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PEGASUS GROUP

Old Wood Energy Park

Land west of Wysall, Nottinghamshire

Planning Statement

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1. Executive Summary

1.1. Exagen Development Limited ('The Applicant') is seeking planning permission from Rushcliffe Borough Council (RBC) in their capacity as the Local Planning Authority (LPA) for the construction, operation and subsequent decommissioning of a renewable energy park comprising ground mounted Solar Photovoltaics (PV) with co-located Battery Energy Storage System (BESS) at the point of connection, together with associated infrastructure, access and landscaping (the Development; Old Wood Energy Park). The Development is located over two parcels of land to the west of the village of Wysall in Nottinghamshire and would be linked by an underground cable which will extend from the eastern side of the northern parcel before following the route of the highway along Bradmore Road – Keyworth Road – Main Street – Costock Road – Wysall Road (the Site).

1.2. The Northern Parcel, centred at grid reference X: 459472 Y: 328041, includes 8no. medium to large scale field enclosures at Lodge Farm situated to the west of Bradmore Road. A linear woodland, known as Old Wood, forms the northern edge of the northern parcel. The northern parcel is proposed to accommodate circa 2/3 of the solar farm.

1.3. The Southern Parcel, centred at X: 459568 Y: 327099, is situated c. 325m to the south of the northern parcel and separated by a series of adjoining agricultural fields. The parcel includes 5no. small to medium field enclosures and can be accessed from Wysall Road / Costock Road which forms the southern boundary of the parcel. The southern parcel is proposed to accommodate the battery storage compound, substation and point of connection into the existing 132kV overhead electricity line as well as circa 1/3 of the solar farm.

1.4. The purpose of this Planning Statement is to set out the Planning Case for the Development, including setting out the relevant national and local planning policy context for the Development. This Planning Statement should be read in conjunction with the other documents that are submitted as part of the planning application, including the numerous environmental and technical reports and drawings that have been produced.

1.5. The Development would provide a clean, renewable and sustainable form of electricity generation directly into the local electricity network and would be equipped with ancillary carbon zero energy storage to provide both ancillary storage to the solar farm but also energy balancing services to the National Grid.

1.6. The Development would add to both Rushcliffe Borough Council's (RBC) progress in meeting their renewable energy targets and would also assist in meeting national targets for both energy supply and low carbon energy development. The principle of renewable energy, such as solar power, is supported by both local and national policy.

1.7. It is estimated that the solar farm component of the Development would have an export capacity of up to 49.9MW of renewable energy per year, which could provide approximately

enough energy to power up to 17,500 homes and displace approximately 22,455 tonnes of CO_2 per annum[1].

1.8. It is noted that RBC have declared a Climate Emergency as of March 2020 and have made a commitment towards becoming a carbon neutral organisation by 2030, in addition to the commitments of the UK Government that set a legally binding target of net-zero carbon emissions by 2050. Achieving these targets will require significant investment in the development of renewable energy infrastructure both locally and across the UK.

1.9. The Applicant has undertaken an extensive pre-application public consultation exercise in their preparation of this application, including consulting the local community, and other stakeholders. Details of the full pre-application exercise conducted is discussed within the supporting Statement of Community Engagement (SCE) report. The applicant has listened to all views expressed by consultees during the duration of the pre-application consultation and has made appropriate changes to the Proposed Development to address and mitigate concerns raised where possible. Some of these changes have resulted in increased set back distances and improved landscaping. Where changes haven't been made, the issues are largely considered to be mitigated. This is discussed in further detail throughout the supporting SCE and Design and Access Statement reports. The Development complies with the relevant planning policy and there are significant benefits associated with the delivery of the Development. The Site is not located within green belt or in close proximity to any valued landscapes or landscape designations and benefits from a strong existing landscape framework which provides natural containment of the site parcels which, when combined with the substantial landscape mitigation proposals, will significantly reduce the visibility of the development and deliver significant biodiversity net gains.

1.10. Whilst a small proportion of the site is identified to fall with Flood Zones 2 &3, the scheme has been sensitively designed to remove all critical equipment from areas at highest flood risk and incorporate an appropriate drainage strategy to remove any susceptibility to flood risk both within the site and surrounding land.

1.11. The environmental and technical reports that are submitted with this planning application demonstrate that there will be no unacceptable environmental impacts.

1.12. The Development would bring significant environmental and economic benefits through the delivery of the scheme. These include but are not limited to;

- Clean energy generation to assist in meeting the targets set locally and nationally to reduce CO_2 emissions and make a significant positive contribution to address the climate emergency declaration of the Council;
- Contributing to Energy security through generating energy from a renewable source to reduce reliance upon politically sensitive fossil fuels;
- Providing Biodiversity Net Gain across the site which are significantly above future legal and policy requirements due to come into force in January 2024;

[1] Based upon BEIS's "all fossil fuels" emissions statistic of 450 tonnes of carbon dioxide per GWh of electricity supplied in the Digest of UK Energy Statistics (published July 2019, p96) and an estimate of 49.9GWh of generation per year.

- Delivering Economic benefits from farm diversification whilst supporting continued multi-purpose use of the land for less intensive agricultural use;

- Retention of the site's future use as agricultural land with a time restricted, temporary and reversible development (approximately 40-years), following which will result in soil improvement as a result of land be rested from intensive agricultural practises.

1.13. These factors, when combined with the significant need for low carbon development and the requirement to provide energy security both locally and nationally, mean that the planning balance (and in particular, when considered against the tests under section 38(6) Planning and Compulsory Purchase Act 2004) is weighted significantly in favour of the Development.

2. Introduction

2.1. This Planning Statement accompanies a full planning application submitted by Pegasus Group on behalf Exagen Development Limited ('The Applicant'), to Rushcliffe Borough Council (RBC) under provisions of the Town and Country Planning Act 1990 (as amended) for the construction, operation and subsequent decommissioning of a renewable energy park comprising ground mounted Solar PV with co-located battery energy storage at the point of connection, together with associated infrastructure, access and landscaping. The Development is located over two parcels of land to the west of the village of Wysall in Nottinghamshire and would be linked by an underground cable which will extend from the eastern side of the northern parcel before following the route of the highway along Bradmore Road – Keyworth Road – Main Street – Costock Road – Wysall Road (the Site).

2.2. The site measures approximately 100.96ha ha in total, split across the two site parcels and connection route. The Northern Parcel, measuring approximately 65 hectares (ha), comprises 8no. agricultural field enclosures associated with Lodge Farm, Wysall, approximately 200m West of Bradmore Road. The Parcel is bound to the north by a linear woodland, known as Old Wood. Meanwhile, the Southern Parcel, measuring approximately 33 hectares (ha), comprises a collection of 5 small to medium scaled agricultural fields that extend northwards from Wysall Road. The Southern Parcel is situated approximately 325m south of the Northern Parcel and the two are separated by a series of small agricultural fields. Both site parcels are currently in use as arable agricultural use and are graded as lower grade (Grade 3b or Grade 4) agricultural land.

2.3. The site is wholly located within the administrative boundary of Rushcliffe Borough Council and both site parcels are situated outside of any defined settlement boundary and are therefore deemed to lie within the open countryside for development management purposes.

2.4. The two site parcels will be connected by an underground cable which will follow the route of the existing highway, extending eastwards from the eastern boundary of the Northern Parcel before extending south along Bradmore road – Keyworth Road – Main Street and then south westwards along Costock Road – Wysall Road before joining the southern edge of the Southern Parcel.

2.5. A plan showing the extent of the Site (outlined red) is provided at Appendix 1 of this report which shows the route of the proposed connection. The total area of the cable connection measures approximately 3 ha and extends over approximately 3.4 km.

APPENDIX 1 – SITE LOCATION PLAN

2.6. This application seeks planning permission for the construction and operation of a ground mounted solar farm together with co-located BESS and associated infrastructure, including inverters, transformers, DNO substation, security cameras, perimeter fencing, access tracks, ground engineering works and landscaping.

2.7. Planning permission is sought for a temporary period of up to 40 years from the date of first exportation of electricity onto the electricity grid network for each element - Solar Farm and BESS.

2.8. Across the country there are significant delays to grid connections as a result of infrastructure improvements and upgrades required on the network to facilitate new

connections. This has resulted in many initial connection dates estimated by DNOs being pushed back as grid applications progress. As of May 2023, Ofgem reported that 40% of projects had been offered dates of 2030 or beyond[2]. Due to the threat of these impending delays which lie outside of the Applicant's control, should the Council be minded to approve the application, the Applicant would request the agreement of an extended permission implementation period.

2.9. The purpose of this Planning Statement is to set out the planning case for the Development and assess the proposals against the provisions of both local and national planning policy. The issues relevant to the assessment of the Development are set out in this Planning Statement. The subsequent sections of this Planning Statement are divided into: -

Section 3: Need for Development

2.10. The section summarises the key legislative background and support for standalone renewable energy schemes in the UK. The revised National Planning Policy Framework (NPPF) confirms that planning policies and decisions must also reflect relevant international obligations and statutory requirements and the documents are considered relevant to the determination of this application.

Section 4: The Site and Surrounding Area

2.11. This section contains a description of the Site and its environs.

Section 5: The Development

2.12. This section contains a description of the Development.

Section 6: Planning Policy and Material Considerations

2.13. The planning policy context for the Site includes both national policy guidance and the statutory Development Plan which includes the Rushcliffe Local Plan Part 1: Core Strategy (December 2014) and the Rushcliffe Local Plan Part 2: Land and Planning Policies (October 2019). Brief explanations of the key Policies pertaining to the Development are Contained within this section.

Section 8: Planning Assessment

2.14. This section outlines the planning matters that are considered to be important to the determination of the application. Considerations are addressed in turn and explained in the context of the relevant planning policy and the legislative background outlined in the previous section.

Section 9: Conclusions

2.15. This provides consideration of the overall planning balance and the concluding comments in relation to the application proposal.

