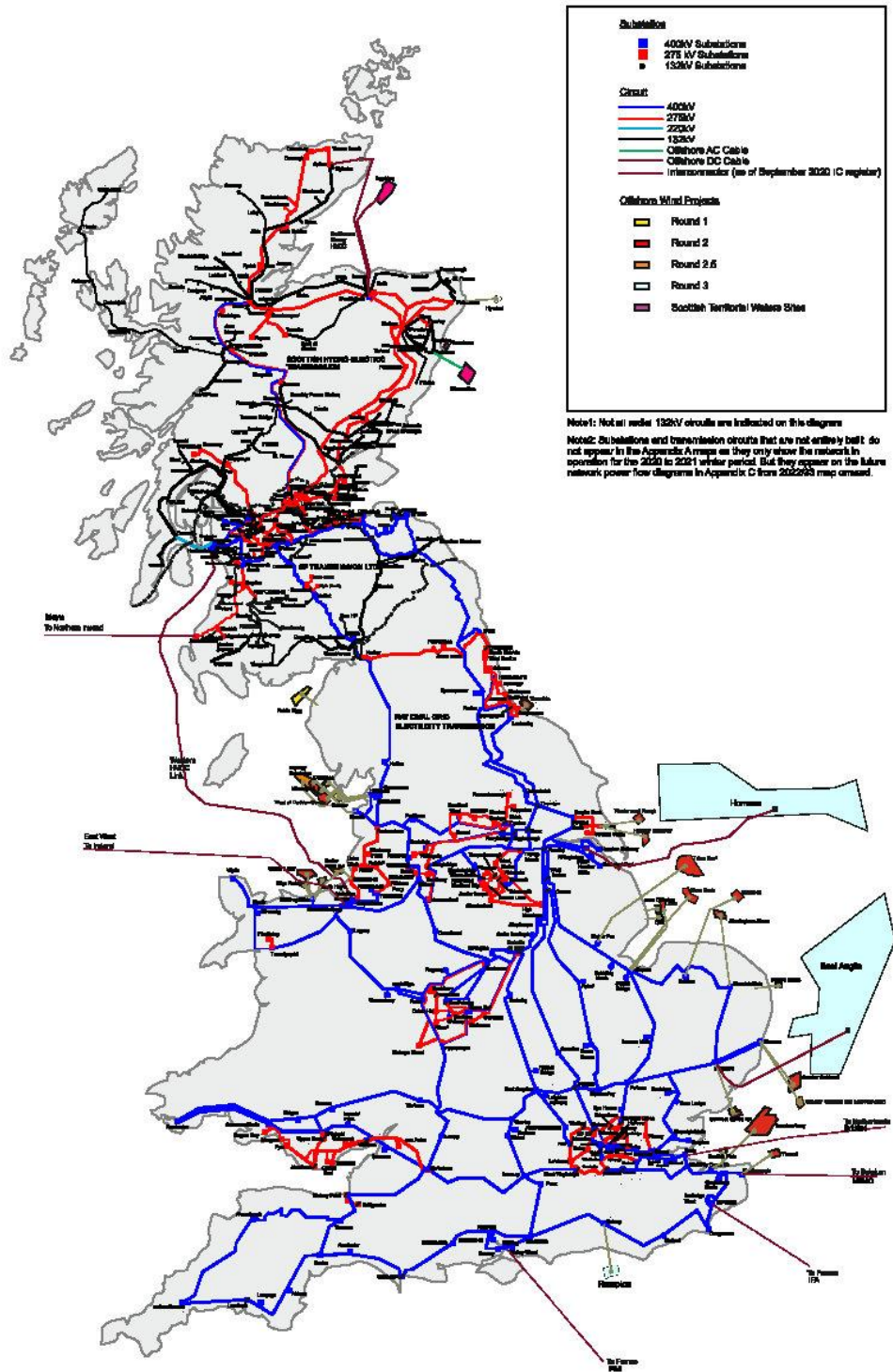


Figure A3: GB Transmission System Boundaries

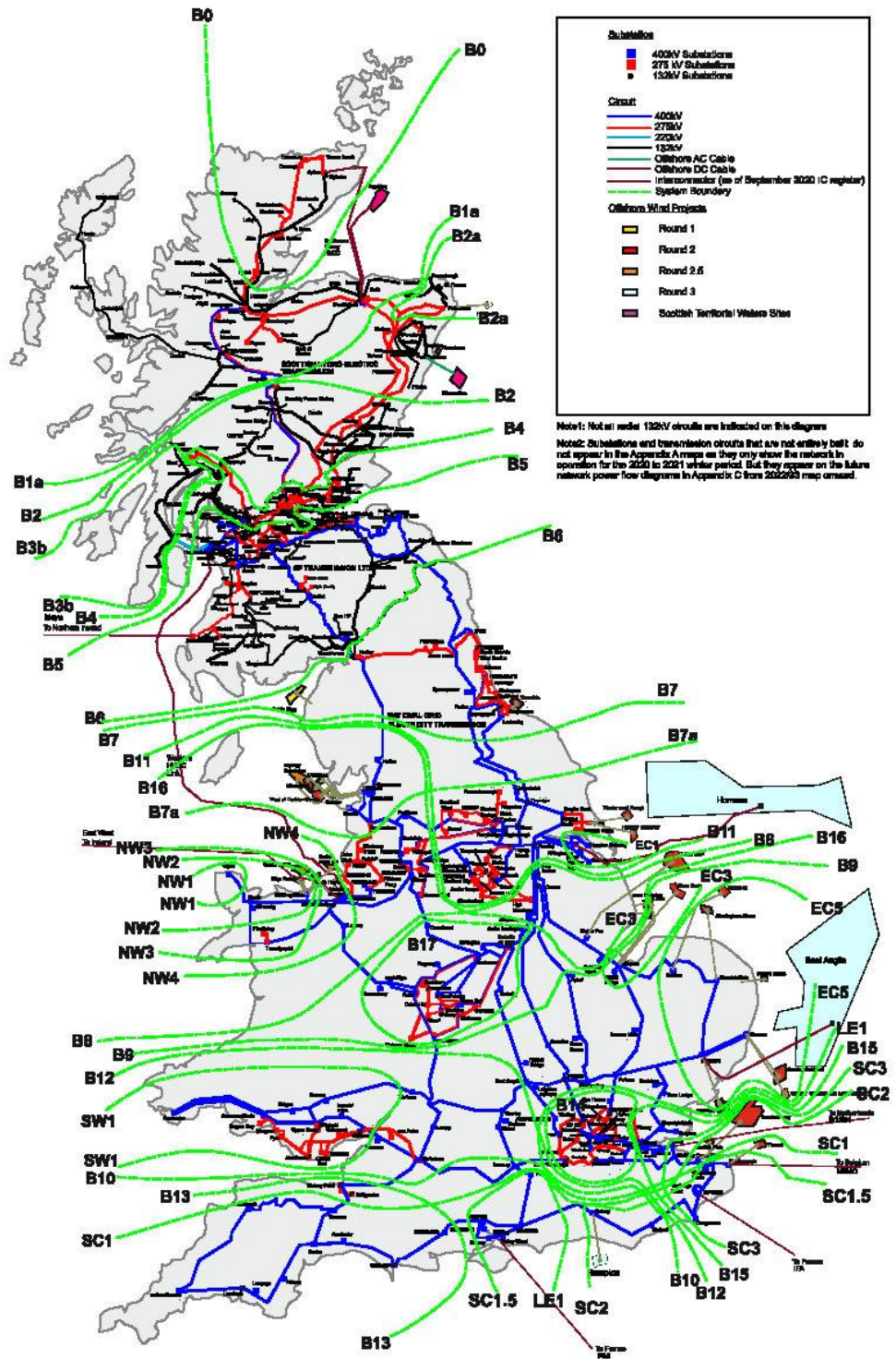
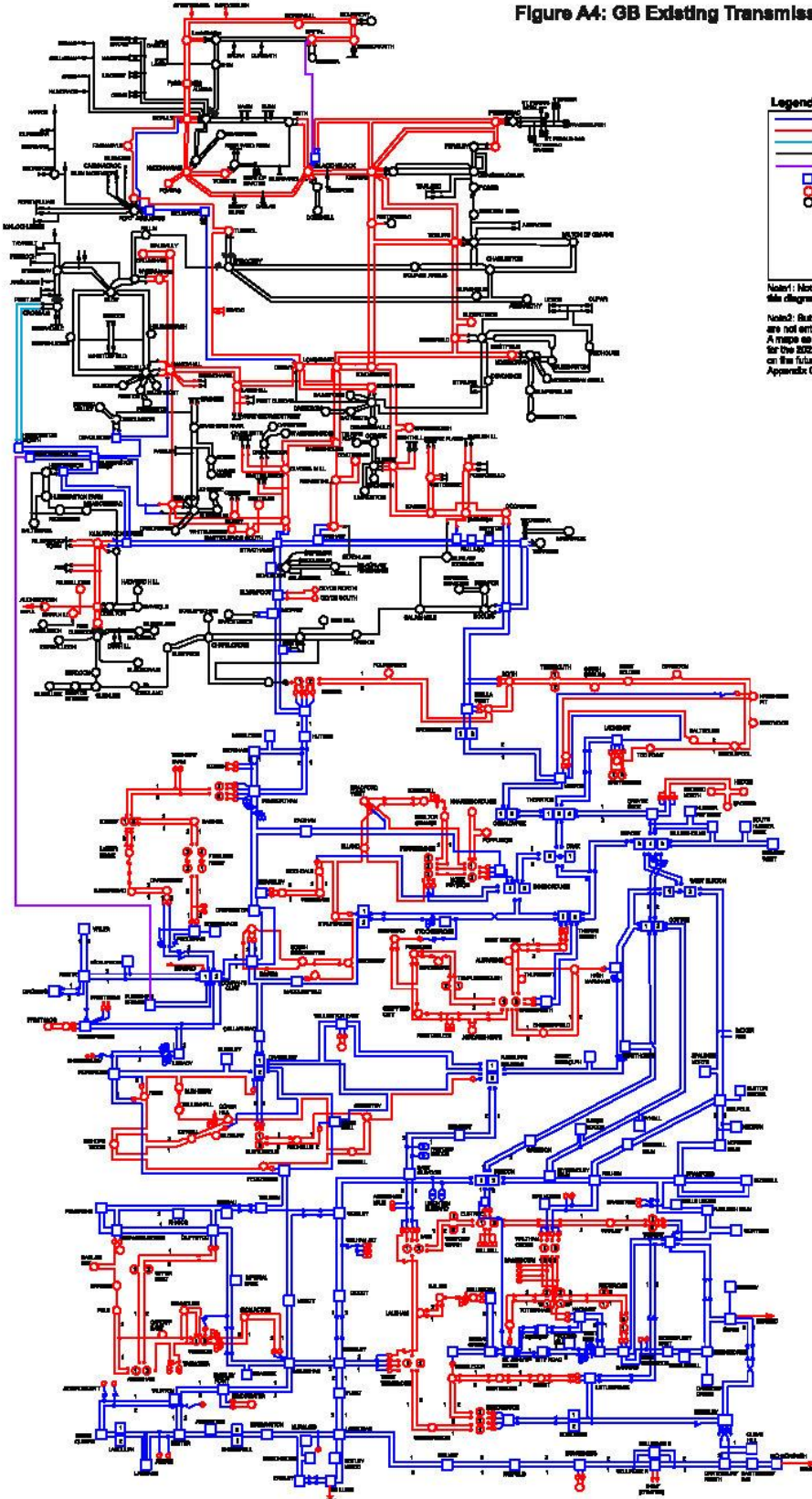


Figure A4: GB Existing Transmission System

SHE TRANSMISSION

RP TRANSMISSION

NATIONAL GRID



Legend

- 400kV Circuit
- 275kV Circuit
- 225kV Circuit
- 132kV Circuit
- HVDC Circuit
- 400kV Substation
- 275kV Substation
- 132kV Substation

Note1: Not all multi 132kV circuits are indicated on this diagram

Note2: Substations and transmission circuits that are not entirely built do not appear in the Appendix A maps as they only show the network in operation for the 2002 to 2011 winter period. But they appear on the future network power flow diagrams in Appendix C from 2022/23 map onward.