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[2] https://www.ofgem.gov.uk/publications/ofgem-launches-policy-review-reforming-electricity-connections-system

Supporting Documentation

2.16. The application proposal is supported by the following documentation:

- Completed Application Form and Certificates;
- Planning Application Drawings and Elevations, including:
    - Existing Site Location Plan - DWG No. WLL02A-EXG-00-00-D-K011-P01;
    - Boundaries Plan – DWG No. WLL02A-EXG-00-00-D-K011-P01;
    - Proposed Layout - DWG No. WLL02A-EXG-04-00-D-K001-P0408;
    - Battery Unit Plan & Elevations - DWG No. WLL02A-EXG-05-ZZ-D-K001-P01;
    - MV Inverter Plan & Elevations - DWG No. WLL02A-EXG-05-ZZ-D-K002-P01;
    - Substation Building Plan & Elevations - DWG No. WLL02A-EXG-05-ZZ-D-K003-P01;
    - RMU & Control Enclosures Plan & Elevations- DWG No. WLL02A-EXG-05-ZZ-D-K005-P01;
    - Auxiliary Transformer Plan & Elevations - DWG No. WLL02A-EXG-05-ZZ-D-K006-P01;
    - Palisade Fence & Access Detail - DWG No. WLL02A-EXG-05-ZZ-D-K007-P01;
    - BESS CCTV & Lighting Detail - DWG No. WLL02A-EXG-05-ZZ-D-K008-P01;
    - 132kV Switchgear Plan & Elevation - DWG No. WLL02A-EXG-05-ZZ-D-K009-P02;
    - Solar Panel Detail - DWG No. WLL02A-EXG-05-ZZ-D-K010-P01;
    - Solar Fence & CCTV Detail - DWG No. WLL02A-EXG-05-ZZ-D-K011-P01;
    - 33kV Cable Connection and Control Room Plan & Elevations - DWG No. WLL02A-EXG-05-ZZ-D-K012-P01; and,
    - Typical 33kV Transformer Plan & Elevations – DWG No. WLL02A-EXG-05-ZZ-D-K013-P01.
- Covering Letter, prepared by Pegasus Group;
- Design and Access Statement, prepared by Pegasus Group;
- Planning Statement, prepared by Pegasus Group [this statement];
- Statement of Community Engagement, prepared by Exagen;

- Outline Battery Safety Management Plan, prepared by Exagen;
- Landscape and Visual Impact Assessment, prepared by Pegasus Group;
- Landscape Strategy, prepared by Pegasus Group;
- Arboricultural Impact Assessment, prepared by Barton Hyett;
- Agricultural Land Classification Report, prepared by Davis Mead Consultants;
- Transport Statement, prepared by Motion;
- Construction Traffic Management Plan, prepared by Motion;
- Heritage Statement (including archaeological desk based assessment and geophysical survey), prepared by Pegasus Group;
- Flood Risk Assessment & Surface Water Drainage Strategy, prepared by Pegasus Group;
- Noise Impact Assessment, prepared by Metrica Environmental Consulting; and,
- Ecological Impact Assessment (including Biodiversity Net Gain Assessment), prepared by Clarkson and Woods;
- Breeding Bird Survey Report, prepared by Clarkson and Woods; and
- Glint and Glare Assessment, prepared by Pager Power.

2.17. This document should be considered in conjunction with the planning application package, as listed above, in order to gain a complete understanding of the application proposal. The application documentation demonstrates the diligent approach adopted by the Applicant, and their experienced consultant team in delivering a well-considered proposal based on sound environmental and sustainable development considerations.

Regulatory Considerations

2.18. An Environmental Impact Assessment (EIA) Screening Opinion was requested from RBC on 19th May 2023. The EIA screening request was registered under reference 23/01010/SCREIA and the Council issued its Screening Opinion on 8th June 2023 confirming that the Council adjudged that the proposals did not comprise EIA development and accordingly an EIA is not required. The scope of the application proposal has not changed significantly since the council's EIA Screening Opinion was issued, if anything the area required for the development has been reduced to include a reduced development footprint. The development proposals have since been refined to incorporate a cable connection corridor which is proposed to follow the route of the Local Highway between the two site parcels; access improvements; temporary construction laydown area; substantial landscape mitigation; and, archaeological avoidance zones, following public consultation and environmental assessment. So whilst the overall planning application boundary may be marginally larger than the boundary submitted for the EIA Screening Request, the potential for significant environmental effects has been fully considered and mitigated.

2.19. Notwithstanding the above, it is requested that the Council re-screen the proposed development on receipt of the application in accordance with The Town and Country Planning (Environmental Impact Assessment) Regulations 2011 to ensure that the environmental information is adequate to assess the environmental effects of the development.

3. Need for Development

Local and National Commitments

3.1. There is a plethora of Government legislation, guidance and policy which support the transition to a low carbon future and the continued roll out of renewables and low carbon energy and associated infrastructure. The UK is part of an international effort to combat climate change. The UK is party to the United Nations Framework Convention on Climate Change (UNFCCC) and as such has signed up to international climate change obligations, such as the Kyoto Protocol and the Paris Agreement.

3.2. As part of its contributions to international efforts, the UK also has domestic legislation and policies in place to reduce greenhouse gas emissions. The Climate Change Act 2008 established long term statutory targets for the UK to achieve an 80% reduction in greenhouse gases by 2050 against a 1990 baseline.

3.3. In June 2019, the Government raised the UK's commitments in tackling climate change by legislating a net-zero gas emissions target for the economy by 2050. Decarbonising the power sector is integral to achieving this target and requires major investment into renewable technologies, such as solar power, which are supported by planning policy at both local and national levels.

3.4. To support a prosperous and rural economy, the diversification of agricultural and other land-based businesses is strongly supported by the Government. With the risk of shortfalls resulting from the loss of future subsidies, many farmers are looking to diversify to improve income and provide stability for the agricultural sector. Currently over 60% of farms now employ some form of diversification (according to the 2015/16 Farm Business Survey (FBS)) with diversification ventures ranging from simple building lets and farm shops, to installing solar panels for the generation of green energy. The diversification of agricultural land to provide renewable energy generation is a widely accepted form of agricultural diversification and is acknowledged to provide significant financial stability to existing farmsteads and rural businesses.

3.5. Furthermore, there is an explicit need for the deployment of solar farms and other renewable energy generation, which is driven by a plethora of government legislation at both a local and national level in the UK.

3.6. In June 2022, the High Court found that UK governments Net Zero Strategy breached the Climate Change Act 2008 because it didn't detail how emissions cuts would be achieved. The High Court ordered the Government to inform parliament by April 2023, of how specific policies would contribute towards reducing emissions. On 30 March 2023, the Energy Security Secretary published a host of documents which outlined ambitious plans to scale up affordable, clean, homegrown power and build a thriving green industry. *Powering Up Britain* (March 2023) presents overarching delivery plan which brings together the government targets for energy security, reducing household bills and maintaining its goal towards achieving net zero, including:-

- Accelerating deployment of renewables by quintupling solar power by 2035.

- Speeding up planning consenting process – alongside Powering Up Britain, the Government has published a revised set of energy national policy statements for consultation, covering overarching energy, renewables, electricity networks, gas generation, and pipelines. On 23 February 2023 the Government published its Nationally Significant Infrastructure Project (NSIP) Action Plan, which sets out how the government will reform the consenting process to ensure the planning system can deliver for the future, to meet the demands of a greater number and complexity of cases and deliver against government's ambitions.

- Through the Revised National Policy Statement for renewable energy (EN-3 (March), Government has committed to sustained growth in solar capacity to ensure that the UK maintains a pathway to meet net zero. EN-3 identifies how solar also has an important role in delivering the government's goal for greater energy independence. The British Energy Security Strategy states that government expects a five-fold increase in solar deployment by 3035. It sets out that government is supportive of solar that is co-located with other functions, such as storage, to maximise the efficiency of land use.

3.7. An Energy Policy Statement is provided at Appendix 2 of this report and should be read in conjunction with this Planning Statement. The statement provides a summary of the context of both local and national energy legislation and policies that set out the commitments the local and national government has made towards tackling climate change and demonstrates how the rapid deployment of renewable energy technologies across the UK, and solar technologies in particular, is key to achieving these targets.

APPENDIX 2 - ENERGY POLICY STATEMENT

3.8. At a local level Rushcliffe Borough Council (RBC) voted to declare a climate emergency in March 2020, committing the Council to becoming a carbon neutral organisation by 2030. RBC have since adopted a Climate Change Strategy (2021-2030) as of November 2021, and Carbon Management Plan (2020) which provides an exploration of the actions RBC will need to consider to meet its ambitions of becoming a net zero organisation by 2030 and to encourage residents and business within the Borough to also reduce their carbon emissions. The Council will use this to help inform the nature and extent of action and is a key element in planning the Council's response to the Climate Emergency declared in March 2020. Key to this, the delivery of renewable energy generation is highlighted as a key aim towards reducing carbon emissions both for the Council as an organisation and the wider Borough.

3.9. The Government's published British Energy Security Strategy (7th April 2022) explicitly highlights the urgent need for the UK to rapidly develop not only a decarbonised energy system but one that is more self-sufficient. This strategy provides a direct response by the Government to develop an energy system which is not so heavily reliant on imported oil and gas which has seen significant spikes in global cost and the overall cost of living following the impacts of the COVID-19 pandemic and Russia's invasion of Ukraine. As part of this strategy, the increased deployment of ground based solar development is identified by the Government to hold a key role in the realisation of these aims, with the government targeting a fivefold increase in the level of Solar PV development by 2035 (up to 70GW). In addition to the increased uptake of decentralised renewable energy, the Energy Security Strategy demonstrates the parallel need for improved grid flexibility and energy storage capacity and sets out that new appropriate policy will be developed to enable and encourage investment into sufficient, long duration electricity storage.

3.10. The targets set out within the Government's British Energy Security Strategy are reflected in the National Grid's annual Future Energy Scenarios Report (FES) (July 2023). The National Grid Future Energy Scenario (FES) report outlines how the energy system may need to transform to meet the target for net zero emissions by 2050. The FES illustrates four different, credible pathways for the future of energy between now and 2050: Falling Short; Customer Transformation; System Transformation; Leading the Way. Customer Transformation and System Transformation scenarios achieve net zero by 2050, with Leading the Way achieving it by 2046. The Falling Short Scenario doesn't get to Net Zero by 2050, diverging from carbon budgets around 2025, resulting in 179 Mt of residual annual emissions by 2050. The heat and road transport sectors are largely decarbonised by 2050 across all scenarios except Falling Short. However, even for the Net Zero scenarios, some sectors such as waste and aviation do not reach zero emissions by 2050, so the energy sector, particularly the power sector, must reach net negative emissions to balance this out.

3.11. Across all the four scenarios within National Grid's FES July 2023, the need for the rapid deployment of Solar PV generating development and increased energy storage capacity is emphasised. However, it is currently estimated that the targeted delivery of up to 70GW of Solar PV generation required under the British Energy Security Strategy by 2035, will only be met under two scenarios, with Leading the Way achieving this target by 2040 and Consumer Transformation achieving this target prior to 2050.

3.12. The Government targets and National Grid estimations set out above are further compounded by the National Infrastructure Commission publication 'Net-Zero Opportunities for the Power Sector, March 2020) which sets out key infrastructure requirements needed to meet the UK's 2050 net-zero target, including the amount of renewable energy development that would need to be deployed.

3.13. The NIC recommends that in meeting these targets, the UK's energy mix needs to be made up of around 90% renewables. At page 18 of the report, it is recommended that across all scenarios, significant levels of solar, onshore wind and offshore wind will need to be deployed with between 129 – 237 GW (gigawatts) of renewable energy capacity in operation by 2050. To achieve this, the report recommends the following split:

- 56-121 GW of solar;
- 18-27 GW of onshore wind; and
- 54-86 GW of offshore wind.

3.14. To achieve the above targets would require a significant increase in installed capacity across the UK, including over seven times the current installed capacity of solar technologies in the UK, which as of September 2023 is around 15.5GW according to the Department for Business, Energy & Industrial Strategy (BEIS)[3].

3.15. When considering the above figures and applying them to the number of local authorities across the UK, this would mean that there is an additional 105.5 GW of solar capacity required across the 382 local authorities across England, Scotland, Wales and Northern Ireland required to meet the NIC's upper figure for solar. A broad brush approach would be to equate

[3] https://www.gov.uk/government/statistics/solar-photovoltaics-deployment

this to an additional 276.2MW of solar capacity to be provided by each LPA across the UK. However, this approach would not account for the size of different administrative boundaries of local authorities or administrative boundaries which are heavily constrained by statutory designations, such as National Parks, AONBs or comprise wholly metropolitan area where it may be inappropriate to locate new Solar PV development. It is therefore evident that where appropriate developable space allows, some LPAs are likely to be required to deliver more Solar PV than this to make up for other more heavily constrained LPAs.

3.16. It is thus reasonable to surmise that every LPA, where appropriate developable land allows, should be delivering a significant amount of renewable energy capacity, considering a mixture of landscapes and terrain. In order to deliver the 70GW of solar power pledged by the government by 2035 it would require the consenting of 2 projects of the scale of Old Wood Energy Park every week, emphasising the excessive and immediate need for such projects.

Benefits of Solar Energy

3.17. One of the most sustainable forms of energy production worldwide is the production of solar electricity through the use of Solar PV arrays. Solar energy generation does not require fossil fuel use during generation and, although there is variability in the amount and timing of sunlight over the day, season and year, a properly sized and configured system can be designed to be highly reliable. In the case of the Development, the solar array would offset the annual electricity usage of approximately 17,500 homes and displace approximately 22,455 tonnes of CO_2 per year.

3.18. Solar power production also generates electricity with a limited impact on the environment as it is temporary and reversible, there is no need for extensive ground disturbing foundations, there are no tall vertical structures with limited moving parts involved and there is no significant noise associated with solar PV arrays during operation. There are opportunities for continued agricultural activities on the site in the form of sheep grazing whilst other areas within the Site can help deliver very significant biodiversity net gains, above the 10% requirement for all new Development under the soon to be implemented Environment Bill. Solar farm development typically does not result in the permanent loss of agricultural land and following cessation of use, the land can be returned to full agricultural use. Introducing a temporary (40-year) fallow period for the land also assists the rebalancing of soil nutrients, re-establishing soil biota, breaking crop pest and disease cycles, and provides a haven for wildlife thus enhancing the quality of land for future agricultural use following decommissioning.

Balancing the Network

3.19. Balancing the grid to ensure demand is met by supply is a key requirement which is becoming more challenging as intermittent generation, such as from renewable sources like solar power, becomes a bigger proportion of the overall energy mix.

3.20. The grid has a constant supply of 'extra power' available for use when the power required by customers is not equal to the power generated and a reserve supply is needed. The Balancing Mechanism is used to ensure that the network is in balance and reserve power is then used when the network comes under 'stress'.

3.21. When unforeseen demand is put on the network, such as when a large power station suddenly comes offline, then the National Grid control room needs an alternative source of power. This is achieved with rapid responding facilities such as the battery storage element of the Development, which can release or absorb electricity quickly from the grid as instructed.

3.22. On 26th November 2023, the Government published the UK Battery Strategy which sets out the Government's vision for the UK to achieve a globally competitive battery supply chain by 2030, that supports economic prosperity and the net zero transition. The report acknowledges that Batteries will play an essential role in our energy transition and our ability to successfully achieve net zero by 2050. In achieving this vision, the Government identify. The report highlights the important role that batteries, and BESS in particular have an important role to play in enabling the transition to net zero through allowing us to use electricity more flexibly and to decarbonise the energy system in a cost effective way.

3.23. As an innovative technology, the Development will provide a flexible and rapid release of electricity to allow the grid to regulate electricity supply and demand without any greenhouse gas emissions. Conversely, the Development will also have the capacity to absorb electricity quickly which will allow for the oversupply of the grid to be managed.

Summary

3.24. To meet the targets identified above, the UK is currently undergoing a rapid transformation in the way in which energy is generated with large scale, centralised fossil fuel and older nuclear power stations being phased out and smaller scale, decentralised renewable energy generation taking their place. Whilst renewable energy output is increasing across the UK, the overall demand for electricity is also increasing through the ongoing electrification of transport and heat sectors and an increasing uptake of plug-in hybrid and electric vehicles.

3.25. Whilst all of the above demonstrates a clear and substantial need for the rapid deployment of renewable energy developments, and the deployment of solar technologies in particular, both paragraph 163 of the NPPF and the Planning Practice Guidance confirms that planning applications for renewable and low carbon development are not required to demonstrate a need.

4. The Site and Surrounding Area

4.1. As detailed in paragraphs 2.1 and 2.2 above, the Site comprises two distinct land parcels located to the west of the settlement of Wysall, Nottingham, including a 'Northern Parcel' and 'Southern Parcel'. The two parcels are situated approximately 325m apart and are separated by a series of small agricultural fields.

4.2. The proposed Solar PV Arrays will be laid out over both site parcels, however the proposed battery storage compound and grid connection infrastructure will be positioned within the south of the Southern Parcel, in proximity to the Point of Connection (POC) into the existing 132kV overhead powerline which crosses the Southern Parcel of the Site. The two site parcels would be linked by an underground cable which would follow the route of the local highway between the two areas.

4.3. The site is wholly located within the administrative boundary of Rushcliffe Borough Council and both site parcels are situated outside of any defined settlement boundary and are therefore deemed to lie within the open countryside for development management purposes.

4.4. The two site parcels would be linked by an underground cable which will extend from the western side of the Northern Parcel before following the route of the highway along Bradmore Road – Keyworth Road – Main Street – Costock Road – Wysall Road and eventually extending northwards into the southern boundary of the Southern Parcel. A plan showing the full application boundary is included at Appendix 1 of this report.

4.5. The Northern Parcel is comprised of 8no. medium to large agricultural field enclosures extending to the west of Bradmore Road at Lodge Farm. A linear woodland, known as Old Wood, forms the northern edge to the Northern Parcel and cloaks a pronounced change in levels, marked by Bunny Hill, Rough Hill and Windmill Hill. The contours steeply slope to the north and indicate change from the elevated and undulating Nottinghamshire Wolds to the vale landscape associated with the River Trent, which lies further north.

4.6. The southern parcel includes 6 small to medium field enclosures and can be accessed from Wysall Road / Costock Road, which abuts it to the south. Wysall Road leads north east towards the settlement of Wysall. The village is separated from the site by various pastoral and arable fields with the settlement edge largely enclosed by mature hedgerow and tree vegetation.

4.7. Arable fields separate the two parcels of the Site and characterise the landscape to the west of it, with a number of woodland blocks compartmentalising the area. Rough Plantation, Wysall Rough Plantation, Long Rough Plantation, and Intake Wood abut the Site.

4.8. The Site's perimeter, in addition to the aforementioned highways, follows existing field boundaries delineated by hedgerows, blocks of woodland and tree belts. Boundary hedgerows associated with the Site are generally well maintained and approximately 1.5m to 2m in height, albeit there are sections, which are higher.

4.9. Topographically the Site forms part of the elevated Nottinghamshire Wolds and its complex outline terminates abruptly as a steep slope before descending into the broad valley of the River Trent, c. 8.5km to the north west. The north western corner of the Site, which abuts Old Wood, sits at approximately 88m AOD. The landform rises further west and culminates

at Bunny Hill, reaching approximately 92m AOD. This rising landform, coupled with Old Wood, encloses the Site and its immediate landscape to the north. The higher ground continues further west towards Rough Hill and Sharpley Hill, which collectively segregate the Site and landscape immediately around it. The Site's landform also rises towards Bradmore Road and Wysall to the east, which further collectively enclose the Site and separate it from the landscape further east and south east. Due to this undulating landform and presence of well managed and relatively tall hedgerows and blocks of woodland, which are characteristic of this landscape, reciprocal views towards and into the interior of the Site are limited or are relatively distant and interrupted by tree canopies.

4.10. There are various agricultural holdings with associated dwellings around the periphery of the Site to the south of Wysall Road and on Bradmore road to the east. Further residential properties are concentrated within the settlements of Wysall and Costock located c. 400m east and 1.5km west of the site respectively. The topography of the land, coupled with intervening vegetation, prevents any direct or unrestricted views between these settlements and the Site parcels.

4.11. Vehicular access to Northern Parcel of the site is currently achieved via the existing farm access track at Lodge Farm which extends westwards from Bradmore Road to the east of the Site. It is proposed that as part of the Development a new access track will be constructed slightly further south that will extend west from Bradmore Road parallel to the existing farm access through the field, retaining the existing access for continued farm and residential operation and avoiding impacts on footpath users as it is also a public right of way.

4.12. Vehicular access to the Southern Parcel of the site is currently achieved via an existing gated agricultural field entrance on Wysall Road on the southern boundary of the Parcel, from where an access track and bridge over the Kingston Brook provide means of access into the agricultural field parcels. The existing access and bridge will be appropriately upgraded to accommodate both construction and operational traffic associated with the Development.