Figure A5: GB Transmission System ETYS Zones

SHE TRANSMISSION
RP TRANSMISSION
NATIONAL GRID

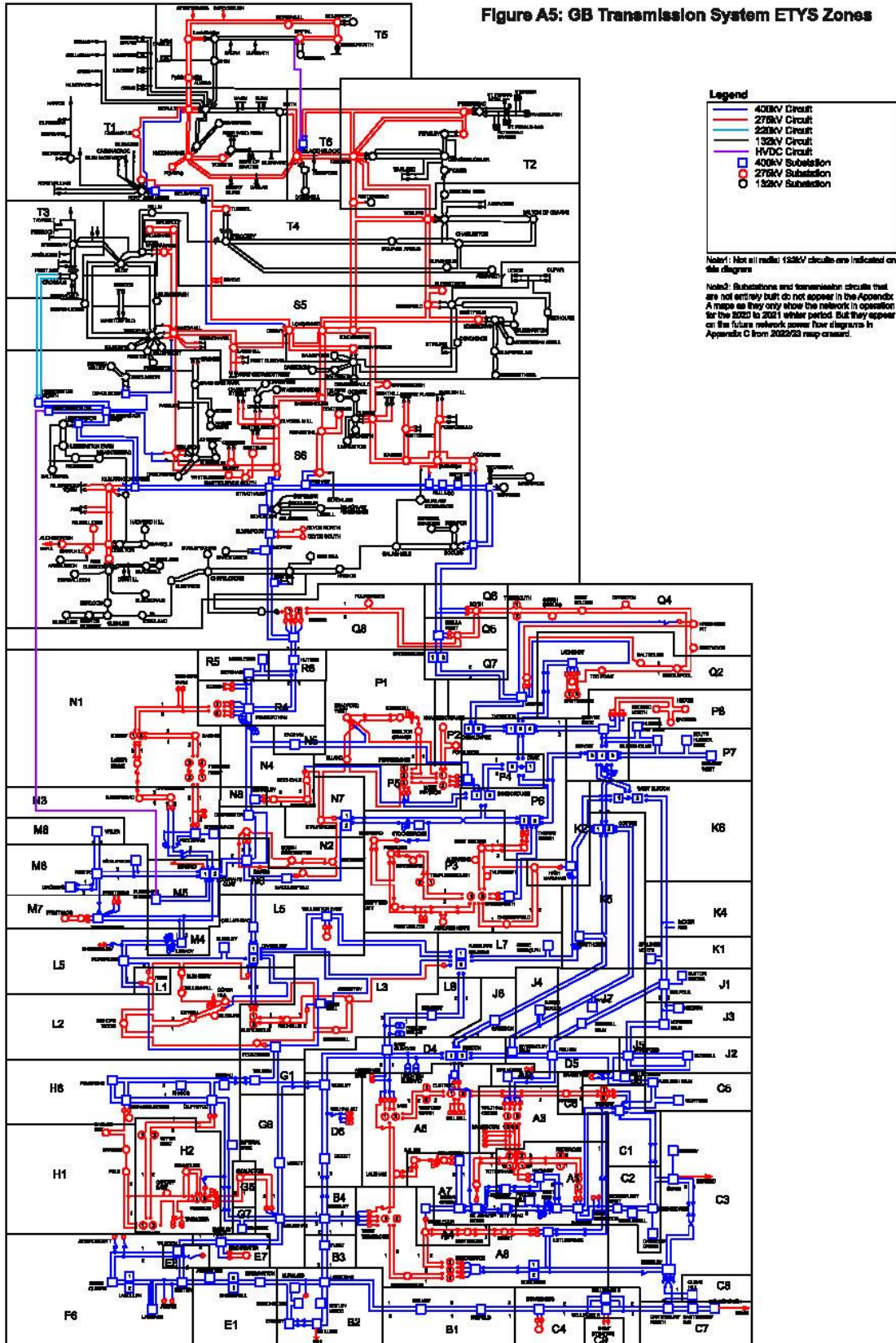


Figure A6: GB Transmission System Boundaries

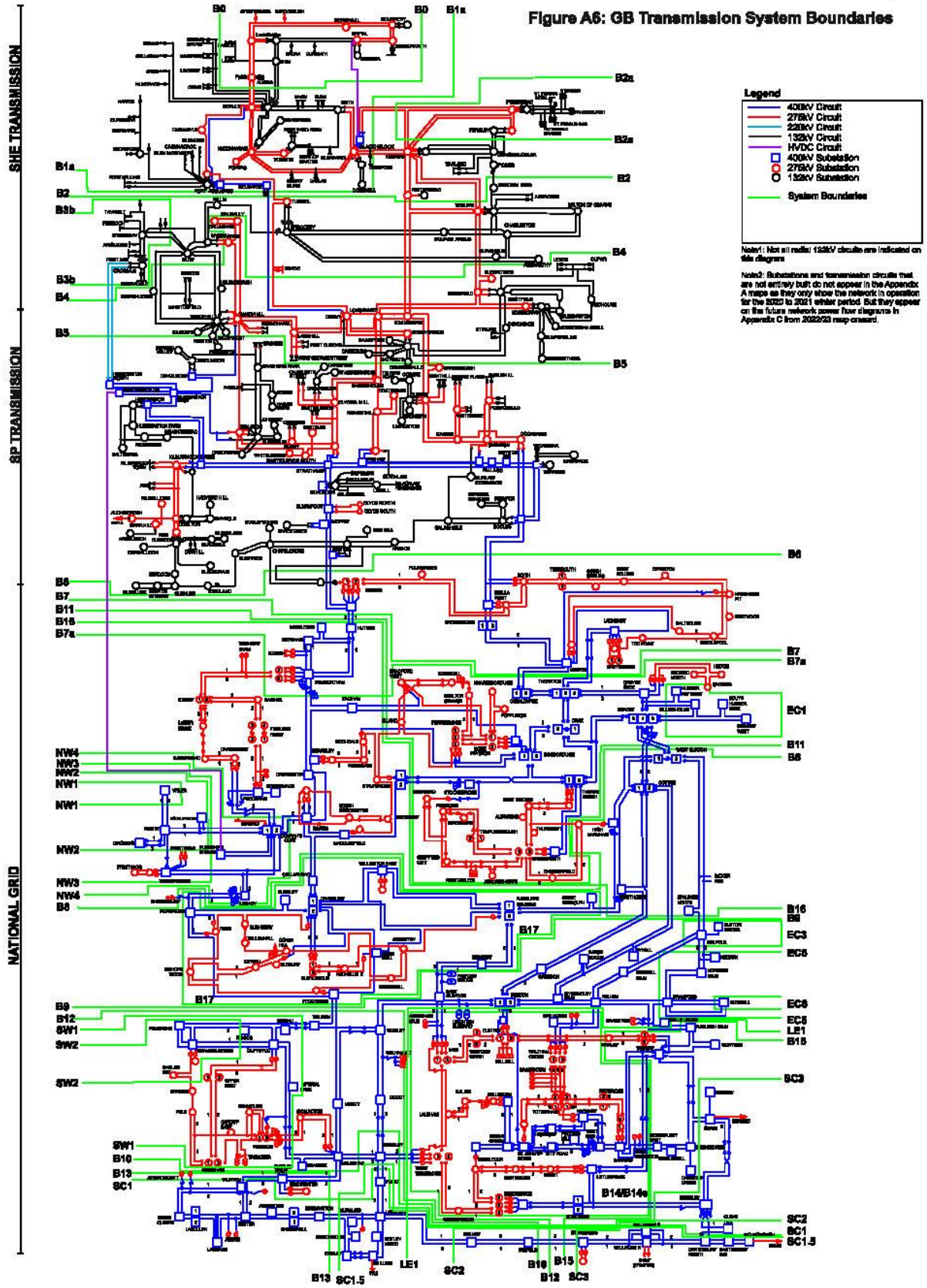


Figure A7: GB Reactive Compensation Plant

SHE TRANSMISSION
RP TRANSMISSION
NATIONAL GRID

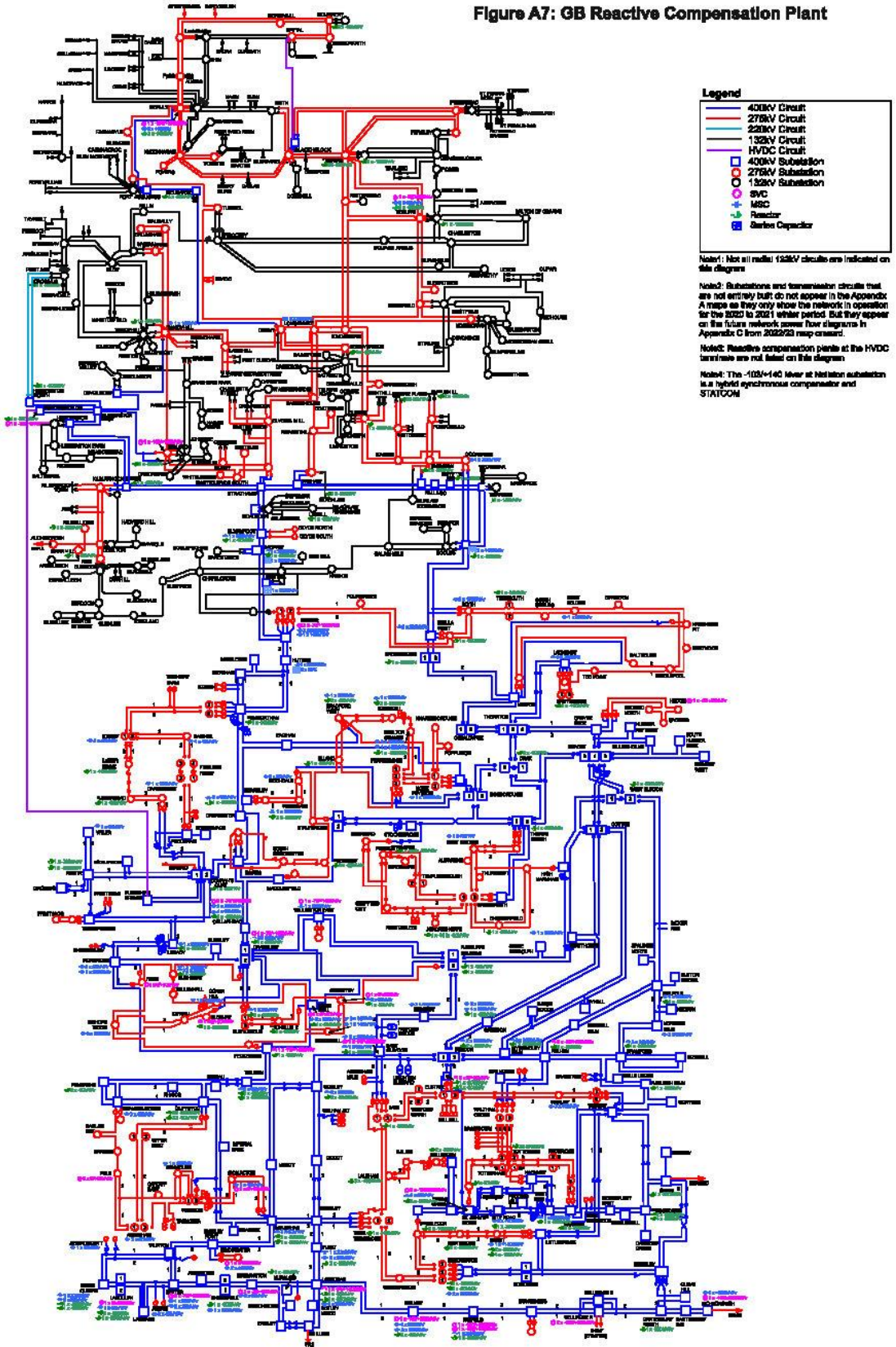
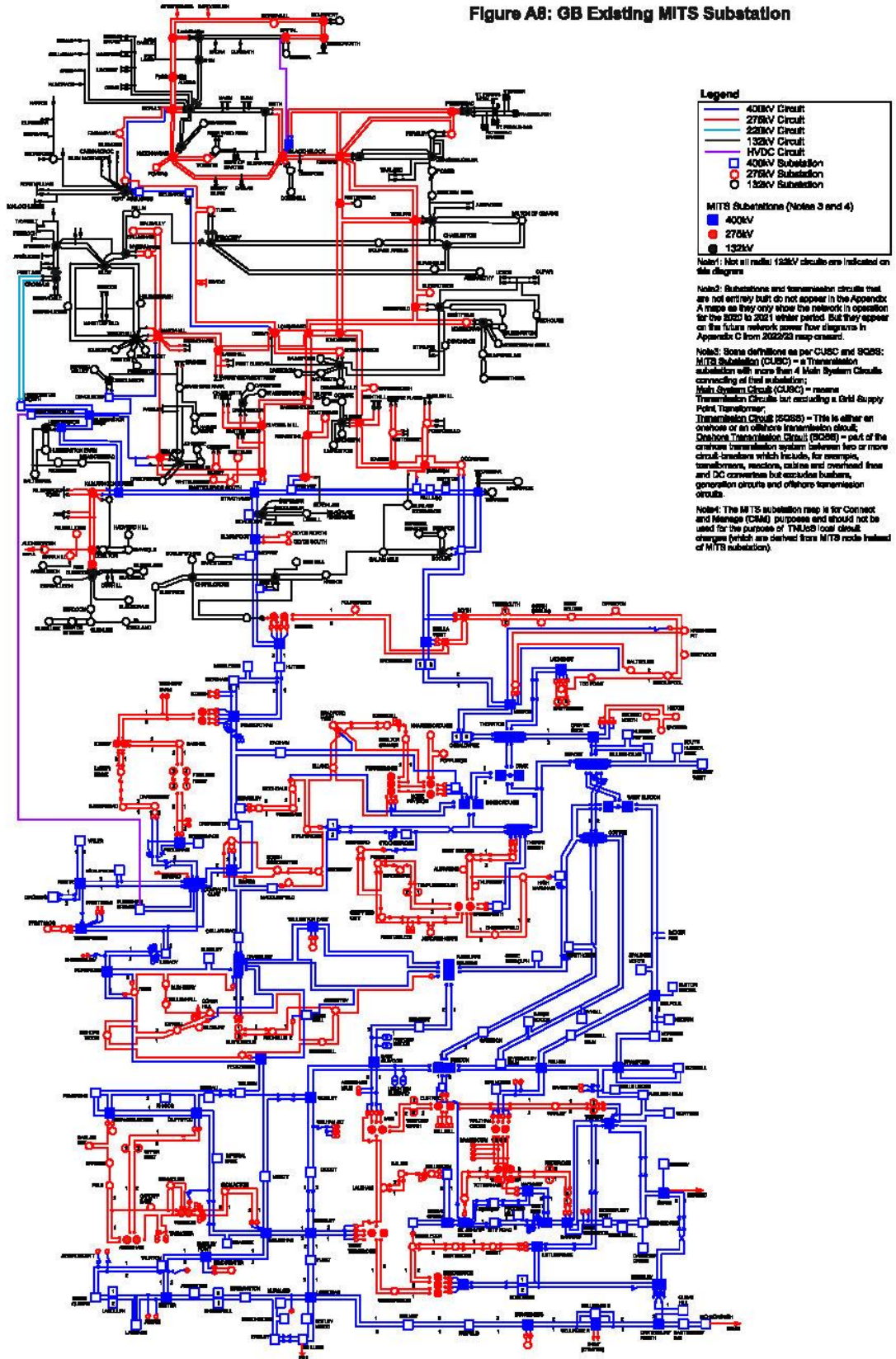
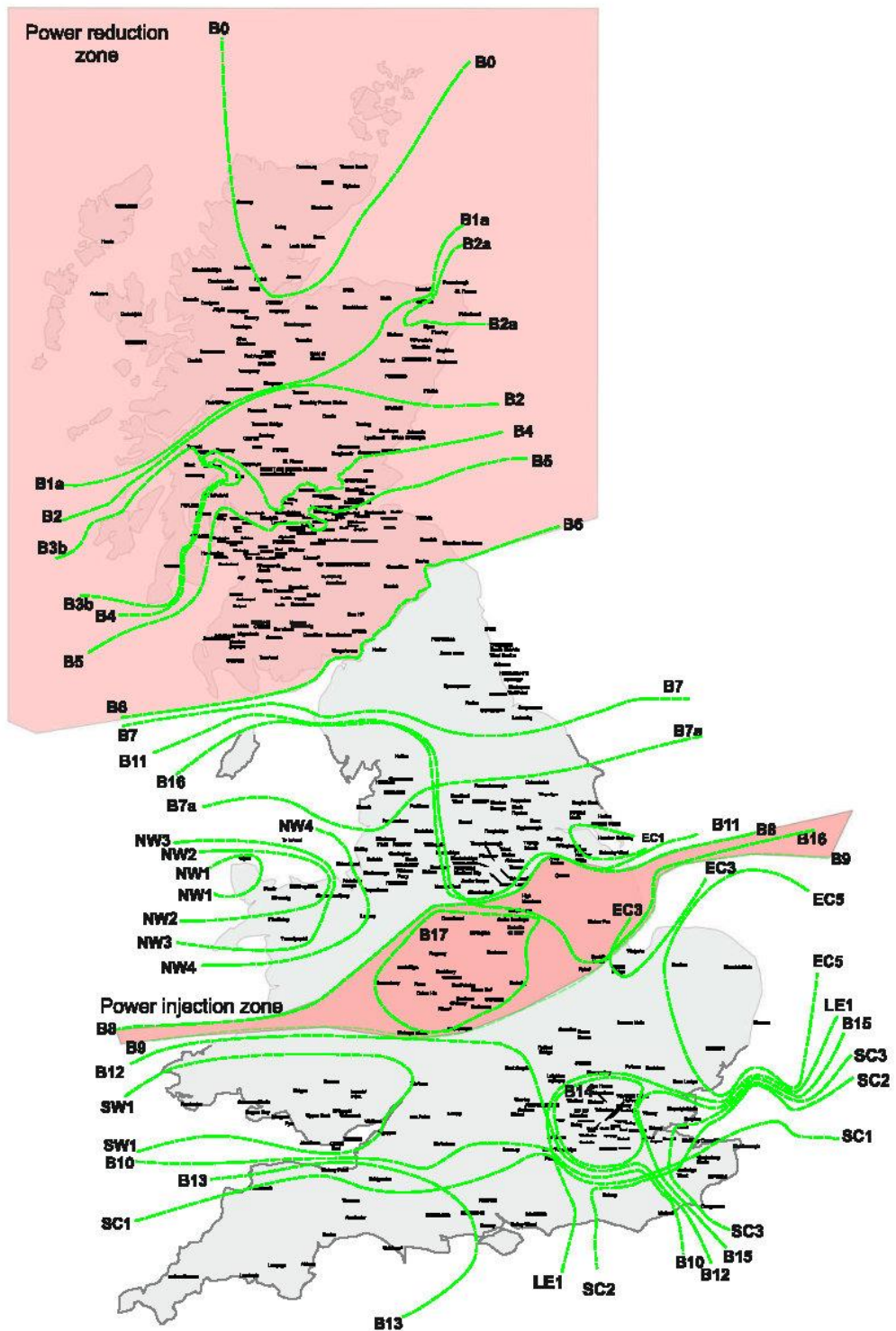