4.13. From each of the site parcels, access to the A52 and subsequently the M1 motorway can be achieved to the north via the A60. For further details on the proposed access improvements and access strategy, please refer to the supporting Transport Statement (TS) and Construction Traffic Management Plan (CTMP). Further details on the proposed Construction Traffic Routing are discussed in the latter sections of this document.

Landscape

4.14. The Site is not covered by any national or local landscape designations and is not constrained by any landscape designations that relate to its value or scenic beauty.

4.15. There are no landscape features either within or immediately adjacent to either Site parcel which have any particular sensitivity that would inhibit the development of a well-designed solar farm and BESS. The Site is not situated within or near a designated National Landscape or National Park and has no potential to impact on such designations. In addition, the Site is not within a Countryside Protection Zone or any other locally protected landscape designation.

4.16. According to Natural England, the Site and study area fall within the National Character Area (NCA) 74 'Leicestershire and Nottinghamshire Wolds'. This national level assessment,

however, is considered too coarse and geographically too extensive to provide a detailed information that would be relevant to the Site and Development.

4.17. At a County level, the published Greater Nottingham Landscape Character Assessment identifies the Site to fall within the 'Nottinghamshire Wolds' Regional Character Area, and the eastern most part of Draft Policy Zone NW01 'Gotham and West Leake Wooded Hills and Scarps'. The landscape management strategy is to 'conserve'.

4.18. The key characteristic features of the Draft Policy Zone NW01 'Gotham and West Leake Wooded Hills and Scarps' are identified in the above Assessment as being:

- "Series of prominent individual hills with steep sometimes scarp slopes and broad plateaus.
- Hills are the dissected northern extent of a low boulder clay plateau extending from Leicestershire traditionally known as 'The Wolds'.
- Rural character although urban elements such as villages, power station, industry and quarrying are frequent in the landscape.
- Kingston Brook is a localised feature on low ground between hills characterised by riparian woodland and some grazing pasture at its margins.
- Land use is a mixture of woodland, arable and pasture. Arable is on the lower and more gentle slopes, pasture close to rivers, settlements and scarp grassland where the land is steeply sloping precluding machinery from working the land.
- Field pattern is mostly modern although pockets of older field systems such as irregular geometric and geometric and those reflecting open fields are present.
- Field pattern in places sweeps down the slopes and is a distinctive feature.
- Field boundaries are mostly hedgerows on the slopes with fences often present on higher ground.
- Woodland is generally on high ground across the hills although there are smaller pockets of woodland on lower ground as establishing scrub and along village fringes/areas of former quarry.
- Prominent extensive woodland plantation covers the slopes and high ground, often on steep scarps.
- Rides and areas of open land are interspersed between plantation woodland.
- Wooded tracks with spring flowering understorey planting along tracks up hills.
- Large commuter settlements such as Gotham and East Leake and smaller settlements such as West Leake are nestled at the base of the hills on the fringes of the DPZ.
- Infrequent individual farms within the character area often on the slopes or high ground. A row of individual modern houses is present along Ash Lane. One distinctive

red brick and pantile roof farmstead on Bunny Hill is set within gardens with a small orchard.

- Buildings are mostly red brick with older properties having red pantile roofs.
- Church towers and spires are prominent within a uniform village skyline.
- Overhead lines are prominent on low ground between hills.
- Small former spring (Wheldon Spring) on Gotham Hill is a localised feature characterised by a depression in the ground and establishing scrub.
- Enclosed channelled views on low ground between hills with extensive panoramic views across towards Nottingham City and beyond from high ground."

4.19. Draft Policy Zone NW01 'Gotham and West Leake Wooded Hills and Scarps' is described as,:

> *"A series of distinctive wooded hills with arable fields on lower and gentler slopes and pasture and pockets of grassland on the steeper slopes. Views are extensive and often over long distances from the high ground although become more enclosed from lower ground. Urban elements are frequent with views of Ratcliffe on Soar Power Station and the gypsum works. (…) Land use is a mix of plantation woodland, arable farming and pasture. Fields are mostly medium to large in size (…) Woodland comprises large geometric field sized blocks of both broadleaved and conifer woodland (…) Other vegetation includes smaller frequent copses at the base of slopes and around settlements. Frequent hedgerow trees and intact hedgerows are present across the area. (…) The landscape condition is GOOD. Hedgerows and woodland are well managed, although there is some evidence of field boundary fragmentation in places. Where hedgerows have been replaced, the timber fencing is usually in good condition. The agricultural land is well managed and features are intact with little sign of decline."*

4.20. The published Assessment goes on to state:

> *"This DPZ is a distinctive series of hills which are prominent within the surrounding area. They often form a backdrop to views from the southern edges of Nottingham. From high ground within the DPZ there are open expansive views to the centre of Nottingham and lower-lying farmland at Ruddington and Bunny. The strength of character is STRONG. The hills are distinctive and consistent features across the landscape and exert their influence within the surrounding area. The pattern of arable, pasture and woodland is also consistent with moderate sized villages and some expanding commuter villages present on low ground."*

Ecological Designations

4.21. There are no statutory international or national level environmental designations, as defined by the EIA regulations, located on the site or within a 3km radius of the site or with the potential to be impacted by the Development. The closest national or international level designation to the site comprises Rushcliffe Golf Course Site of Special Scientific Interest (SSSI) situated approximately 4.2km to the west of the site.

4.22. At a local level, the nearest statutory environmental designation to the Site comprises the Keyworth Meadow Local Nature Reserve (LNR), which lies approximately 1.6km to the north-east of the Site. The LNR comprises 1ha of flower-rich grassland, with additional wetland flora associated with the bordering brook. Ponds at the LNR support great crested newts. The next closest statutory designated site is the Rushcliffe Country Park LNR located approximately 3.5km to the north.

4.23. In terms of local non-statutory designations, there are a total of 8 Sites of Importance for Nature Conservation (SINCs) identified to lie within 2km of the Site. Bunny Old Wood SINC is the closest non-statutory site, immediately adjacent to the northern boundary of the northern parcel. This is an ancient broadleaved woodland, dominated by ash, with pedunculate oak and wych elm, a dense understorey and ground flora including sanicle, wood-sedge and bluebell. The wood is of importance to butterflies, including white-letter hairstreak.

4.24. An Extended Phase 1 Habitat Survey has been completed which covered the Site and adjoining areas where access permitted. The findings of the Phase 1 Habitat surveys are discussed in detail within Section 7 of this statement and in the accompanying Ecological Impact Assessment.

4.25. The Development provides opportunities to enhance green infrastructure and provide a biodiversity net gain (BNG) through the provision of new hedgerows, trees and woodland, the retention of field margins, and creation of wildflower meadow and wet meadow grassland habitats. It will also enable the fields to rest and recover from continuous intensive farming of marginal/low grade agricultural land.

Hydrology

4.26. The southern most field within the southern site parcel is crossed from east to west by the Kingston Brook, a tributary of the River Soar. There are also several drainage ditches and ponds both within and in close proximity to both site parcels.

4.27. The majority of the Site comprises land classed as Flood Zone 1, an area least at risk of flooding. However, there is a small portion of the Site in the southern extent of the southern site parcel which is identified to fall within Flood Zone 2 and 3 which aligns with the Kingston Brook which crosses the southern extent of the Site. All development infrastructure would be located outside of this with the exception of any upgraded works to the crossing of the brook.

4.28. The Risk of Flooding from Surface Water (RoFSW) dataset shows large areas of the site are not predicted to be impacted by a 1 in 1,000 year rainfall event and are at Very Low risk of surface water flooding. However, the dataset also highlights that there are small localised areas of High to Low risk, impacted by a 1 in 30 and 1 in 1,000 year rainfall event, respectively, throughout the site.

4.29. As the Site area is greater than 1ha in size, and with the Development being partly in Flood Zone 3, the Applicant has commissioned a detailed Flood Risk Assessment and Surface Water Drainage Strategy to inform the design of the Development which is discussed in greater detail in Section 7 of this statement and in the accompanying Flood Risk Assessment and Surface Water Drainage Strategy report.

Heritage Assets & Archaeology

Designated Heritage Features

4.30. There are no Listed Buildings or other designated heritage assets within or in the immediate vicinity of the Site.

4.31. The north-western extent of the Wysall Conservation Area lies c. 215m to the south-east of the northern parcel and the south-western extent of the Conservation Area lies c. 295m east of the southern parcel. The Conservation Area contains one Grade I Listed Building (the Church of Holy Trinity c. 510m east of the southern parcel (1259980)) and four Grade II Listed Buildings.

4.32. The Grade II Listed Highfields (Holy Cross Convent) lies c. 435m west of the northern parcel and 670m west of the southern parcel.

4.33. Thorpe in the Glebe medieval settlement, including church site and open field system, a scheduled monument, lies approximately 1.3km to the south east of the southern site parcel.

Archaeology

4.34. A detailed Heritage Statement has been prepared to assess any potential impacts on the setting and character of the above identified heritage assets in addition to any potential archaeological features within the site and surrounding area. The detailed findings of the Archaeological Desk Based Assessment are set out within Section 7 of this Statement.

4.35. The Heritage Statement has been informed by a Geophysical Magnetometry Survey undertaken across the site to determine the likely presence of any below ground archaeological features. The results of the geophysical survey identified that whilst the majority of the site has a low potential to contain significant archaeological features, the survey does identify a number of anomalies that were consistent with a likely archaeological origin. The identified anomalies within the Northern Parcel have been interpreted as a potential multiphase settlement within the south eastern extent of the parcel, rectilinear agricultural enclosures and possible industrial activity. Within the Southern Parcel of the site, several weakly positive curvilinear anomalies were identified which form a small rectilinear enclosure with rounded corners. Although of uncertain date, the nature of these anomalies are similarly indicative of features of possible prehistoric to Roman date. The morphology of the identified anomalies suggest a multiphase landscape usage which is Romano-British in origin, with associated discrete anomalies and smaller divisions possibly indicating further settlement. The proposed development has been appropriately designed to avoid these identified areas of high archaeological potential.

4.36. The full findings of the Heritage Statement and supporting Geophysical Survey are discussed in greater detail in the below sections of this report.

Agricultural Land

4.37. With regard to agricultural land classification (ALC), National policy requires development on agricultural land to steer towards areas of poorer quality agricultural land, where this is available, except where this would be inconsistent with other policy and sustainability considerations.