Figure A8: GB Existing MITS Substation

SHE TRANSMISSION
RP TRANSMISSION
NATIONAL GRID



Constraint Management Pathfinder Transmission System Boundaries of Focus



Stability Path for Phase 1 - appa sdc: substation effectiveness weighting table

Site Name	Site ID	Voltage	Region	Stability support national	Stability support local	Regional voltage
Bicker Pan	BICP	400	E_Midlands	High	Low	High
Bicker Pan	BICP	400	E_Midlands	High	Low	High
Buckholme	BUST	400	W_Midlands	High	Low	Low
Callarhead	CELL	400	W_Midlands	High	Low	Low
Cottam	COTT	400	E_Midlands	High	Low	High
Drakelow	DRAK	400	W_Midlands	High	Low	Low
Feckenham	FECK	400	W_Midlands	High	Low	Low
Hans Hall	HAMB	400	W_Midlands	High	Low	Low
High Newtham	HIGH	400	E_Midlands	High	Low	Low
Northolme	IRON	400	W_Midlands	High	Low	High
Oldbury	OLDB	400	W_Midlands	High	Low	Low
Pafford Bridge	PAFB	400	W_Midlands	High	Low	Low
Fenn	PENN	400	W_Midlands	High	Low	Low
Ratcliffe-On-Soar	RATS	400	W_Midlands	High	Low	Low
Rugby	RUGE	400	W_Midlands	High	Low	Low
Shrewsbury	SHRE	400	W_Midlands	High	Low	Low
Spalding North	SPLN	400	E_Midlands	High	Low	High
Staythorpe	STAY	400	E_Midlands	High	Low	High
Stoke Bardolph	STOB	400	E_Midlands	High	Low	High
West Burton	WBLR	400	E_Midlands	High	Low	High
Willington East	WILE	400	W_Midlands	High	Low	Low
Alderley Park	ADDP	132	W_Midlands	Low	Low	Low
Ashby	ASPO	132	E_Midlands	Low	Low	High
Barnston	BARN	132	W_Midlands	Low	Low	Low
Bentley	BENT	132	W_Midlands	Low	Low	Low
Berkswell	BESW	132	W_Midlands	Low	Low	Low
Bicker Pan	BICP	132	E_Midlands	Low	Low	High
Bishops Wood	BESW	132	W_Midlands	Low	Low	Low
Black Leas	BLAL	132	W_Midlands	Low	Low	Low
Bloxham	BLOX	132	W_Midlands	Low	Low	Low
Brougham Road	BROB	132	W_Midlands	Low	Low	Low
Burnwood	BWOD	132	W_Midlands	Low	Low	Low
Burslem	BURS	132	W_Midlands	Low	Low	Low
Burton	BURT	132	W_Midlands	Low	Low	Low
Burton South	BUTS	132	W_Midlands	Low	Low	Low
Bushby	BUSH	132	W_Midlands	Low	Low	Low
Busleholme	BUST	132	W_Midlands	Low	Low	Low
Cannock	CANN	132	W_Midlands	Low	Low	Low
Canterbury	CANN	132	W_Midlands	Low	High	Low
Cade Bromwich	CASB	132	W_Midlands	Low	Low	Low
Callarhead	CELL	132	W_Midlands	Low	Low	Low
Chapelide	CHEA	132	W_Midlands	Low	Low	Low
Chickhousa	CHEC	132	E_Midlands	Low	Low	High
Chelmsley Wood	CHEW	132	W_Midlands	Low	Low	Low
Cilstone	CLIP	132	E_Midlands	Low	Low	High
Coalville	COVI	132	W_Midlands	Low	Low	Low
Coppenhill	COPP	132	W_Midlands	Low	Low	Low
Copt Heath	COPH	132	W_Midlands	Low	Low	Low
Coventry	COVE	132	W_Midlands	Low	Low	Low
Coventry Central	COVC	132	W_Midlands	Low	Low	Low
Coventry South	COVS	132	W_Midlands	Low	Low	Low
Coventry West	COVW	132	W_Midlands	Low	Low	Low
Cress	CRES	132	W_Midlands	Low	Low	Low
Daverby	DAVE	132	W_Midlands	Low	Low	Low
Derby	DERB	132	W_Midlands	Low	Low	Low
Derby South	DEBS	132	W_Midlands	Low	Low	Low
Drakelow	DRAK	132	W_Midlands	Low	Low	Low
Elmdon	ELMD	132	W_Midlands	Low	Low	Low
Erington	ERDI	132	W_Midlands	Low	Low	Low
Farsbrook	FOBR	132	W_Midlands	Low	Low	Low
Grentham	GREN	132	E_Midlands	Low	Low	High
Grentham North	GRNO	132	E_Midlands	Low	Low	High
Grentham South	GRAS	132	E_Midlands	Low	Low	High
Gresley	GRES	132	W_Midlands	Low	Low	Low
Hans Hall	HAMB	132	W_Midlands	Low	Low	Low
Harbury	HARB	132	W_Midlands	Low	Low	Low
Hatton Gas Compressor	HATG	132	E_Midlands	Low	Low	High
Heaton	HAMT	132	E_Midlands	Low	Low	High
Hamor	HEAM	132	W_Midlands	Low	Low	Low
Herdon	HERD	132	W_Midlands	Low	Low	Low
Hincley	HINC	132	W_Midlands	Low	Low	Low
Hortonwood	HAWW	132	W_Midlands	Low	Low	Low
Northolme	IRON	132	W_Midlands	Low	Low	Low
Kelley	KETL	132	W_Midlands	Low	Low	Low
Kings Green	KTIG	132	W_Midlands	Low	Low	Low
Kiswell	KTNW	132	W_Midlands	Low	Low	Low
Lea Marston	LEMR	132	W_Midlands	Low	Low	Low
Lincoln	LINC	132	E_Midlands	Low	Low	High
Longton	LONG	132	W_Midlands	Low	Low	Low
Loughborough	LOUG	132	W_Midlands	Low	Low	Low
Melton	MALV	132	W_Midlands	Low	Low	Low
Mesford C	MEFC	132	W_Midlands	Low	Low	Low
Melton Mowbray	MELM	132	E_Midlands	Low	Low	High
Middlemarsh	MIDD	132	E_Midlands	Low	Low	High
Nechells	NECH	132	W_Midlands	Low	Low	Low
Newcastle	NEWC	132	W_Midlands	Low	Low	Low
North Greatwell	NOGR	132	E_Midlands	Low	Low	High

Mr J Brown
Head of Planning
North Warwickshire Borough Council
The Council House
South Street
Atherstone CV9 1DE

FAO Andrew Collinson

Your Ref: PAP/2021/0473

Date: 29th November 2021

Communities Group
Paul Wilcox
Senior Planner, Planning Policy
Infrastructure & Sustainable
Communities
Warwickshire County Council
Shire Hall, Warwick
CV34 4RL
Tel: 01926 412538
Email:
paulwilcox@warwickshire.gov.uk
Web: www.warwickshire.gov.uk

Dear Mr Brown

Development Proposal: Development of a 349.9MW Battery Storage system with associated infrastructure.

Location: Land East and South East of Dunton Hall, Kingsbury Road, Curdworth.

The attention of the Mineral Planning Authority (MPA) at Warwickshire County Council has been drawn to the above proposal as it may have implications for minerals planning. The proposed location of the facility is within a Mineral Safeguarding Area for sand and gravel, it is 220m east of an existing minerals site (Dunton Quarry) and borders a proposed site allocation in the Minerals Plan 2018 (Site 9 Lea Marston).

As a site falling within a MSA and in accordance with Policies MCS 5 and DM 10 in the Minerals Plan 2018 the MPA would have expected to see a Mineral Assessment Report or an exchange of correspondence with the authority within the planning application addressing the likelihood of sand and gravel being sterilised by the proposed development. No such documentation has been submitted and therefore in normal circumstances the authority would be objecting to this proposal. However, the authority is aware that the site formed part of Site 12 Dunton Hall which was nominated by the landowner for inclusion in the minerals plan but rejected on heritage, landscape/visual and access grounds. From reading the key application documents it is clear that the proposed facilities are capable of being dismantled and removed and therefore if determined to be acceptable in planning terms the underlying mineral resources could be removed at some later date and would not be permanently sterilised. For these reasons the MPA does not object to this development on potential mineral sterilisation grounds.

*Working for
Warwickshire*

The emerging Minerals Plan 2018 is now at the proposed modifications consultation stage with the consultation ending on 7th January 2022 therefore in the opinion of the MPA considerable weight should be given to the policies in the minerals plan in accordance with paragraph 48 of the NPPF. While Policy MCS 5 which deals with mineral safeguarding is the subject of proposed modifications to make it clear that “existing minerals sites or existing and future mineral infrastructure” will be safeguarded against needless sterilisation by non-mineral development these changes clarify and strengthen the policy and therefore should be given considerable weight. Dunton Quarry is both an existing mineral site and existing mineral infrastructure site and in the text to policy MCS 4 is described as a major facility providing materials to the local and regional construction industry. It is important therefore that its operation is not prejudiced or jeopardised by new development in accordance with policy MCS 5. In accordance with the “agent of change” principle set out in paragraph 187 in the NPPF it is the developer’s responsibility to determine site specific impacts as well as the identification and implementation of suitable measures and for these to be implemented before the non-mineral development is completed.

It does not appear that the proposals have been subject to a dust impact assessment to determine whether fugitive dust from Dunton Quarry will have a detrimental impact on the operation of the battery storage facility. If dust is likely to have an effect, then the onus should be on the developer to put in place measures to protect sensitive plant and machinery erected on the site. The absence of any form of barrier on the western boundary on the landscaping plan and the emphasis on that plan to treating the eastern boundary would suggest that predominant south westerly winds blowing fugitive dust from the quarry has not been considered. This needs to be addressed. In the absence of any evidence to the contrary the MPA objects to this proposal as being too near to an existing mineral site and the use of the mineral site would be prejudiced by the proposed development due to the need to significantly increase dust suppression at Dunton Hall quarry.

To secure future supplies of sand and gravel in the county up to and beyond 2032 the Minerals Plan 2018 allocates six site specific allocations and one of these is Site 9 Lea Marston. Site 9 abuts the eastern boundary of the proposed development. While the planning application acknowledges the allocation exists it provides no evidence to demonstrate that the development and use of the battery storage facilities will not impact on the future design and development of Site 9. The Minerals Plan assumes the full mineral resource in Site 9 will be exploited at a rate of over 100,000 tonnes a year for a 10-year period and will provide a significant amount of materials to the local construction market. A reduction in tonnage from the site due to greater stand offs from the battery storage facility would increase pressure to approve additional sites in the county to maintain supplies of sand and gravel. In the opinion of the MPA the full development of Site 9 could be hindered by the sensitivity of the battery storage facility to dust and increased flood risk particularly as the amended FRA relies on the use of any existing ditch which forms the southern boundary of Site 9. For these reasons the MPA objects to the proposals.

The MPA’s objections can be overcome by the provision of appropriate evidence and measures prior to determination of the planning application or by the imposition of appropriate planning conditions by the Borough Council if the proposal is determined to be acceptable in planning terms for other reasons.