4.38. The Natural England Agricultural Land Classification Map highlights that the Site is wholly characterised by undifferentiated Grade 3 (good to moderate quality) land. The Applicant has commissioned a site-specific Agricultural Land Classification Survey and Report that is submitted as part of this application and identifies that the Site is wholly made up of Grade 3b (moderate) or Grade 4 (poor quality) agricultural land.

4.39. The National Planning Policy Framework states that where "significant development" of agricultural land is demonstrated to be necessary, local planning authorities should seek to use areas of poorer quality land in preference to that of higher quality land. Importantly, paragraph 181 does not seek to preclude the development of such land. The Framework does not provide a definition of what can be construed as significant development of agricultural land. However, under Schedule 4(y) of The Town and Country Planning (Development Management Procedure) (England) Order 2015, LPA's are only required to consult with Natural England on development proposals which are not for agricultural purposes and not in accordance with the provisions of a development plan and involves loss of more than 20 hectares of best and most versatile agricultural land. It is logical to conclude, therefore, that the temporary loss of an area of best and most versatile land which is significantly less than 20 ha is unlikely to be considered "significant" in context with policy guidance set out in the NPPF. This position is underpinned in a number of appeal decisions.

4.40. In accordance with NPPF the Development will not result in the permanent loss of any BMV land, and any loss will only be temporary and so overall is not considered to result in a significant impact on BMV agricultural land. Furthermore, there is the potential for agricultural land use to continue in conjunction with the Development once it is operational, in the form of sheep grazing amongst the solar panels, as well as the land contributing significantly to biodiversity enhancement alongside the solar farm, which can have wider benefits to crop yields on surrounding agricultural fields.

4.41. The Development would be for a temporary period for up to 40 years after which the site will be restored to its former state to continue agricultural use, therefore there will be no permanent loss of agricultural land as a result of the Development. Introducing a 40-year fallow period for the land will also assist the rebalancing of soil nutrients, re-establishing soil biota, breaking crop pest and disease cycles, and provide a haven for wildlife thus enhancing the quality of land for future agricultural use following the decommissioning of the solar farm.

Public Rights of Way (PRoW)

4.42. In terms of public access, there are a number of Public Rights of Way (PRoWs) that cross or abut the Northern parcel and there are a number in the surrounding landscape. The PRoWs that are identified to be of greatest importance with regards to potential visual effects arising from the Development include:

- Midshires Way (National Trail), extends through the northern parcel and between the Site and Wysall and along Bradmore Road;

- Public Footpath between Bradmore Road and the Site's northern parcel, via Lodge Farm; and,
- Public Footpath to the south of Wysall Road, between Rempstone Lane and Wysall's western settlement edge.

4.43. Further details on the network of public footpaths within and beyond the confines of the Site, are provided in the Transport Statement (TS) and Landscape and Visual Impact Assessment (LVIA) and the locations are shown on the Landscape Strategy Plan.

4.44. Crucially, the Development will retain all rights of way. The TS and CTMP explain how those PRoW which may be directly impacted will be controlled through management, during the short term construction process. The Landscape Strategy shows how the rights of way have been considered in the design with significant setbacks to infrastructure and sympathetic planting.

Residential Receptors

4.45. As set out above, the immediate area surrounding the site is predominantly characterised by open agricultural fields with dispersed clusters of agricultural buildings and associated farmsteads. Other surrounding residential uses are typically concentrated in the settlements of Wysall, to the east of the site, or Costock to the west. Other isolated residential properties can be identified scattered throughout the wider countryside surrounding the site.

4.46. There are a number of residential properties that either adjoin the site or lie in proximity to it. A summary of the nearest relevant residential receptors to each site parcel is provided below.

Northern Parcel

4.47. With regards to the visual context of the norther site parcel and potential surrounding visual receptors, there are a number of residential properties within close proximity of the parcel. These include:

- Field View, Lodge Farm, Bradmore Road, Wysall - associated with Lodge Farm adjoining the western boundary of the northern site parcel;
- The Elms, Bradmore Road, Wysall - c. 150m east of the northern parcel and north of Lodge Farm;
- The Old Vicarage, Bradmore Road, Wysall - c. 400m east of the northern parcel on east side of Bradmore Road;
- Lorne House, Bradmore Road, Wysall - c. 250m east of the northern parcel on east side of Bradmore Road;
- Properties at NW edge of Wysall, Keyworth Road, Wysall - c. 550m south east of the northern parcel;
- Holy Cross Convent, Bunny Hill, Costock - c. 400m south west of the northern parcel; and,

- Properties on Bunny Hill, Costock - c. 1km west of the northern parcel.

Southern Parcel

4.48. In terms of potential residential receptors in proximity to the Southern Parcel, the OS Explorer map identifies the following in the vicinity:

- Elm Lodge, Costock Road, Wysall - c. 200m south east of southern parcel on north side of Costock Road;
- Five Oaks Stables, Rempstone Lane - c. 200m south of southern parcel on west side of Rempstone Lane;
- Scotland Hill Farm, Wysall Road - c. 150m south of southern parcel on south side of Wysall Road;
- Nouvelle Farm, Wysall Road - c. 350m south west of the southern parcel on south side of Wysall Road;
- Westview, Wysall Road - c 400m south west of the southern parcel on south side of Wysall Road;
- The Oaklands, Costock Road - c. 580m south east of the southern parcel, south east of Costock Road; and,
- Properties at SW edge of Wysall, Costock Road, c. 250m east of southern parcel.

4.49. Whilst there are a number of isolated properties in the immediate vicinity of the Site, as identified above, many benefit from existing screening/intervening vegetation and or landform, which would limit visual impact of the Development. A detailed Landscape and Visual Impact Assessment (LVIA) has been prepared to assess the overall impact of the Development on the visual amenity of surrounding residential receptors. The findings of the LVIA have directly informed the final design and layout of the solar farm as well as a detailed Landscape Planting and Mitigation Strategy whereby additional landscape planting is proposed to mitigate any visual impacts on the surrounding residential receptors. Full details regarding the findings of the LVIA and the proposed Landscape Strategy are set out within the later sections of this Statement and in the accompanying LVIA.

Mineral Safeguarding Areas

4.50. The site is identified to fall within a Mineral Safeguarding Area for Tutbury Gypsum. Given the temporary and reversible nature of the Development, no adverse impacts on the future ability to extract the mineral resource are expected.

4.51. Not withstanding the above, the gypsum resource is identified to be at such a depth that the resource can be mined by underground, 'room and pillar' methods, even with the development in place without affecting the development.

Planning History

On-site Applications

4.52. A review of RBC's online planning records identifies the following planning history for the Site:

- 16/01432/CMA - British Gypsum Works Gotham Road East Leake Nottinghamshire LE12 6JX | Vary condition 2 of planning permission 00/01321/CMA to extend operation of mine until 22 February 2042 | No Objection 15th Jul 2016

- 16/01430/CMA - British Gypsum Works Gotham Road East Leake Nottinghamshire LE12 6JX | Periodic review of mineral permissions pursuant to Section 96 of Environment Act 1995 | No Objection 15 Jul 2016

- 98/01279/CMA - Land From Gotham To East Leake South Of Borough East Leake | Determination of conditions on planning permissions:- S/19/2, S/9/1, S/21/56, S/24/2, S/21/5, S/19/595, G1/83/D/1153, 21/82/D/158, 75/D/532, S/21/2, S/21/3, S/18/179, J1/78/D/464 and S/18/276 |

4.53. The planning history outlined above is reflective of the site's status as being safeguarded for future mineral (gypsum) extraction.

Off-site Applications

4.54. In addition to the above planning history associated with the site, there is an extensive number of historic planning applications for the land surrounding the site, however, these largely comprise householder applications or applications for mixed use development for residential, agricultural and other similar uses in the surrounding area.

4.55. Notwithstanding the above, there are a number of historic applications both within the immediate vicinity and wider surrounds of the site that are identified to be particularly relevant to the Development. A review of the RBC online planning application databases and aerial mapping identified the follow proposed, approved or operational solar farms or similar development within 5km of the site, with the potential for cumulative effects:

- 23/00254/FUL - Land At Fields Farm Asher Lane Ruddington Nottingham | Installation of a Renewable energy Park comprising: ground mounted solar panels; access tracks; inverters, transformers; substation and battery energy storage system; customer cabin; underground cables and conduits; perimeter fence; CCTV equipment; temporary construction compound; and associated infrastructure and planting scheme. | Approved 02 Oct 2023

- 22/00319/FUL - Land To The West Of Wood Lane And Stocking Lane Kingston Estate Gotham Nottinghamshire NG11 0LF | Installation of renewable energy generating solar farm comprising ground-mounted photovoltaic solar arrays, together with substation, inverter stations, security measures, site access, internal access tracks and other ancillary infrastructure, including landscaping and biodiversity enhancements | Refused 13 Mar 2023

- 22/00303/FUL - Land To North East Of Highfields Farm Bunny Hill Costock Nottinghamshire | Construction of a solar farm and battery stations together with all

associated works, equipment and necessary infrastructure, together with the formation of a new vehicular access onto Bunny Hill (A60) | Approved 16 Feb 2023

- 21/00703/FUL - OS Field 8561 Rear Of Rushcliffe Grove East Leake Nottinghamshire | Installation and operation of a solar farm together with all associated works, equipment and necessary infrastructure. | Approved 02 Dec 2021

4.56. Planning permission 22/00303/FUL was granted, subject to conditions, on 16th Feb 2023, for the construction and operation of a solar farm and ancillary battery facility on land to the North East of Highfield Farm, Bunny Hill, Costock. The land subject to this planning permission is situated immediately adjacent to the west of the site, directly adjacent the western boundaries of both the northern and southern parcels of the site, and also lies within the Green Belt. Given the immediate proximity of the of the adjoining planning consent, the supporting LVIA has been informed by a detailed cumulative impact assessment which takes the neighbouring approval (and nearby approved schemes listed above) into consideration to determine the extent of any potential cumulative landscape and/or visual effects arising as part of the Development. The detailed findings of the cumulative assessment are set out within the supporting LVIA and are discussed in greater detail in the latter sections of this report.

4.57. In addition to the above, it is noted that an EIA Screening Report was submitted to the Council in June 2023 for a proposed 49.9 MW cumulative solar scheme at Land To The East And South-East Of Costock, Rushcliffe (alternative address: Field Farm, Wysall Road, Costock, Nottinghamshire, LE12 6XQ). Based on the submitted documents it appears that the access is being proposed off Rempstone Lane to the south of the Site. This scheme, given its current status, is unlikely to come forward before the determination of the proposed Development. For that reason it is envisaged that the subsequent application, associated with this cumulative development, would consider the proposed development as part of their cumulative assessment as and when an application is submitted.