Yours sincerely

Paul Wilcox

Paul Wilcox
Senior Planner On behalf of Planning Policy

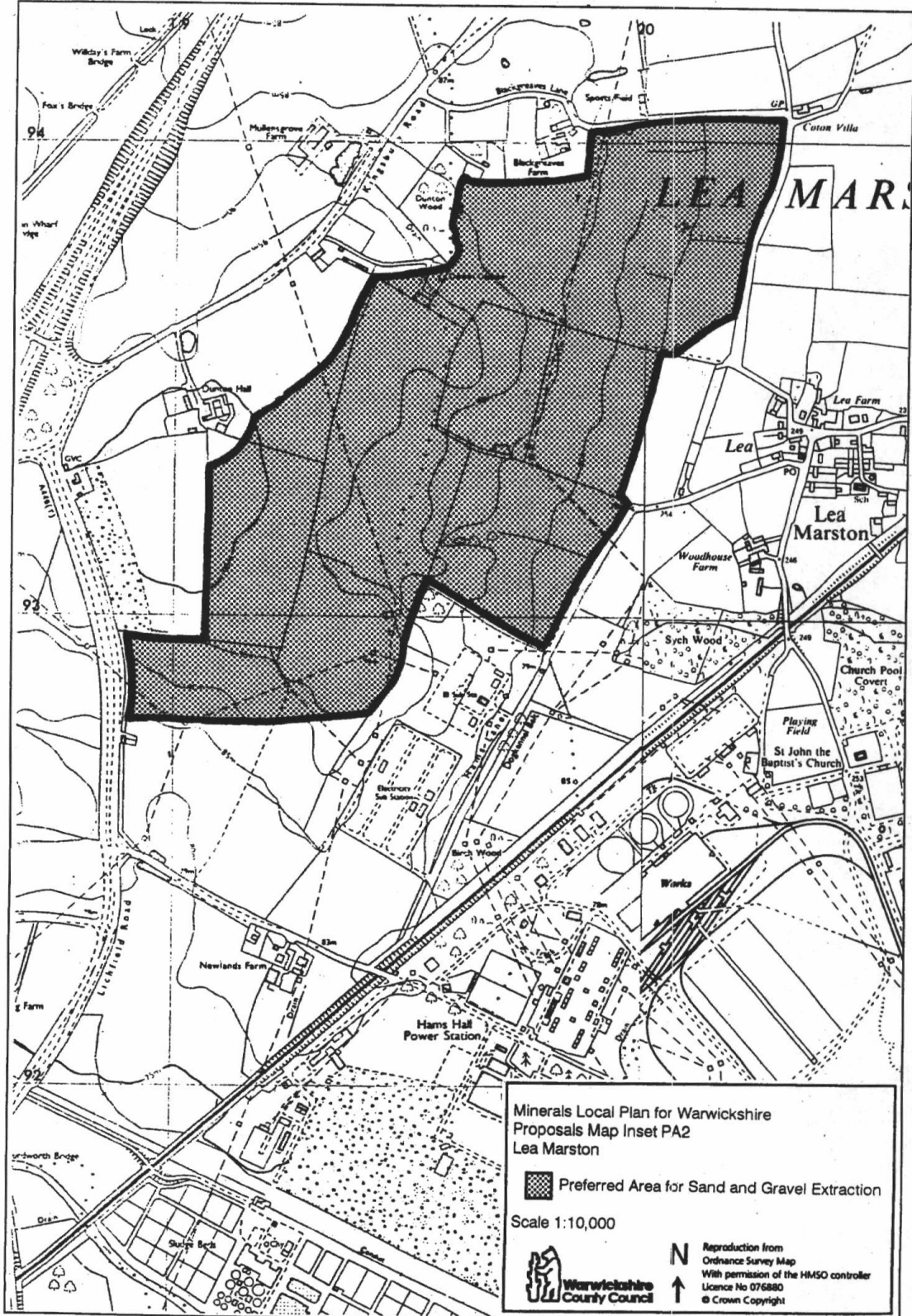
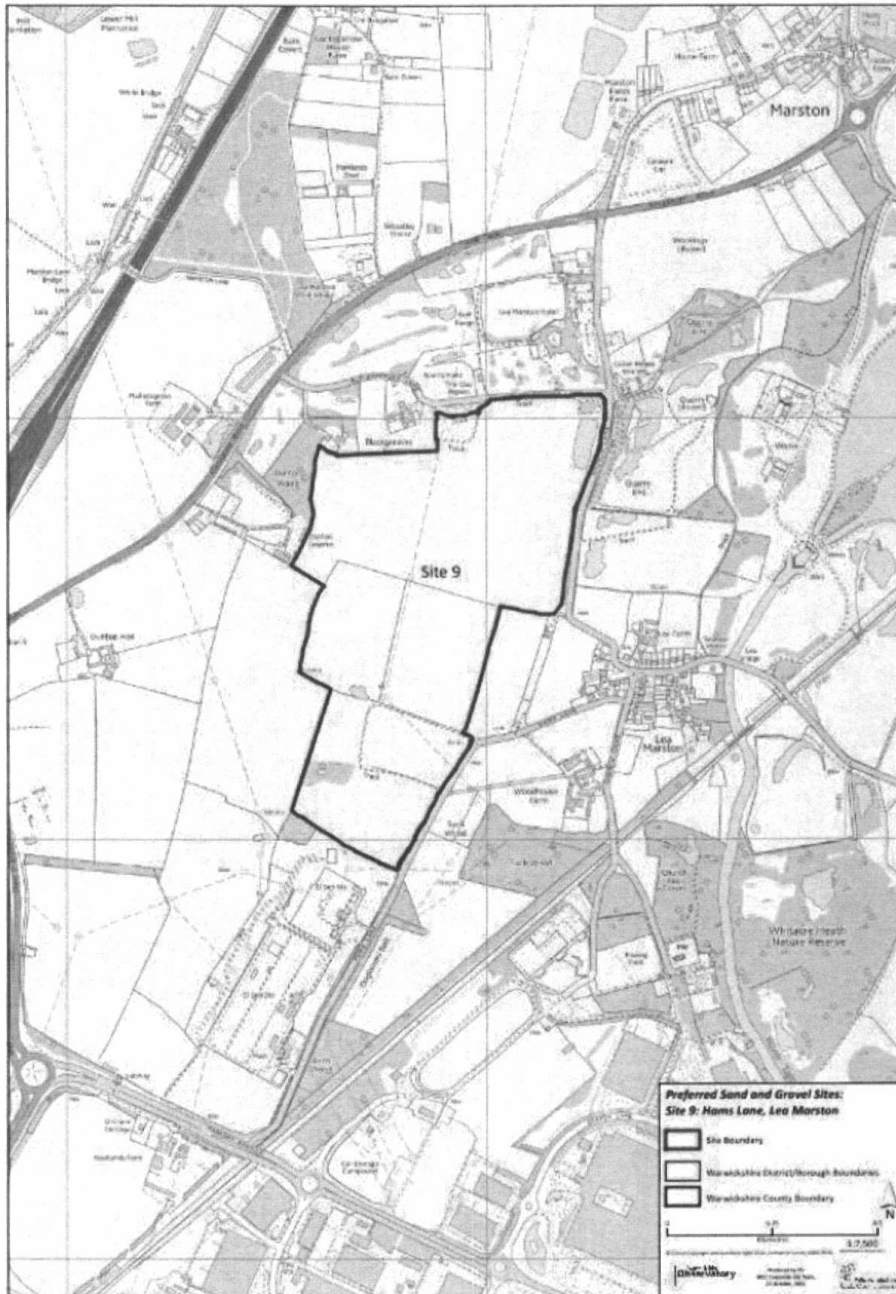


Figure 1.16 Site 9: Hams Lane, Lea Marston



Jeff Brown

From: Lea Marston PC <LeamarstonPC@outlook.com>
Sent: 29 November 2021 17:49
To: Jeff Brown
Cc: Mark Simpson; Sandra Smith
Subject: 1 of 3 FW: PAP/2021/0473. Development of a 349.9 MW Battery Energy Storage System with associated infrastructure
Attachments: 1 Y Junction.pdf; 2. HS Built Tracks.pdf; 3. HS2 ROUTRE MAP.pdf

From: Lea Marston PC <LeamarstonPC@outlook.com>
Date: Monday, 29 November 2021 at 15:36
To: "jeffbrown@Northwarks.gov.uk" <jeffbrown@Northwarks.gov.uk>
Cc: Mark Simpson <marksimpson@northwarks.gov.uk>, Martin Watson <martinwatson@warwickshire.gov.uk>, "sandrasmith@northwarks.gov.uk" <sandrasmith@northwarks.gov.uk>, Kim Smith <kimsmithy02@btinternet.com>, Tim skeath <tcrskeath@hotmail.co.uk>, Vanessa Gaskin <vanessa.gaskin@btinternet.com>, Bob Bryson <robert.bryson@btinternet.com>
Subject: PAP/2021/0473. Development of a 349.9 MW Battery Energy Storage System with associated infrastructure

Hi Jeff,

Thanks for your time today. As discussed, attached are a series of images I would like to share with Board Members when I address Planning Board on 6th December. I appreciate there are 7 but as you know a picture paints a thousand words and I think I can present these in three minutes if necessary.

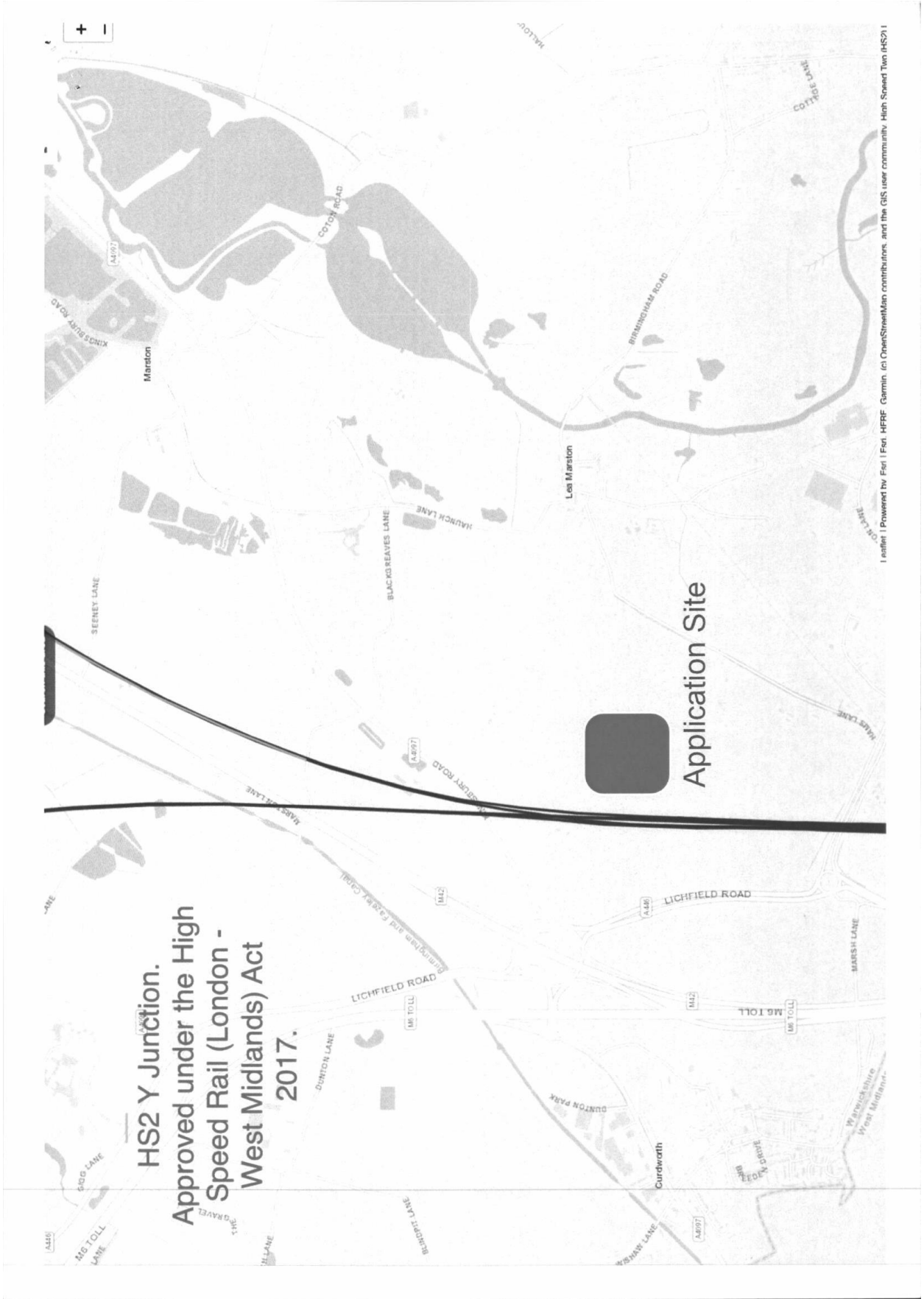
These are:

1. Y Junction. This is a context image to show the application site in the context of the HS2 Route approved under the HS2 Act 2017. All tracks shown were approved in the 2017 Act. The applicants' images miss the Y Junction and the associated line off their documents.
 This image is important as the junction will be within a viaduct at the application site and the current natural hillside will afford Lea Marston village with visual and audible mitigations. Any alteration to ground levels risks stopping this mitigation. The Junction will be illuminated when operational and as you know railway points do create noise from the passage of trains over them.
2. Built Tracks. The purpose of this image is to illustrate that there will be 5 (five) HS2 mainline tracks and a series of points junctions adjoining the development site. This is the only location in the UK where there are so many lines. Additionally, the Y junction locations means that Lea Marston Parish will be the only location in the UK to be subject to twenty years plus of HS2 construction activity.
3. HS2 Route Map. This image illustrates two points:
 - a. The development site is not geographically attached to the HS2 Agricultural access road that it is proposed will be used for access to the site post construction. This route is marked with a star on the map.
 - b. The Applicant petitioned the HS2 Select Committee over this access prior to the Statue being enacted. Both WCC Cllr Watson and I have independently confirmed with HS2 that this access is for agricultural access only and no alternate use would be supported by HS2.

- c. HS2 construction has now started along the 4097. As you can see the proposed construction route crosses the HS2 safeguarded zone and line route. Therefore, without access to Hams Lane the development site is not a viable consideration as it will be landlocked.
4. Map 4 is a reproduction of the applicants map in the Board papers. I have added the EA solar application site, the Y junction, and explanations of the colour coding. The purpose of this map is to illustrate over intensification of the Green Belt location which is currently an agricultural site. As you can see Lea Marston is facing significant development on three of its four aspects
5. Map 5 is an Ordinance Survey illustration of the contour at Lea Marston. It illustrates that the development site sits on a hillside twenty meters directly above the village. These contours also illustrate:
 - a. The importance of the landscape HS2 mitigation benefit to the residential community.
 - b. The elevated hillside position of the development site for residential properties.
6. Hams Lane Visuals. These images are taken from Google Maps. They illustrate the open aspect development site and the lack of visual and audible mitigation between the development site and the residential community. The development site is yellow corn field immediately below the horizon.
7. Haunch Lane Visuals. These images are taken from Google Maps. They illustrate the open aspect development site and the lack of visual and audible mitigation between the development site and the residential community. The development site is the top green field behind the tractor and boundary hedgerow.

With kind regards,

Dave

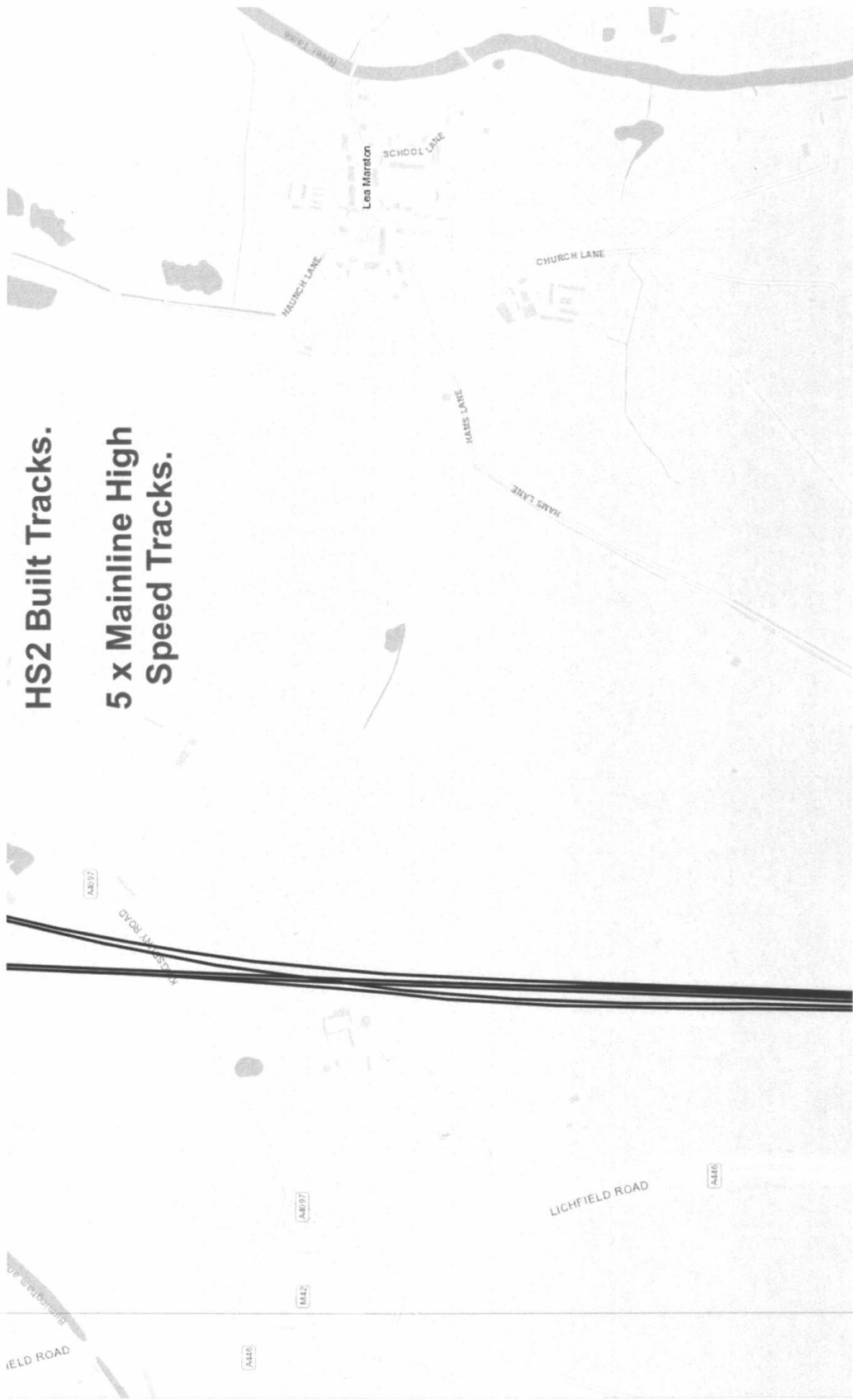


**HS2 Y Junction.
Approved under the High
Speed Rail (London -
West Midlands) Act
2017.**

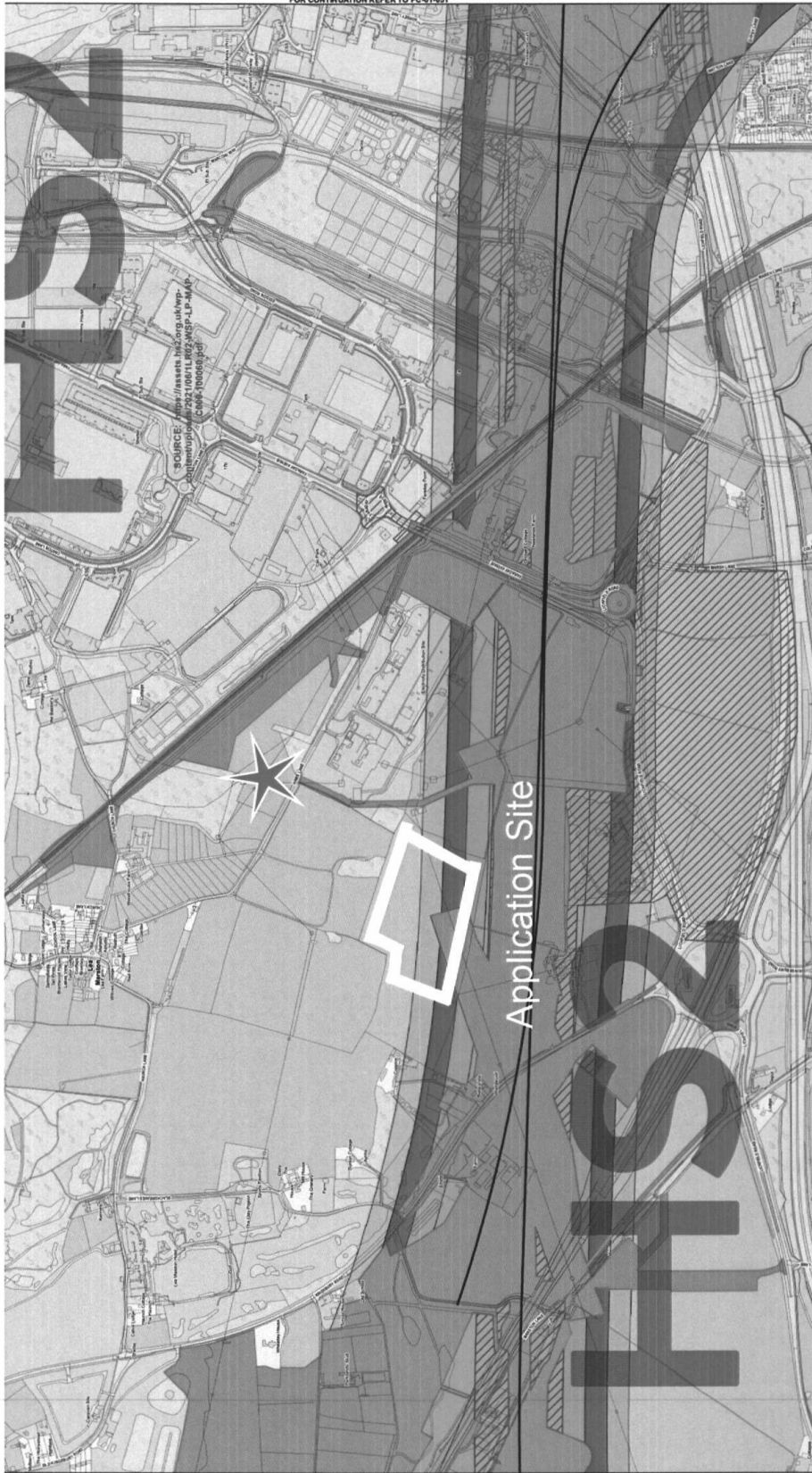
Application Site

Powered by Esri | For: HFRF Comm. | OpenStreetMap contributors, and the GIS user community | High Speed Two (HS2) |

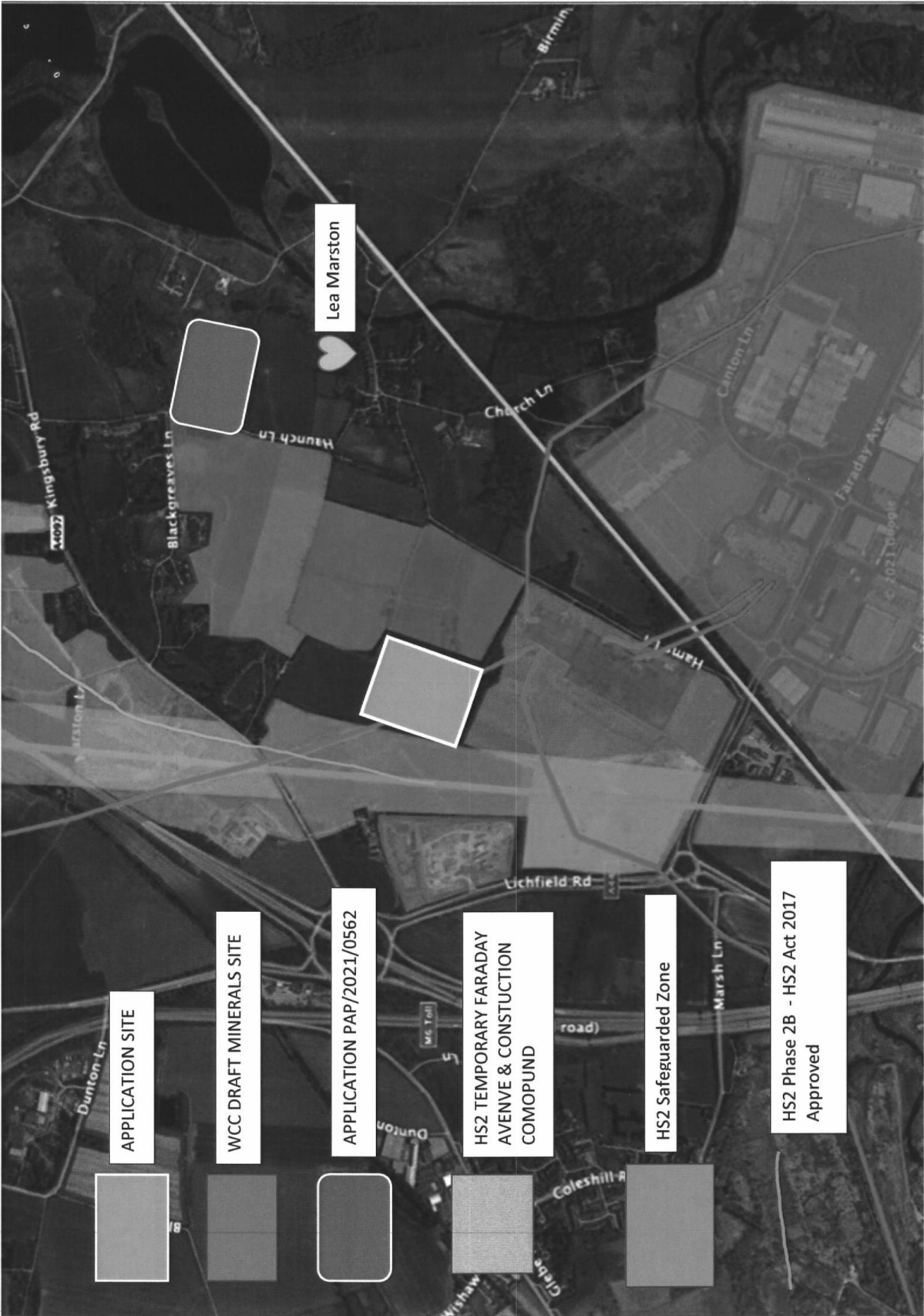
**HS2 Built Tracks.
5 x Mainline High
Speed Tracks.**

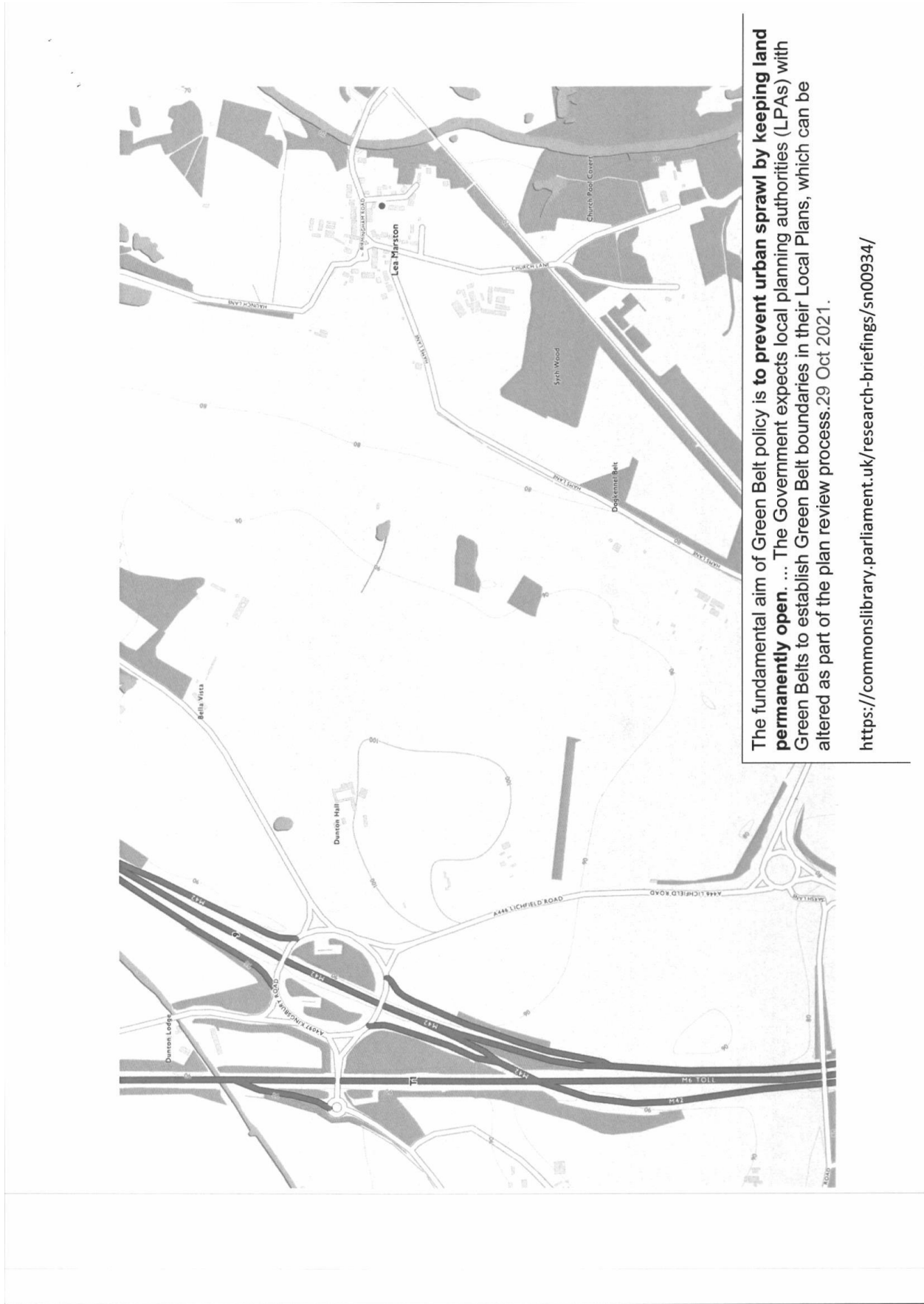


FOR CONTINUATION REFER TO PC-61-651



FOR CONTINUATION REFER TO PC-61-653





The fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open. ... The Government expects local planning authorities (LPAs) with Green Belts to establish Green Belt boundaries in their Local Plans, which can be altered as part of the plan review process.29 Oct 2021.

<https://commonslibrary.parliament.uk/research-briefings/sn00934/>







LD&DESIGN

**Response to points raised by Lea Marston Parish Council in relation to
Application number PAP/2021/0473 – Land East and South East of
Dunton Hall, Kingsbury Rd, Curdworth**

This note provides a response from the Applicant to points raised by Cllr David Reilly of Lea Marston Parish Council in the slides that he intends to present to the Planning and Development Board on December 6th 2021. The points of objection were shared with the Applicant at the request of Cllr Reilly on December 2nd.

For clarity, Cllr Reilly's comments are highlighted in red and the Applicant's responses are in black.

1. Y Junction

Cllr Reilly comment: This is a context image to show the application site in the context of the HS2 Route approved under the HS2 Act 2017. All tracks shown were approved in the 2017 Act. The Applicant's images miss the Y Junction and the associated line off their documents. This image is important as the junction will be within a viaduct at the application site and the current natural hillside will afford Lea Marston village with visual and audible mitigations. Any alteration to ground levels risks stopping this mitigation. The Junction will be illuminated when operational and as you know railway points do create noise from the passage of trains over them.

Applicant response: The Y junction has always formed part of HS2 and was included in the HS2 Bill. Any reference by us to HS2 by extension included the Y junction which is one of two Y junctions in the area, the second being where the line splits at Stonebridge and heads towards Curzon Street Station. Just for clarity, Cllr Reilly states that this Y junction will be in an aqueduct. It will not, it will be in cutting as it comes through and forms the Y junction where it then goes under the A4097. There is no proposal to remove the hill between the Y junction and Lea Marston. In fact, this hill (the highest point of Mr Dillon's land) between Lea Marston and the Y junction does not form part of the application site.

2. Built Tracks

Cllr Reilly comment: The purpose of this image is to illustrate that there will be 5 (five) HS2 mainline tracks and a series of points junctions adjoining the development site. This is the only location in the UK where there are so many lines. Additionally, the Y junction locations means that Lea Marston Parish

- b. The elevated hillside position of the development site for residential properties.

Applicant response: The highest part of Mr Dillon's land which Cllr Reilly refers to is not included in the current application. The field which it is located in slopes upwards as you head towards the A4097 end of the property.

6. Hams Lane Visuals

Cllr Reilly comment: These images are taken from Google Maps. They illustrate the open aspect development site and the lack of visual and audible mitigation between the development site and the residential community. The development site is yellow corn field immediately below the horizon.

Applicant response: It is important to note that NWBC state in the Planning and Development Board agenda pack that '*As in the Landscape Assessment, it is concluded that the visual impact will be local in extent and limited in scale given the cumulative impacts of other developments affecting the setting here*'. With regard to the Hams Lane visual 1 (where you can see part of the field yellow in grass) - this shows the field as barely visible and does not take into account the extra screening that we will be providing (please refer to the submitted Landscape Plan appended to this note).

7. Haunch Lane Visuals.

Cllr Reilly comment: These images are taken from Google Maps. They illustrate the open aspect development site and the lack of visual and audible mitigation between the development site and the residential community. The development site is the top green field behind the tractor and boundary hedgerow.

Applicant response: It is important to note that NWBC state in the Planning and Development Board agenda pack that '*As in the Landscape Assessment, it is concluded that the visual impact will be local in extent and limited in scale given the cumulative impacts of other developments affecting the setting here*'. With regard to the Haunch Lane visual 2 - this shows as visible on the left hand side a green field which is not owned by Mr Dillon and does not form part of this application. If you look carefully through the hedge on the top of this photo you can see the highest part of the field owned by Mr Dillon but this is the part of the field where there is actually no proposed development for Batteries. In fact, in this photo there is no actual sight of the area where the project is proposed.