4.58. This scheme, given its current status is unlikely to come forward before the determination of the proposed development. For that reason, it is not considered any further in this LVIA.

BEIS Renewable Planning Energy Database (October 2023)

4.59. A review of the Department for Business, Energy and Industrial Strategy (BEIS) Renewable Energy Planning Database (REPD) (October 2023) identifies that Rushcliffe Borough Council have a long history of permitting development proposals for renewable energy infrastructure with a number of large-scale schemes recently permitted in the last year, as identified in the planning history set out above. Notwithstanding the recent permissions, there is currently only 41.5MW of operational renewable energy generation within the borough, demonstrating there is still an urgent need for the rapid deployment of renewable energy generating development.

4.60. An extract of the BEIS Renewable Planning Energy Database (October 2023) is provided below.

Site Name	Tech Type	Installed Capacity (MW)	Application Ref	Status
Lodge Farm - Orston	Solar Photovoltaics	12.40	13/01609/FUL	Operational
Cotgrave solar farm	Solar Photovoltaics	4.90	14/01221/FUL	Operational
Radcliffe Solar Farm	Solar Photovoltaics	4.20	14/01228/FUL	Operational
Langar Lane	Solar Photovoltaics	10.00	14/01594/FUL	Operational
Barn Farm (Stanford On Soar)	Solar Photovoltaics	30.00	14/01589/FUL	Appeal Refused
Elton solar farm	Solar Photovoltaics	5.00	14/01739/FUL	Operational
Land Off Mill Lane	Solar Photovoltaics	1.90	15/00972/FUL	Planning Permission Expired
Stragglethorpe Road farm	Solar Photovoltaics	5.00	15/01776/FUL	Operational
Holme Farm Solar Park	Solar Photovoltaics	4.20	15/01971/FUL	Revised
Cotgrave Solar Farm Battery	Battery	1.00	15/02835/FUL	Abandoned
Kegworth Deep Lock	Small Hydro	1.00	19/00232/LBC	Abandoned
British Geological, Keywork Solar Panels	Solar Photovoltaics	0.62	20/02647/PA14J	Under Construction
Sharpley Hill Solar Farm	Solar Photovoltaics	4.20	21/00703/FUL	Planning Permission Granted
Kingston Solar farm	Solar Photovoltaics	49.90	22/00319/FUL	Planning Permission Refused
Church Farm, Kingston On Soar - Solar Photovoltaic Farm	Solar Photovoltaics	49.90	22/00809/FUL	Planning Permission Granted
Highfields Farm - Solar Farm & Battery Storage	Solar Photovoltaics	42.90	22/00303/FUL	Planning Permission Granted

Site Name	Tech Type	Installed Capacity (MW)	Application Ref	Status
New Lane, Whatton - Solar Photovoltaic System	Solar Photovoltaics	0.25	21/02716/CLUPRD	Revised
Fair Oaks Renewable Energy Park - Solar farm & Battery energy storage	Solar Photovoltaics	49.90	23/00254/FUL	Planning Permission Granted
Fair Oaks Renewable Energy Park - Solar farm & Battery energy storage	Battery	49.90	23/00254/FUL	Planning Permission Granted
New Lane, Whatton - Solar Photovoltaic System	Solar Photovoltaics	0.25	21/03114/FUL	Planning Permission Granted
Highfields Farm - Solar Farm & Battery Storage	Battery	8.00	22/00303/FUL	Planning Permission Granted
Gotham - Battery Energy storage	Battery	100.00	22/01832/FUL	Planning Permission Refused
Longhedge Solar Farm	Solar Photovoltaics	49.90	22/02241/FUL	Planning Permission Refused
Frontier Agriculture, Ruddington - Solar PV	Solar Photovoltaics	0.45	22/01031/PA14J	Planning Permission Granted
Smite Lane Farm, Thoroton - Solar Panels	Solar Photovoltaics	0.20	22/01480/PA14J	Planning Permission Granted
Langer Airfield Industrial Estate, Harby Road - Biomass Boiler	Biomass (dedicated)	0.50	22/01688/FUL	Revised
Radcliffe Road, Holme Pierrepont - Solar Farm	Solar Photovoltaics	4.20	22/01511/FUL	Planning Permission Granted
West Leake Lane, Ratcliffe - Battery Storage	Battery	600.00	"23/01285/FUL	Planning Application Submitted
Langer Airfield Industrial Estate, Harby Road - Biomass Boiler	Biomass (dedicated)	0.60	"	Planning Permission Granted
Wells Agriculture Barn Farm, Flawforth Lane - Solar PV System	Solar Photovoltaics	0.32	22/02141/FUL	Planning Permission Granted
Ideagen, Mere Way - Solar Panels	Solar Photovoltaics	0.15	23/00019/PA14J	Planning Permission Granted

Site Name	Tech Type	Installed Capacity (MW)	Application Ref	Status
Ratcliffe On Soar Power Station - Solar Farm	Solar Photovoltaics	9.00	23/00829/PA14J	Planning Permission Granted
Fairham Business Park, Foresters Avenue - Roof Mounted Solar Panels	Solar Photovoltaics	0.36	22/01339/LDO	Planning Application Submitted

5. Development Proposals

5.1. The Development is for the construction, operation, maintenance and decommissioning of a renewable energy park comprising ground mounted Solar PV with co-located Battery Energy Storage System (BESS) at the point of connection, together with associated infrastructure, access and landscaping. As set out earlier in this statement, the Development is split across two separate land parcels, a 'Northern' and 'Southern' parcel, located to the west of the village of Wysall.

5.2. The main element of the Development comprises the construction and operation of a solar farm with an export capacity of up to 49.9 MW. The solar farm will be split across the two site parcels together with associated infrastructure including inverter units, deer fencing, access tracks, CCTV and cable infrastructure.

5.3. The solar farm will be connected to the grid via a new DNO substation and transformer in the Southern Parcel. The connection is into the existing 132kV overhead electricity line which extends east to west across the southern part of the Southern Parcel. Adjacent to the new DNO substation will be a BESS facility with a capacity of approximately 85 MW.

5.4. The two site parcels will be linked by an underground cable which will extend from the eastern side of the northern parcel before following the route of the highway along Bradmore Road – Keyworth Road – Main Street – Costock Road – Wysall Road and eventually extending northwards into the southern boundary of the Southern Parcel.

5.5. A temporary operational lifespan of up to 40 years is sought for each element of the Development (the solar farm and the BESS).

Design Flexibility

5.6. The Development has employed a 'maximum design scenario' approach which reflects the Rochdale Envelope approach. The Rochdale Envelope provides a 'maximum design' scenario approach to the impact of a project and allows for a broad definition of the project to be framed within a number of set parameters. This approach allows for a project to be assessed on the basis of maximum project design parameters in order to provide flexibility, while ensuring all potentially significant effects (positive or adverse) are assessed within the planning application.

5.7. Construction work on the Development, assuming planning permission is granted, would not commence until a final investment decision has been made by the Applicant and a contractor appointed. Following the award of the contract, the appointed contractor would carry out a number of detailed studies to inform the technology selection for the solar farm and BESS and also to optimise its layout and design before starting work.

5.8. Given the rapidly evolving nature of solar and battery energy storage technology, it is possible that a new more energy and spatially efficient technology may be available to the Applicant by the time the Applicant looks to construct the project which may have a reduced overall impact on the Site and its surroundings.

5.9. It follows that it has not been possible for the Applicant to fix all of the design details at this stage. The Applicant has therefore sought to incorporate sufficient design flexibility. This

relates to the dimensions and layout of structures forming part of the Development, including the precise layout of the infrastructure and the maximum height of the solar panels.

5.10. The Applicant's approach to this planning application has been to assess the maximum (and where relevant, minimum) parameters for the elements where flexibility is required. For example, the heights of the solar panels have been assessed for the purposes of landscape and visual impact as being maximum of 3.1m high, which is the worst-case. It is possible that the panels could be lower.

5.11. The RoFSW dataset generally predicts surface water flood depths on site to remain shallow during a 1 in 1,000 year rainfall event. The flood depths generally range between 150-300mm. However small localised areas are identified to be at high risk to surface water flooding, with maximum surface water flood depths modelled at 900-1200mm, typically situated alongside watercourses, with greatest depths in the south of the Northern Parcel. All proposed solar panels will be raised so that the lowest edge is above the predicted surface water flood depths, allowing surface water to flow freely beneath.

5.12. Therefore, should the Council be minded to approve the application, it is requested that a suitably worded planning condition(s) should be implemented on any permission to secure the submission and approval of the final detailed design in advance of construction commencing on site.

Main Components

5.13. The Development includes the following equipment across the two separate land Parcels:

Northern Parcel:

- Arrays of solar PV panels, approximately 2/3 of the solar farm;
- Approx. 17no. MV Central Inverter Units;
- Solar Connection Infrastructure Compound;
- Permeable 4m wide access track and vehicle parking;
- Up to 2.5m high timber post and wire mesh deer fence around the solar panel areas;
- Pole mounted CCTV cameras up to a height of 4m within the Solar Farm;
- Extensive landscape planting comprising species rich grassland, areas of wildflower and wet grassland meadow, hedgerows, trees and woodland.

Southern Parcel:

- Arrays of Solar Panels, approximately 1/3 of the solar farm;
- Approx. 8no. MV Central Inverter Units;
- Solar Connection Infrastructure Compound;
- Approx. 70no. containerised battery energy storage units;

- Approx. 35no. containerised battery inverter units;
- Approx. 4no. auxiliary transformers;
- Customer substation and switchgear buildings;
- 132kV DNO substation compound with transformer and control room;
- Permeable 4m wide access track and vehicle parking;
- Up to 2.5m high timber post and wire mesh deer fence around the solar panel areas;
- Up to 2.4m high palisade security fencing for Substation and BESS enclosures;
- Pole mounted CCTV cameras up to a height of 4m within the solar enclosures and up to 4m within the DNO substation and BESS compounds;
- Extensive landscape planting comprising species rich grassland, areas of wildflower grassland meadow, trees and woodland.