Error! No text of specified style in document.

HS2

High Speed Two (HS2) Limited
Two Snowhill, Snow Hill Queensway
Birmingham B4 6GA

Telephone: 08081 434 434
Minicom: 08081 456 472
Email: hs2enquiries@hs2.org.uk
gov.uk/hs2

To whom it may concern

20 August 2021

Dear Sirs,

Access to land at Dunton Hall, off Hams Lane, Lea Marston

As part of the consideration in Parliament of the High Speed Rail (London to West Midlands) Act 2017, the Secretary of State gave an assurance to Patrick Dillon, owner of Dunton Hall, Curdworth, that an access road would be constructed in approximately the position shown with a thick red line on the attached plan, between Hams Lane and Mr Dillon's retained land (as shown shaded purple on the plan). The access road is to be suitable for a range of agricultural and commercial uses to include two-way passing of HGVs.

Following Royal Assent to the said Act, HS2 Ltd is in the process of designing the said access road. The relevant land has been purchased, design is well advanced, and it is envisaged that the access road will be constructed in the coming 9-12 months. As a work authorised by the said Act, HS2 Ltd will obtain any additional consents necessary to construct the road.

HS2 Ltd understands that Mr Dillon has proposals for a battery storage facility on his retained land that will rely upon access being afforded via the said access road. HS2 Ltd is content that the proposals are consistent with the assurance given and is working to deliver the access road in a timely manner to allow for this development to proceed.

Pending completion of the new access road, HS2 Ltd is prepared to issue a licence to allow Mr Dillon and other authorised users to take access over the strip of land shown shaded green between Kingsbury Road and the retained land in order to avoid any delay to the development and to allow use and management of the land in the meantime.

If there are any questions about HS2's proposals, please contact me.

High Speed Two (HS2) Limited, registered in England and Wales.
Registered office: Two Snowhill, Snow Hill Queensway, Birmingham B4 6GA. Company registration number: 06791686. VAT registration number: 181 4312 30.

Yours faithfully

A handwritten signature in black ink that reads "Steven Kidd". The signature is written in a cursive style with a long horizontal flourish extending to the right.

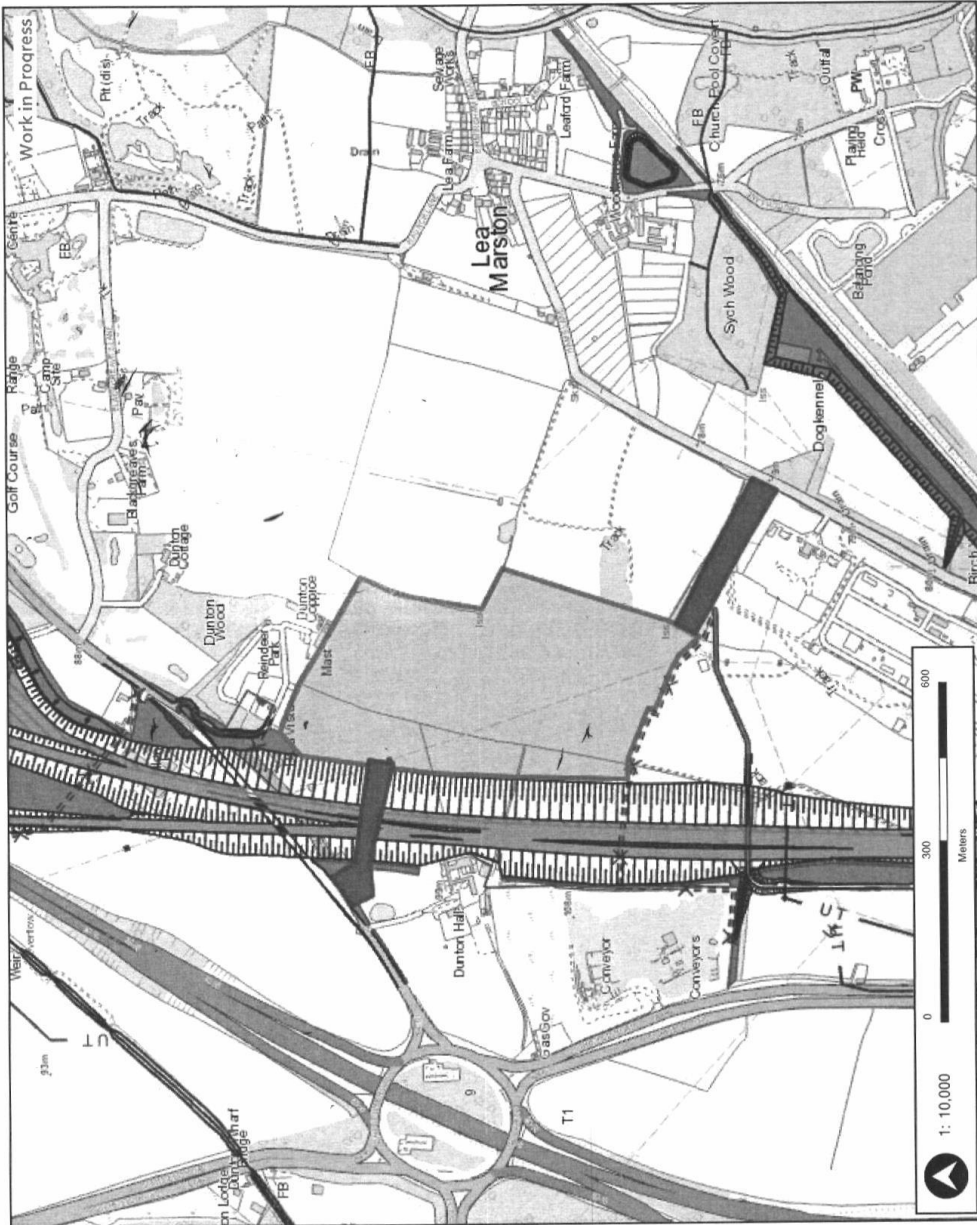
Steven Kidd

Senior Property Acquisition Manager
High Speed Two (HS2) Ltd
Email: steven.kidd@hs2.org.uk

H52

Access to Dunton Hall retained land

20-AUG-21



- | | |
|---|---|
| Phase 1 High Speed route design element | Phase 2a High Speed route design element |
| Bored Tunnel | At Grade |
| Cutting | Bored Tunnel |
| Embankment | Cutting |
| Green Tunnel | Embankment |
| Retaining Wall | Tunnel Portal |
| Station | Viaduct |
| Tunnel Portal | |
| Viaduct | |
| Phase 2b High Speed route design element | |
| At Grade | |
| Bored Tunnel | |
| Cut and Cover Tunnel | |
| Cutting | |

H52 is issued on responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation of it is issued in part or issued in any way, and database rights 2019 OS 100049190. Derived from BGS Digital Data under licence 2015/161 BP British Geological Survey, © NERC.
 © Crown copyright material is reproduced with the permission of Land Registry under delegated authority from the Controller of Her Majesty's Stationery Office.
 This material was last updated in 2018 and may not be copied, distributed, sold or published without the formal permission of Land Registry and Ordnance Survey. Only an official copy of a document issued by Land Registry and Ordnance Survey may be used for legal or other official purposes.

High Speed Two Ltd © 2019. Registered in England number: 06791686. Registered office: Two Snowhill, Queensway, Birmingham B4 6QA.

PLANTING NOTES:

All existing vegetation to be protected in accordance with BS5837. Trees in relation to design, demolition and construction.

Top soil and sub soil will be excavated as part of the construction process. Landscape works associated with topsoil and sub soil works on site will be in accordance with BS 4428:1989 'Code of Practice for General Landscape Operations' and BS 5852: 2015 'Specification for Topsoil'.

Planting stock
 All planting shall be supplied in accordance with relevant British Standards including:
 • BS 3338 Nursery Stock - Specification for trees and shrubs and ground cover plants
 • BS 4043 Recommendations for transplanting root balled trees
 • BS 4428 General Landscaping operations
 • BS 5236 Cultivation and planting of trees in the advanced nursery stock category

Trees
 All wilts and feathered trees to be supported by canes as required.

Shrubs
 All ground cover shrubs shall be supplied as established and comply with quality standards as set out in BS 3336: Part 1. All container grown stock to comply with current edition of British Container Grown Standards to the grade specified. Planting holes for shrubs to be 150mm wider than root spread and 400mm deep.

Tree/Shrub Protection
 All proposed trees and shrubs to be protected by appropriate biodegradable tree/shrub shelters to ensure successful establishment and growth, and protection against rabbits/deer if applicable. Specified protection methods should not impede natural movement of shrubs or restrict growth.

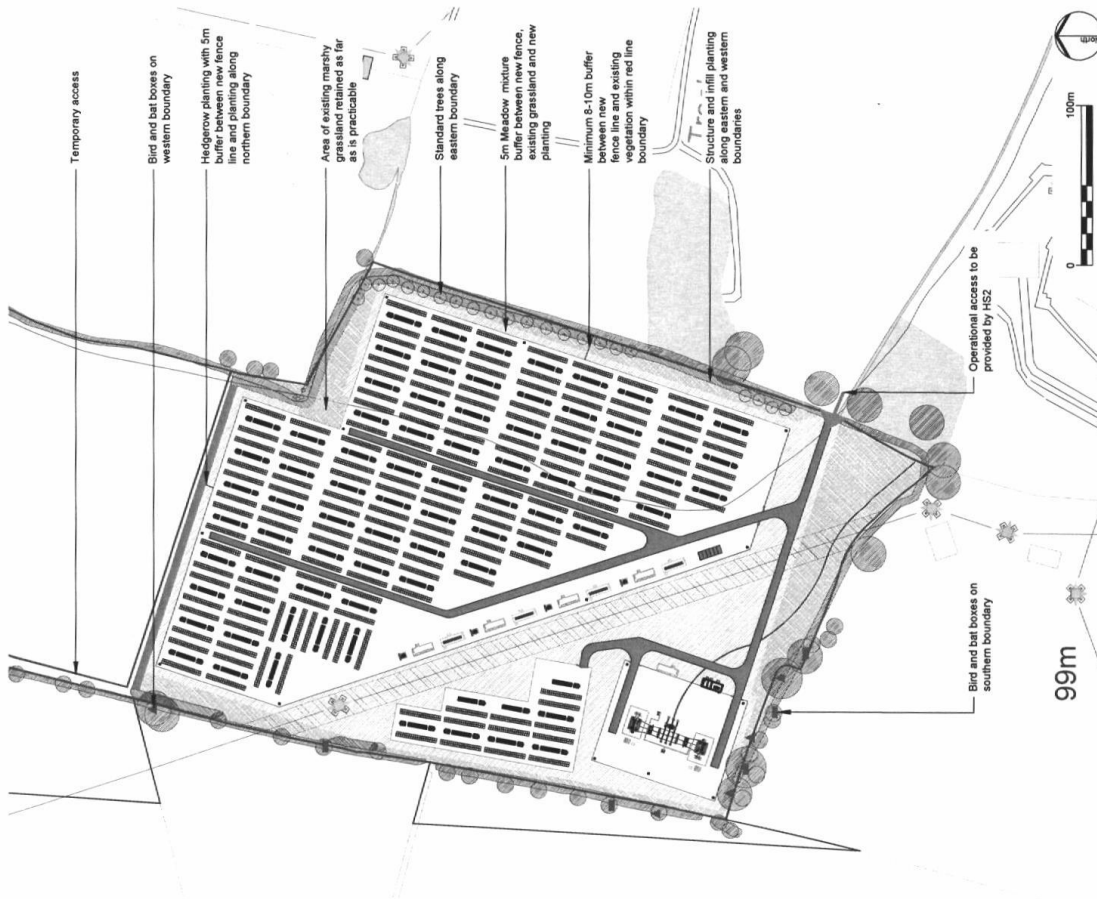
Meadow Mixture
 Areas to be seeded with meadow grass mixture. Enriched with EMZ - Standard General Purpose Meadow Mixture or similar.

Indicative Plant Schedule:

Proposed Trees
 All trees root ball, feathered, and 2x/2age to be planted as shown on plan.

Acer campestre, Field Maple, 300-350cm 30%
 Malus sylvestris, Crab Apple, 300-350cm 15%
 Prunus padus, Bird Cherry, 250-300cm 15%
 Prunus spinosa, Blackthorn, 250-300cm 10%
 Sorbus accipifera, Downy Woodpecker, 150-200cm 10%
 Quercus robur, Oak, 300-350cm 20%

Proposed Structure Infill and Hedgerow Planting
 Corylus monogyna, Hawthorn, 1+2 120-150cm BR 70%
 Corylus avellana, Hazel, 1+1 120-150cm BR 10%
 Prunus padus, Bird Cherry, 1+2 120-150cm BR 5%
 Prunus spinosa, Blackthorn, 1+2 120-150cm BR 5%
 Rosa canina, Dog Rose, 1+0 120-150cm BR 5%
 Ilex aquifolium, Holly 1+1 60-80cm BR 5%



LEGEND

Proposed Landscape and Ecological Features

	Refine Boundary
	Existing Vegetation (hedgerow and trees)
	Existing Grassland
	New Structure Planting and Infill Boundary Hedgerow Enhancement
	New Hedgerow Planting
	Meadow mixture
	Indicative Proposed Standard Trees (20m)
	Bird Box
	Bat Box

GENERAL NOTES:

1. This drawing should be read in conjunction with all relevant architects, engineers, and ecologists drawings and reports.

REV. DESCRIPTION ANP. DATE

LD A DESIGN

PROJECT TITLE
8058 Hams Hall

DRAWING TITLE
Hams Hall Battery Energy Storage System

ISSUED BY Glasgow T. 0141 222 9780
 DATE 28/07/2021 DRAWN GC
 SCALE#A3 1:2,500 CHECKED BC
 STATUS Final APPROVED BC

DWG. NO 8048_08

No dimensions are to be scaled from this drawing.
 All dimensions are to be checked on site.
 Area measurements for indicative purposes only.
 © LDA Design Consulting Ltd. Quality Assured to BS EN ISO 9001: 2015
 Sources: Ordnance Survey

This drawing may contain Ordnance Survey material by permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown Copyright 2019. All rights reserved. Reference number: 0100031672.
 OS Open data / © Natural England / © DEFRA / © DEIRA / © DECCA / © English Heritage: Aerial Photography - ESRI, DigitalGlobe, GeoEye, i-cubed, USDA, FSA, USGS, AEX, Geomatics, AeroGRID, IGN, ICG, swisstopo, the GIS User Community

PLANTING NOTES:

- All existing vegetation to be protected in accordance with BS5837:2012 in relation to design, demolition and construction.
Top soil and sub soil will be accounted as part of the construction process. Landscape works associated with disposal and sub soil works on site will be in accordance with BS 4428:1989 Code of Practice for General Landscape Operations and BS 3982:2015 Specification for Topsoil.
Planting stock:
All planting shall be supplied in accordance with relevant British Standards including:
 - BS 3096 Nursery Stock - Specification for trees and shrubs and ground cover plants
 - BS 4043 Recommendations for transplanting root balled trees
 - BS 4428 General Landscaping operations
 - BS 5236 Cultivation and planting of trees in the advanced nursery stock category

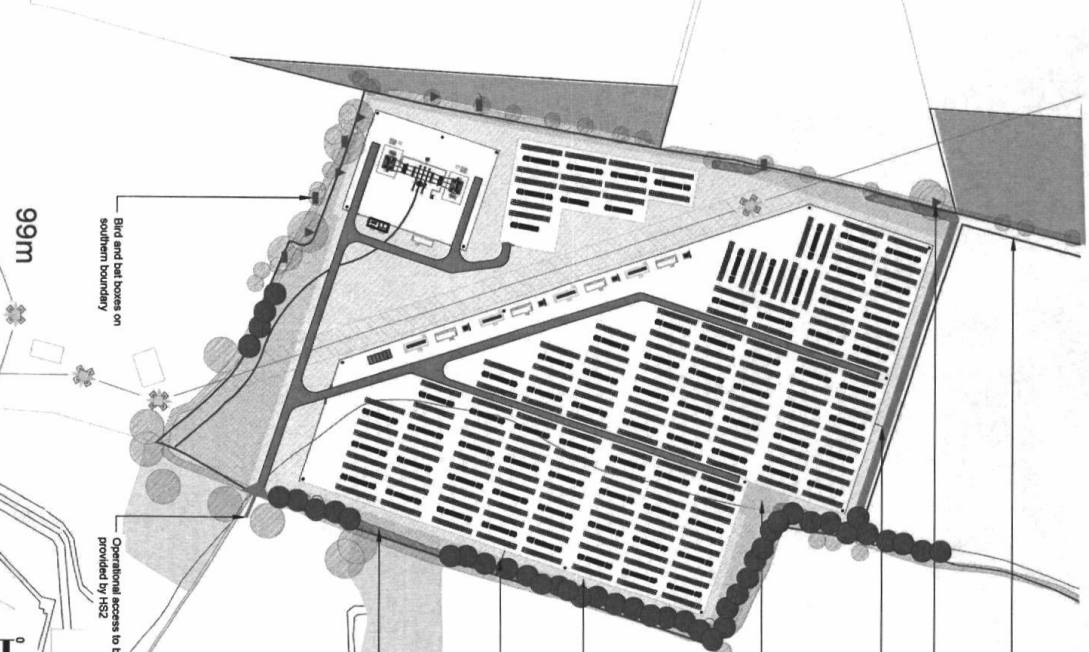
Shrubs:
All ground cover shrubs shall be supplied as established and comply with quality standards as set out in BS 3096: Part 1. All container grown stock to comply with current edition of British Container Grown Standards to the grade specified. Planting holes for shrubs to be 150mm wider than root spread and 400mm deep.

Tree/Strut Protection
All proposed trees and shrubs to be protected by appropriate biodegradable tree/strut shelters to ensure successful establishment and growth, and protection against rabbits/vermin if applicable. Specified protection methods should not impede natural movement of shrubs or restricted growth.

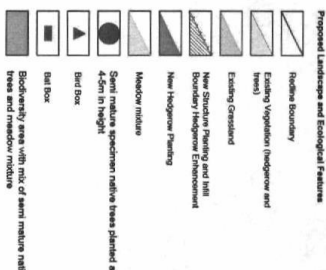
Meadow Mixtures
Trees to be sowed with meadow grass mixture. Ervognone and other meadow mixtures - Standard General Purpose Meadow Mixture or similar.

Indicative Plant Schedule:

- Proposed Trees**
All trees root ball, feathered, and 2x/2cage to be planted as shown on plan.
- Acer campestre, Field Maple, 400-500cm 30%
 - Malus sylvestris, Crab Apple, 400-500cm 15%
 - Prunus domestica, Damson, 400-500cm 15%
 - Prunus mahaleb, Bird Cherry, 400-500cm 15%
 - Prunus avium, Bird Cherry, 400-500cm 15%
 - Sorbus aucuparia, Rowan, 400-500cm 10%
 - Quercus robur, Oak, 400-500cm 20%
- Proposed Structure Infill and Hedge/Planting**
 - Crataegus monogyna, Hawthorn, 1-2 120-150cm BR 70%
 - Corylus avellana, Hazel, 1-1 120-150cm BR 10%
 - Prunus mahaleb, Bird Cherry, 1-2 120-150cm BR 5%
 - Prunus spinosa, Blackthorn, 1-2 120-150cm BR 5%
 - Rosa canina, Dog Rose, 1-0 120-150cm BR 5%
 - Ilex aquifolium, Holly, 1-1 60-90cm BR 5%



- Temporary access
- Bird and bat boxes on western boundary
- Hedge/row planting with 5m buffer zone between fence line and planting along northern boundary
- Area of existing meadow grassland retained as far as is practicable
- 5m Meadow mixture buffer between new fence, existing grassland and new planting
- Minimum 8-10m buffer between new fence and existing vegetation within red line boundary
- Structure and mill planting along eastern and western boundaries



GENERAL NOTES:

1. This drawing should be read in conjunction with all relevant architecture, engineers, and ecologists drawings and reports.

REV.	DESCRIPTION	APP.	DATE
------	-------------	------	------

LD&DESIGN

PROJECT TITLE
8058 Hams Hall

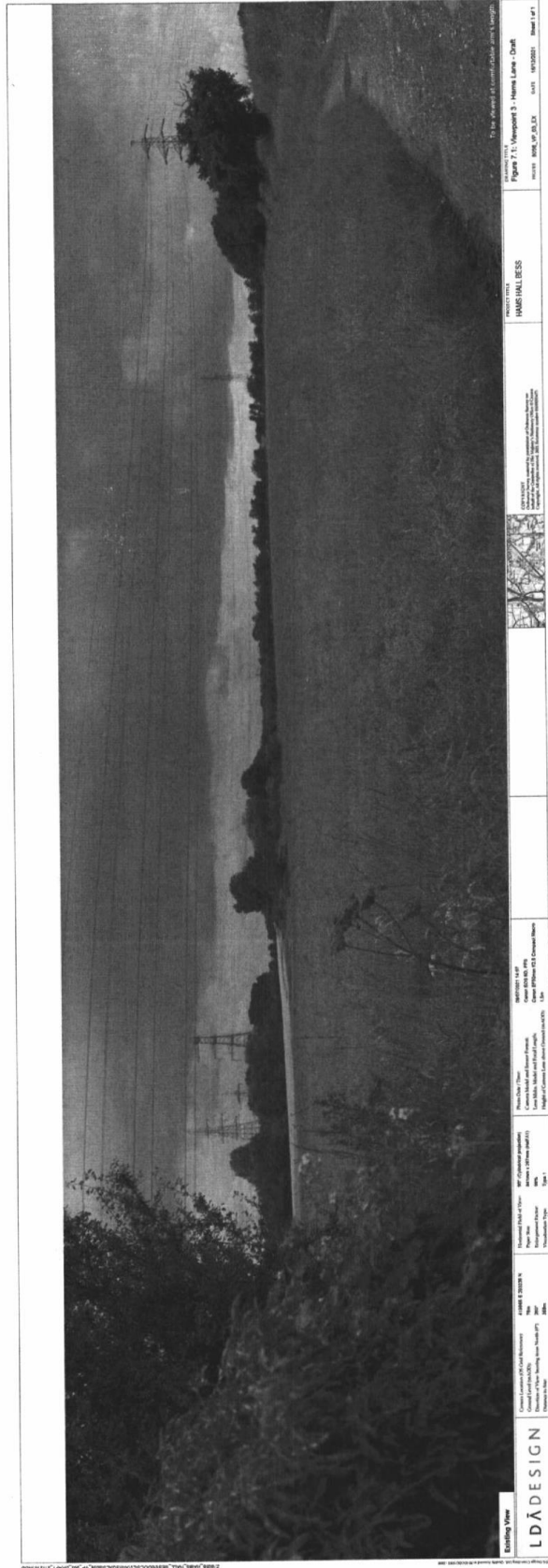
DRAWING TITLE
Hams Hall Battery Energy Storage System

ISSUED BY	Glasgow	T: 0141 222 9780
DATE	18/12/2021	DRAWN
SCALE	A3	CHECKED
STATUS	Final	APPROVED
		DB
		DB
DWG. NO	8048_09	

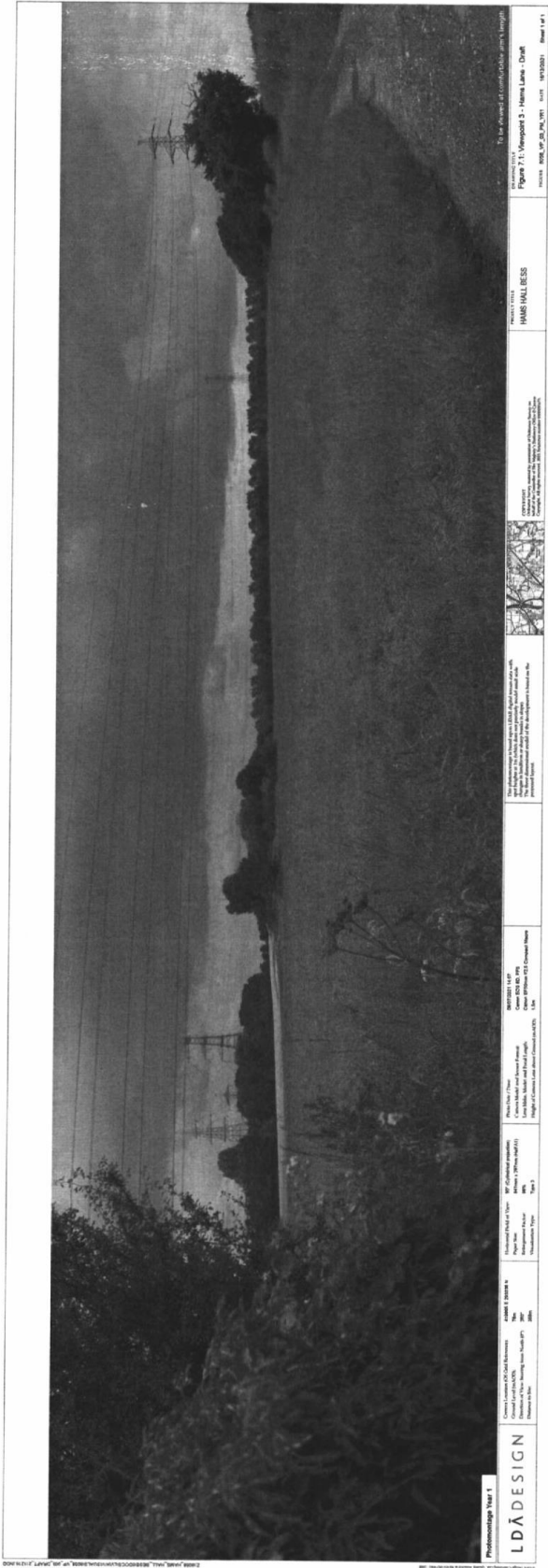
No dimensions are to be scaled from this drawing.
All dimensions are to be checked on site.
Area measurements for indicative purposes only.
© LDA Design Consulting Ltd. Quality Awarded to BS ISO 9001:2015
Source: Ordnance Survey

This drawing may contain Ordnance Survey material by permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office. © Crown Copyright 2019. All rights reserved. Reference number 0100031673. OS Open Data / National England / © DEFRA / © DECC / © English Heritage / Aerial Photography - ESRI, DigitalGlobe, GeoEye, IGN, AerGRID, Planet, the GIS User Community

Appendix H



Building View LD&DESIGN <small>LD&DESIGN, INC. 10000 15th Street, Suite 100, Denver, CO 80202 Phone: (303) 751-1000 Fax: (303) 751-1001 www.ldandesign.com</small>		<small>Project Name:</small> Figure 7.13, Viewpoint 3 - Home Lane - CR#1	<small>Project No.:</small> 10000_15th_1000	<small>Project Date:</small> 10/13/2011	<small>Project Location:</small> Home Lane, Denver, CO	<small>Project Status:</small> Final	<small>Project Manager:</small> [Name]	<small>Project Engineer:</small> [Name]	<small>Project Designer:</small> [Name]	<small>Project Checker:</small> [Name]	<small>Project Approver:</small> [Name]
--	--	---	--	--	---	---	---	--	--	---	--



PHOTOGRAPHY: MARK S.
LD A DESIGN
 1000 JAMES LAYTON BLVD. SUITE 100, WESTMINSTER, CO 80540
 (303) 440-1100
 www.ldadesign.com

PROJECT TITLE Figure 7.1 - Appendix 3 - Hains Lake - 0308	PROJECT NUMBER HMS-11-001	DRAWING NUMBER 0308-03-01-01	DATE 11/15/2011	DRAWN BY LD A DESIGN	CHECKED BY LD A DESIGN	APPROVED BY LD A DESIGN
---	-------------------------------------	--	---------------------------	--------------------------------	----------------------------------	-----------------------------------

This drawing is the property of LD A DESIGN. It is to be used only for the project and location specified. No part of this drawing may be reproduced or transmitted in any form or by any means electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without the prior written permission of LD A DESIGN.



Figure 1-1: Bridge #3 - Volume 1 - CD&G
DATE: 08/26/2015 10:20:52 AM

PROJECT NAME
HAMBURG BRIDGE

PROJECT LOCATION
HAMBURG BRIDGE
COUNTY OF ST. LOUIS, MISSOURI
CITY OF HAMBURG, MISSOURI

DATE OF PHOTOGRAPH
08/26/2015

PHOTOGRAPHER
LD&D DESIGN

SCALE
AS SHOWN

PROJECT NUMBER
15-00000

PROJECT LOCATION
HAMBURG BRIDGE
COUNTY OF ST. LOUIS, MISSOURI
CITY OF HAMBURG, MISSOURI

HS2**High Speed Two (HS2) Limited**
Two Snowhill, Snow Hill Queensway
Birmingham B4 6GATelephone: 08081 434 434
Minicom: 08081 456 472
Email: hs2enquiries@hs2.org.uk
gov.uk/hs2**To whom it may concern**

20 August 2021

Dear Sirs,

Access to land at Dunton Hall, off Hams Lane, Lea Marston

As part of the consideration in Parliament of the High Speed Rail (London to West Midlands) Act 2017, the Secretary of State gave an assurance to Patrick Dillon, owner of Dunton Hall, Curdworth, that an access road would be constructed in approximately the position shown with a thick red line on the attached plan, between Hams Lane and Mr Dillon's retained land (as shown shaded purple on the plan). The access road is to be suitable for a range of agricultural and commercial uses to include two-way passing of HGVs.

Following Royal Assent to the said Act, HS2 Ltd is in the process of designing the said access road. The relevant land has been purchased, design is well advanced, and it is envisaged that the access road will be constructed in the coming 9-12 months. As a work authorised by the said Act, HS2 Ltd will obtain any additional consents necessary to construct the road.

HS2 Ltd understands that Mr Dillon has proposals for a battery storage facility on his retained land that will rely upon access being afforded via the said access road. HS2 Ltd is content that the proposals are consistent with the assurance given and is working to deliver the access road in a timely manner to allow for this development to proceed.

Pending completion of the new access road, HS2 Ltd is prepared to issue a licence to allow Mr Dillon and other authorised users to take access over the strip of land shown shaded green between Kingsbury Road and the retained land in order to avoid any delay to the development and to allow use and management of the land in the meantime.

If there are any questions about HS2's proposals, please contact me.

Yours faithfully

A handwritten signature in black ink that reads "Steven Kidd". The signature is written in a cursive style with a long horizontal flourish extending to the right.