Solar Panels

5.14. The solar panels will be laid out in rows running from east to west across the field enclosures. Panel spacing would typically be 3.5m but could vary between 2.5m and 6.5m depending on topography and aspect. The panels will be mounted on a frame which would typically be piled or screwed into the ground to a depth of approximately 1-2m. Panel mounting structure design can vary depending on wind loading and ground conditions, to be confirmed following detailed design and prior to construction.

5.15. The proposed solar panels are typically mounted in portrait orientation in rows of two, with one row directly fixed above the other.

5.16. Depending on the final panel dimensions and tilt angle, the panels could be mounted as low as 0.7m from the ground at the lowest point rising to approximately 3.1m at the highest point. Typically, based on a panel angle of 25 degrees the lowest part of the panel would be at a maximum of 0.8m from the ground rising to 3.1m at the highest point. In the areas of greatest surface water flood depth the worst case height of the solar panels above ground will be 1.5 m (allowing 1.2m of flood depth and 0.3 m freeboard) extending to up to 4.6 m at the top end of the panel depending on panel tilt angle, however, in most instances panel heights in these areas will not exceed 3.8m (based on a panel angle of 20 degrees). Such locations would be topographically lower and so the top edge of the panel would be similar to areas where panels don't need to be raised.

5.17. The Solar PV modules will convert solar irradiance into direct current (DC) electricity. A Solar PV module consists of a layer of silicon cells, an anodised aluminium frame, a glass casing, and various wiring to allow current to flow from the silicon cells. Silicon is a non-metal with conductive properties that allow it to absorb and convert sunlight into electricity. When light interacts with a silicon cell, it causes electrons to be set in motion, which initiates a flow of electric current.

5.18. The insulated DC cables from the solar modules will be routed in channels fixed on the underside of the framework. The DC string cables will run along the entire underside of each

row. The electrical cabling from each array will be concealed through shallow trenches linking the modules to the centralised inverter cabins and then to the connection infrastructure compounds before joining the DNO substation in the Southern parcel via the customer switchgear.

5.19. Indicative dimensions of the proposed panels and frame are shown on the PV detail provided within the submitted application drawings (DWG no. WLL02A-EXG-05-ZZ-D-K010-P01) that forms part of the planning application submission.

Containerised Battery Energy Storage Units

5.20. Approximately 70 containerised battery units will be located within the proposed BESS Compound in the Southern Parcel of the Site.

5.21. The current scheme design is based on a Lithium based battery technology which is the basis for all manufacturers. However, as set out above, this is not to say that by the time the developer comes to construct the scheme ahead of their connection date that a more efficient technology may become available. The proposed indicative layout is therefore based on the largest battery technology available at this time to demonstrate the assessment of a maximum design scenario. As more efficient technology becomes available it is possible that the footprint of the BESS and size of the required equipment may reduce from that currently proposed.

5.22. Each battery unit is made up of a number of battery racks which have their own battery management system and interfaces with a centralised control management system. Each battery unit is fitted with thermoregulating air conditioning, as well and specialist fire detection and suppression systems.

5.23. As shown on the Battery Container Plan and Elevations Drawing submitted with this application (DWG No. WLL02A-EXG-05-ZZ-D-K001-P01), the containerised batteries measure 6.058m long by 2.438m wide and 2.896m tall. Each battery unit will be sited atop a 0.2m concrete plinth foundation.

5.24. The current proposed battery units would have the appearance of standard shipping containers and have a height of approximately 3m. It is proposed that each containerised unit be painted dark green (or another colour agreeable with the Council) to help assimilate the Development with its surroundings and limit the visual impact of the scheme.

5.25. The batteries will be available to charge energy and discharge energy directly from the existing 132kV electricity line which runs from east to west across the Southern Parcel.

MV & BESS Inverter Units

5.26. Approximately 25no. MV Central Inverter Units will be distributed across the solar farm and approximately 35no. Containerised Battery Inverter units located within the proposed BESS compound within the Southern Parcel of the Site.

5.27. Similar to the proposed battery units, both the MV Central Inverters and BESS Inverters will have the appearance of a standard shipping container, measuring 6.058m long by 2.438m wide and 2.896m tall. It is also proposed that each inverter would be painted dark green (or another colour agreeable with the Council) to similarly limit the visual impact of the Development. The dimensions and appearance of the proposed MV Inverters are shown in

detail on the MV Inverter Unit Plan and Elevations Drawing submitted with the application (DWG. No. WLLO2A-EXG-O5-ZZ-D-KOO2-PO1).

5.28. The role of the proposed Inverters is to convert the direct current (DC) that is exported by the batteries when discharging and the Solar PV arrays into alternating current (AC) and vice versa when the batteries are charging. The MV Inverters within the solar farm will in turn connect into the proposed Customer Substation and HV Switchgear before exporting directly to the 132kV distribution grid via the proposed DNO substation in the Southern Parcel.

Customer Substation and HV Switchgear

5.29. The proposed Customer Substation/HV Switchgear buildings will be fed directly from the MV inverters within the solar farm and the battery compound within the Southern Parcel. The proposed Substation/HV Switchgear buildings would be rectangular single-story buildings of brick construction. The proposed buildings will be positioned within the BESS and substation compound within the southern parcel of the site and will measure 15 m long by 5 m wide and 4.1 m high. The buildings will be of simple rectangular form with a single aspect roof and openings featuring on the front and side elevations of the building. The dimensions and appearance of the proposed Substation/HV Switchgear buildings are shown in detail on the Substation Building Elevations Drawing submitted with the application (DWG. No. WLLO2A-EXG-O5-ZZ-D-KOO3-PO1).

5.30. When exporting the proposed Substation and HV switchgear buildings will feed into the 132kV DNO substation transformers before being exported to the distribution grid.

Solar Control Room and Cable Connection Building

5.31. A 33kV transformer will positioned within the solar connection infrastructure compounds within each site parcel which will step up the voltage from the solar farm to allow transmission in the buried cable between the solar enclosures and the main 132 kV substation in the Southern Parcel. The 33kV transformers will measure approximately 5m long by 4.5m wide and 3.9m high. The dimensions and appearance of the proposed 33kV Transformers are shown in detail on the Typical 33kV Transformer details submitted with the application (DWG. No. WLLO2A-EXG-O5-ZZ-D-KO13-PO1).

5.32. The transformers will be co-located with a 33kV Control Room and Cable Connection Building within each connection infrastructure compound. The Control Room and Cable Connection building will measure 15m long by 5m wide and 4.3m high. Similarly to the Substation/HV Switchgear Building, the building will be of simple rectangular form with a single aspect roof and openings featuring on the front and side elevations of the building. The dimensions and appearance of the proposed 33kV Transformers are shown in detail on the 33kV Cable Connection and Control Room Plans and Elevations submitted with the application (DWG. No. WLLO2A-EXG-O5-ZZ-D-KO12-PO1).

132kV DNO Transformer

5.33. One new 132kV transformer will be required to facilitate the connection to the grid. The DNO substation compound is proposed within the southern extent of the Site's Southern Parcel near to the proposed point of connection to the 132kV distribution line which crosses the Site. The proposed point of connection on the 132kV line has sufficient export and import capacity headroom to accommodate the Development, as confirmed by a grid connection offer received from National Grid Distribution (NGED).

5.34. The proposed DNO substation compound will comprise a DNO control room, one 132kV HV Switchgear and Grid Transformer set and associated equipment within a fenced compound. The dimensions and appearance of the proposed DNO substation and associated equipment is shown on the 132kV Switchgear Plans and Elevations Drawing submitted with the application (DWG No. WLL02A-EXG-05-ZZ-D-K009-P0).

Security & Lighting

5.35. To secure the proposed substation and BESS within the Southern parcel, a 2.4m high palisade security fencing is proposed around the perimeter of the BESS and DNO substation compounds in order to restrict access. Gates will be installed at the access point to the BESS compound for maintenance access. The design of the proposed gates will be of the same appearance, material and colour as the fencing. It is proposed that the palisade fencing is painted a dark green colour (or any other colour agreeable to the Council).

5.36. To secure the solar farm enclosures within each site parcel, a deer fence will be provided around the perimeter of the solar arrays, which will be of timber post and wire mesh design to be in keeping with the rural surroundings. The proposed perimeter fencing will be installed at a height of approximately 2.5m along the outer edges of the separate parcels of arrays in order to restrict access. The minimum distance between the edge of the arrays and the fence would be 5m followed by 5m outside the deer fencing to the field boundary.

5.37. The distance between the proposed fencing and existing/proposed hedges and woodland would vary across the site and at its minimum distance this would be no less than 5m. The buffer area would be used for ecological enhancement measures and the trimming and maintenance of existing and proposed vegetation. Where the scheme abuts the designated SINC at Old Wood on the northern boundary of the site northern parcel, an increased minimum buffer of 30m will be maintained and similarly used for ecological enhancement measures.

5.38. In addition to fencing, it is proposed that pole mounted CCTV and/or infrared security cameras would be positioned at intervals along the inside face edge of the fencing and facing into the site to protect privacy. Within the solar farm the proposed CCTV cameras would be at a height of 4m and up to a height of 4m within the DNO substation and BESS compounds.

5.39. Badger friendly/small mammal access points will be prescribed at various locations along the solar farm enclosure fencing to allow the passage of badgers across the site. The locations and numbers of these will be informed by appropriately qualified ecologists. Alternatively in places the fencing will not be installed close to the ground to ensure small mammals can pass beneath. This is discussed further in the Ecological Impact Assessment.

5.40. Details of the proposed cameras and fencing are shown on the Proposed Site Layout in addition to the specific Substation Fence & Access, Solar Fence & CCTV and BESS CCTV & Lighting elevations submitted with the planning application.

5.41. Gates will be installed at the access point to both the BESS and DNO substation compounds and for each separate parcel of arrays within each field enclosure for maintenance access. The design of the proposed gates will be of the same appearance, material and colour as the fencing.

5.42. No permanent lighting will be required on Site with infrared CCTV cameras being deployed to enable the security company to have a visual at night. At times, task lighting or emergency

lighting (low in luminance) will only be necessary when an engineer is in attendance. Notwithstanding this, the design and location of the substation and BESS compounds is such that light spill out from the Site would be negligible.