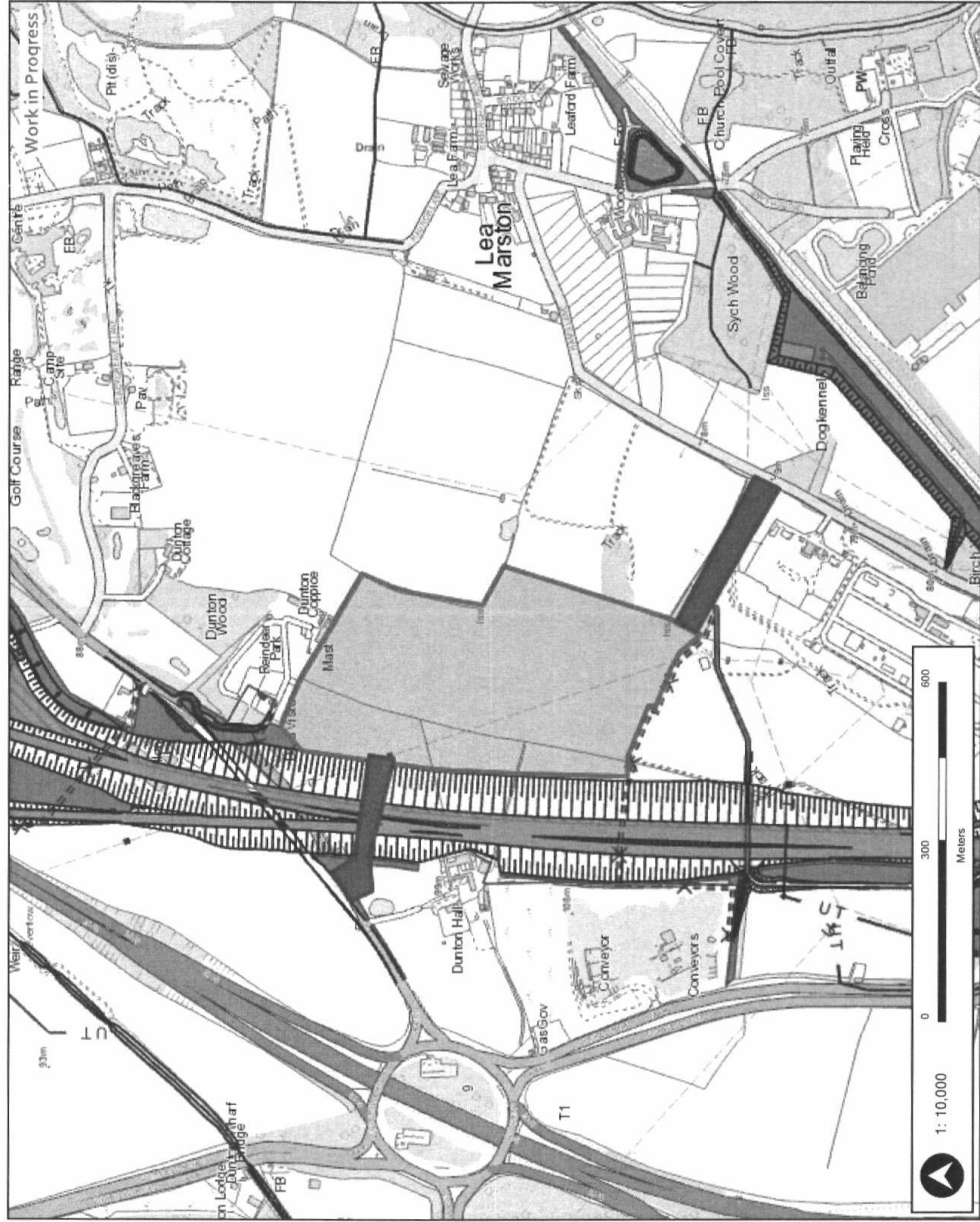
Steven Kidd

Senior Property Acquisition Manager
High Speed Two (HS2) Ltd
Email: steven.kidd@hs2.org.uk

HS2

Access to Dunton Hall retained land

20-Aug-21



- Phase 1a High Speed route design element
 - Bored Tunnel
 - Cutting
 - Embankment
 - Green Tunnel
 - Retaining Wall
 - Station
 - Tunnel Portal
 - Viaduct
- Phase 2a High Speed route design element
 - At Grade
 - Bored Tunnel
 - Cutting
 - Embankment
 - Tunnel Portal
 - Viaduct
- Phase 2b High Speed route design element
 - At Grade
 - Bored Tunnel
 - Cut and Cover Tunnel
 - Cutting

HS2 Ltd accepts no responsibility for any circumstances, which amend or alter the information contained in this document, which is issued in part or issued in full in any way.
© Crown copyright and database rights 2019 OS 100046190.
© Ordnance Survey. All rights reserved. Licence 2019 101 101.
© British Geological Survey, © NERC.
© Crown copyright material is reproduced with the permission of Land Registry under delegated authority from the Controller of Her Majesty's Stationery Office.
This document was last updated in 2018 and may not be copied, distributed, sold or published without the formal permission of Land Registry and Ordnance Survey. Only an official copy of a title plan or register obtained from the Land Registry may be used for legal or other official purposes.

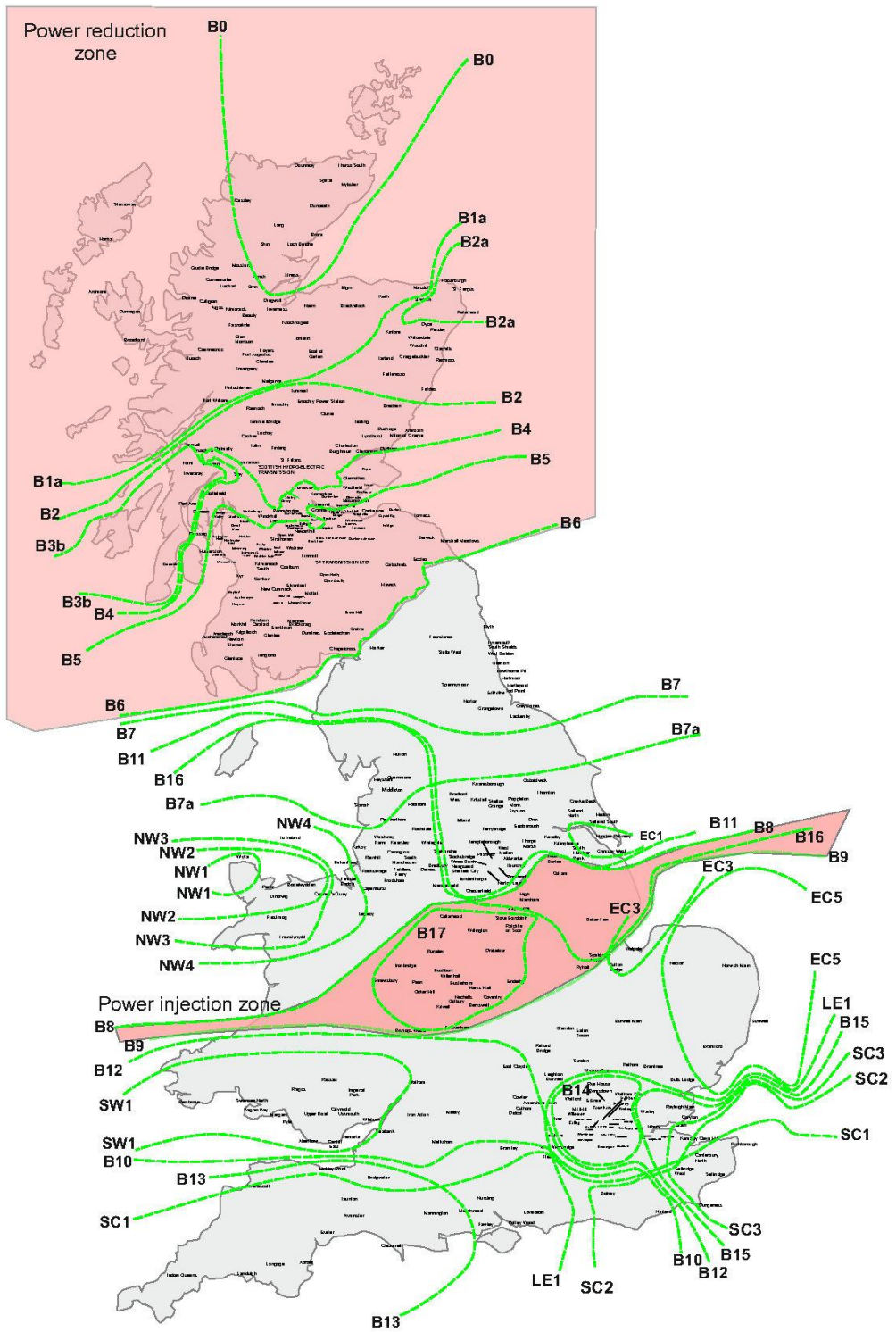
APPENDIX J

1. The UK needs four times the amount of renewables currently installed to hit its zero carbon targets.
2. The UK is closing coal power stations taking them off the grid. National Grid cannot manage the security of the electricity network without energy storage.
3. There is surplus renewable energy produced in Scotland and not enough power to meet demand in the South and Midlands. Surplus renewable energy is wasted as it can't be used in Scotland or transported to the South.
4. National Grid needs a technology to take this excess energy off the grid when it's not needed, store it and put it back on the grid when it is.
5. The Midlands acts as a ballast to balancing the UK's network. You could think of oversupply in Scotland and undersupply in the Midlands and South as a seesaw.
6. The solution is best achieved through energy storage
7. National Grid has identified an area in the Midlands as a location to help solve the problem (this is shown as the B8/B9 zone on the attached plan – to act as the ballast so to speak. The idea is that surplus energy comes into the Midlands in this zone and then can be used, stored or sent to the South using existing infrastructure. The alternative is for National Grid to build a 500-mile transmission line from Scotland to London.
8. The minimum size for a Battery Energy Storage System is 300 to 350MW for it to be economically and operationally viable to connect at the voltage National Grid require – 400KV.
9. There are only 21 substations in the country where this size of storage can be accommodated operationally - as shown on the attached table.
10. Of these 21, 11 are not on a part of the National Grid Network currently affected by issues and therefore not relevant to help the problem.
11. Of the remaining 10, only 2 are in the B8/B9 zone identified by National Grid as being able to help solve the problem.
12. Both of the remaining 2 are in the Green Belt – Bustleholme in Sandwell's area and Hams Hall. Of these only Hams Hall has land available for a project of the scale required by National Grid. The other has significant land and connection constraints and it's not possible to connect a project large enough to satisfy National Grid's minimum project size.
13. Hams Hall substation is the only option for storage at scale in the B8/B9 zone
14. The Hams Hall site itself is highly constrained from a land perspective:

- a) The area to the west has been acquired by the DfT for HS2
- b) The areas to the south and east are already used for commercial and industrial purposes.
- c) Land immediately east is within the 1995 and 2018 minerals safe-guarding plan and would also have potential impacts on the setting of Lea Marston

15. As a result, the site we are proposing to move forward with, which is to be removed from the original 1995 Minerals Plan and is not included in the proposed 2018 Minerals Plan, is the only technically viable site close to the substation with a willing landowner.

Constraint Management Pathfinder Transmission System Boundaries of Focus



Name	Latitude	Longitude	Likely Land	In Constraint Management Zone	Postcode	Peak DNO D1	Demand	Heat Generation	Generation Headroom	Fault Lu	Free T-Free B	Disclaimer
Iron Acton 132kV	51.56899	-2.48128	Yes	Yes - but not in identified B8 - B9 zone	B57 9TX	421	900h	400h	51/07/2020	Yes	0	0 This data was correct as of 10/05/2021.
Mill Hill 132kV	51.61809	-0.2081	No	Yes - but not in identified B8 - B9 zone	NW7 1NU	235	900h	400h	51/07/2020	Yes	0	0 This data was correct as of 10/05/2021.
Barking C 132kV	51.52086	-0.11121	No	Yes - but not in identified B8 - B9 zone	IG11 6EB	60	900h	400h	51/07/2020	Yes	0	0 This data was correct as of 10/05/2021.
Bilmsdown 132kV	51.56442	-0.02317	No	Yes - but not in identified B8 - B9 zone	DN3 7NJ	581	900h	400h	51/07/2020	Yes	0	0 This data was correct as of 10/05/2021.
Corinth Clay 400kV	51.23061	-0.07743	Yes	No	DN5 4BP	168	900h	400h	51/07/2020	Yes	0	0 This data was correct as of 10/05/2021.
Northfleet East 400kV	51.42601	-0.32283	No	No	DA11 8HK	397	900h	400h	51/07/2020	Yes	0	0 This data was correct as of 10/05/2021.
St Johns Wood 400kV	51.52738	-0.17003	No	No	NW8 8LB	1085	900h	400h	51/07/2020	Yes	0	0 This data was correct as of 10/05/2021.
Hems Hall 400kV	51.53113	-1.71421	Yes	Yes - in identified B8 - B9 zone	848 1AW	487	900h	400h	51/07/2020	Yes	0	0 This data was correct as of 10/05/2021.
Tilbury 400kV	51.46054	0.303542	Yes	No	TH18 8UJ	207	900h	400h	51/07/2020	Yes	0	0 This data was correct as of 10/05/2021.
Barking 400kV	51.522	-0.11538	No	Yes - but not in identified B8 - B9 zone	IG11 6EB	60	900h	400h	51/07/2020	Yes	0	0 This data was correct as of 10/05/2021.
City Road 400kV	51.53058	-0.09607	No	No	N1 7RW	693	900h	400h	51/07/2020	Yes	0	0 This data was correct as of 10/05/2021.
Eltham 400kV	51.51115	-0.5458	No	No	W02S-1 8DT	515	900h	400h	51/07/2020	Yes	0	0 This data was correct as of 10/05/2021.
Heyham 400kV	51.05178	-2.89132	Yes	No	LA5 5UJ	25	900h	400h	51/07/2020	Yes	0	0 This data was correct as of 10/05/2021.
Emmery 400kV	51.33617	-1.07743	Yes	No	RG26 58J	403	900h	400h	51/07/2020	Yes	0	0 This data was correct as of 10/05/2021.
Lodge 400kV	51.02676	-0.03387	Yes	No	U14 4HF	326	900h	400h	51/07/2020	Yes	0	0 This data was correct as of 10/05/2021.
Littlebrook 400kV	51.46468	0.23932	No	No	DA1 5PH	161	900h	400h	51/07/2020	Yes	0	0 This data was correct as of 10/05/2021.
Southholm 275kV	51.53232	-1.86092	No	Yes - in identified B8 - B9 zone	W5 4HZ	385	900h	400h	51/07/2020	Yes	0	0 This data was correct as of 10/05/2021.
South 275kV	51.4411	-1.351	Yes	No	NE24 1DP	24	900h	400h	51/07/2020	Yes	0	0 This data was correct as of 10/05/2021.
Newcross 275kV	51.48418	-0.05915	No	Yes - but not in identified B8 - B9 zone	SE15 1LE	424	900h	400h	51/07/2020	Yes	0	0 This data was correct as of 10/05/2021.
Willenden 275kV	51.53295	-0.23688	No	Yes - but not in identified B8 - B9 zone	NW10 7AB	534	900h	400h	51/07/2020	Yes	0	0 This data was correct as of 10/05/2021.
Capenhurst 275kV	51.28726	-2.46417	Yes	Yes - but not in identified B8 - B9 zone	DN1 6HE	249	900h	400h	51/07/2020	Yes	0	0 This data was correct as of 10/05/2021.