Method Statement for Cable Installation in the Public Highway

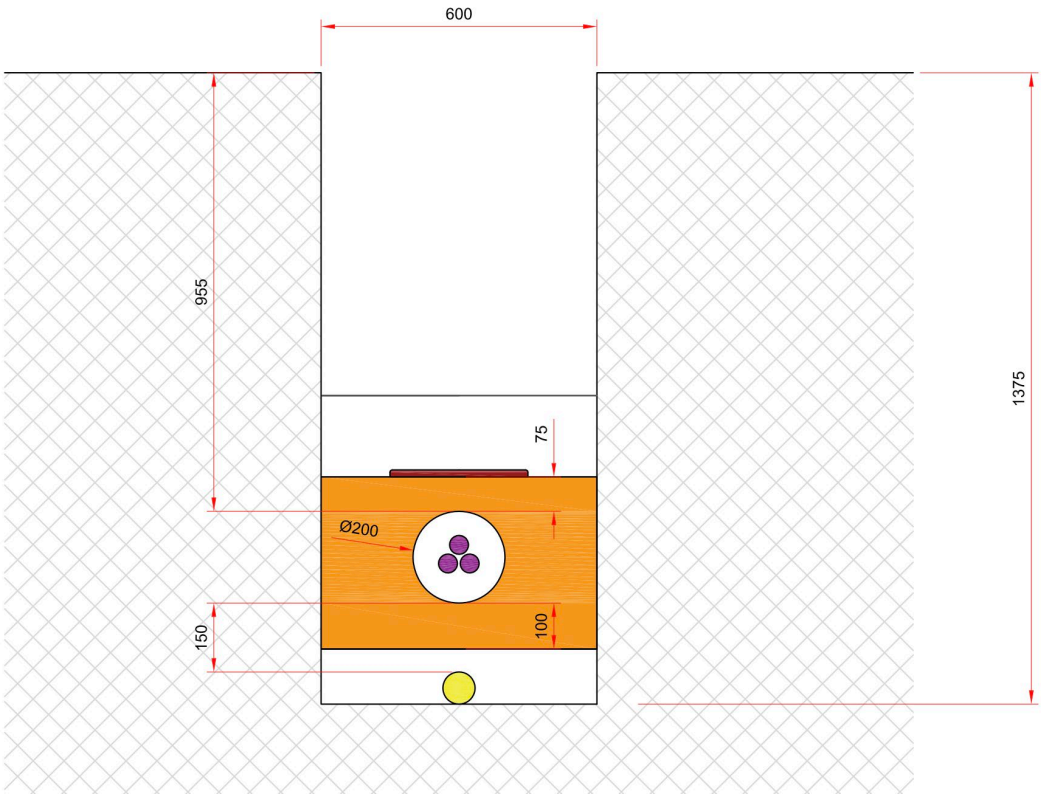
Overview of the works

5.43. A cable will be laid between the northern parcel and the southern parcel, which will follow the public highway as indicated by the red line in the planning application.

Cable Installation Method

5.44. The cable installation will involve digging a trench in the road, laying the cable and backfilling. This document provides a brief method statement for these works, all of which would involve the installation of the cable within the bound section of the road itself, and not the verges.

5.45. The following is a typical cross section of the cable trench to provide an indication of typical width and depth:



- Prior to works commencing all required highways consents would be sought and consultation would be undertaken with the local highways authority.
- Excavation area would be surveyed and marked out

- The area of excavation would be cordoned off to stop trespassers and any temporary traffic management measures would be implemented in consultation with the local highways authority.
- Required signage such as 'DEEP EXCAVATIONS' DANGER' and 'PEOPLE WORKING' would be clearly positioned.
- Review of the excavation area to find underground services, by using appropriate equipment such as cable detector, meta detector and test pits.
- Any excavations near to existing utilities and services shall take all necessary precautions to protect the services with proper supports and cover.
- Manual excavation will be used where necessary
- If the excavation depth exceeds 1.2 m the appropriate shoring will be provided on the sides of the trench.
- The excavated material from the trench will be stored alongside the trench on the bound surface of the road, ready to be backfilled.
- The bottom of the trench will be levelled and well compacted.
- 150 mm sand bedding will be provided at the bottom of the trench before the cable is laid
- 300 mm of sand will be placed on top of the cable with cable protection tiles laid over the sand layer.
- Excavated material will be backfilled and compacted as the trench is filled, avoiding the use of stones and rocks.
- Cable warning tape will be laid 250 mm from the top of the cable protection tiles.
- The surface finish of the trench will match the existing road (tarmac) with the finish agreed in advance with the highways authority.
- Once works are completed then the local highway authority will be notified and will be welcomed for an inspection of the restored highway.

Design Evolution

5.46. As a result of the pre-application consultation with the public and with RBC, and the environmental surveys and assessments the design of the Development evolved into that final scheme that is the subject of this planning application. Further details on the design evolution are included in the Statement of Community Engagement and the Design and Access Statement.

Landscaping and Biodiversity

5.47. Within the site, new tree, hedgerow and woodland planting is proposed in strategic locations around the field enclosures to enhance and strengthen the visual screening of the Site. New wildflower and wet grassland meadow planting is proposed outside of the proposed fenced enclosures between the fencing and existing hedgerow and woodland boundaries of the site, whist new grazing meadow mixes will be seeded beneath the PV arrays within the fenced compounds. An area of Willow tree planting is proposed to the south and along part of Kingston Brook in the Southern parcel.

5.48. The Development is an example of a development which presents considerable opportunity for landscape and biodiversity mitigation and enhancement. The objectives for biodiversity are to: -

- Retain and protect existing habitats of local value within and adjacent to the Site during construction and operation, specifically hedgerows, woodland, trees and watercourses.
- Identify protected or notable species that may be present and potentially affected by the Development, and incorporate suitable avoidance, protection and mitigation measures to ensure their continued favourable conservation status;
- Provide habitat and landscape enhancements though new planting and creation of connected habitat linked to the wider area, using native species appropriate to the locality;
- Provide Sustainable Drainage Systems within the Site which will introduce new diverse habitat and opportunities for wildlife on the site;
- Provide opportunities for wider species diversity through planting and seeding, including hedgerow and woodland creation and infilling and creation of a diverse wildflower meadow; and,
- Providing additional nesting and refuge/overwintering habitat for wildlife such as reptiles invertebrates and small mammals with habitat piles/hibernacula, as well as barn owl, bat and bird boxes where appropriate.

5.49. Habitat creation and ongoing management practices are proposed that will enhance the operational site for biodiversity. The design and long-term management of the land seeks to maintain and improve functionality through protecting and enhancing potentially valuable wildlife corridors through strengthening the hedgerow and woodland network within and around the Site. Habitat enhancement measures include new native species hedgerow, tree and woodland planting and gapping up of existing hedgerows, creation of species diverse grassland and wildflower meadow areas. It is proposed to enhance existing hedgerows with supplementary planting of native species where required. The landscape information submitted with the planning application provides more detail in terms of planting and species.

5.50. These measures will provide dispersal, breeding, foraging and overwintering habitat for a variety of wildlife including invertebrates, birds, small mammals, amphibians and reptiles if present. The grassland creation will include the provision of a new wildflower meadow and enhanced meadowland and field margins sown with species rich seed mixes. The extensive areas of continuous new grassland habitat within and around the proposed compound, linked

to the wildflower meadows and species-rich field margins and habitats in the wider area, will provide improved connectivity and opportunities for a range of wildlife to forage, shelter and freely disperse across the Site.

5.51. Full details of the proposed landscape and ecological mitigation is detailed on the submitted Landscape Proposal Plan and respective Landscape & Visual Impact Assessment and Ecological Impact Assessment reports. Overall, the proposed suite of ecological and landscape enhancements across the Site will result in a substantial biodiversity net gain including a net gain of 80.65% of habitat units and 62.34% of hedgerow units. It is recommended that if the Council are minded to approve the application, a Landscape and Ecological Management Plan is secured via an appropriately worded planning condition to secure details regarding the implementation and ongoing maintenance of the proposed landscaped areas of the site for the lifetime of the development.

Access

5.52. As set out in the above section, separate vehicular access will be provided each of the site parcels.

5.53. Vehicular access to Northern Parcel of the site is proposed to be served by a new access track that will extend west from Bradmore Road parallel to the existing Lodge Farm access through the field to its south, retaining the existing farm access for continued farm and residential operation and use as a PRoW. The proposed new access has been designed to be able to accommodate the largest vehicle expected to access the site, a 16.5m articulated lorry. A passing place is provided after the junction and a turning area is also shown on the plans on the eastern extent of the solar development.

5.54. Vehicular access to the Southern Parcel of the site is currently achieved via an existing gated agricultural field entrance on Wysall Road on the parcel's southern boundary. From the field entrance an existing agricultural track and bridge provide vehicular access over Kingston Brook to enable access into the main field enclosures within the Southern Parcel. It is proposed to use the existing gated field entrance off Wysall Road for both construction and operational traffic which will be appropriately widened to the east to accommodate the largest vehicles expected to access the site during construction, a 16.5m articulated lorry. Existing bridge structure over the brook will similarly be upgraded to withstand the loading of the proposed construction traffic and this will remain when the Development is operational.

5.55. The proposed access points would be utilised for both temporary construction traffic and also adopted as the main access for vehicles once the development is operational. The proposed accesses will be created with appropriate visibility splays to serve construction vehicles. Internal access tracks within the Site will also be created to provide access to both the proposed BESS and DNO substation compounds and the separate solar array enclosures.

5.56. The proposed construction traffic routing has been devised to ensure that no vehicular traffic will be routed through the settlement of Wysall, with separate routing instructions provided for each of the site parcels.

5.57. For the Northern Parcel, construction traffic will be routed via the A60 south exit connecting with the A52, through Ruddington, Bradmore until the Loughborough Road and Pendock Lane junction is reached. Construction Vehicles access the Northern Parcel will then turn left onto

Pendock Lane which becomes Wysall Road and then Bradmore Road until the access to the Northern Parcel is reached.

5.58. For the Southern Parcel, construction traffic will similarly be instructed to take the A60 south exit off the roundabout connecting with the A52, through Ruddington, Bradmore and Bunny until the junction at Costock is reached. Construction vehicles will then turn left onto Wysall Road and travel east until the southern parcel access is reached.

5.59. Vehicles exiting the site parcels will utilise the inverse of the construction routes described above.

5.60. Temporary signage will be erected in the vicinity of the Site accesses on Wysall Road and the Bradmore Road during the construction phase to indicate that heavy construction vehicles are turning. If considered necessary, temporary traffic lights and / or banksmen can be deployed to regulate traffic as and when required at the eastern site access, halting traffic if necessary and guiding the HGVs into the site. Banksmen will not direct general traffic but will indicate to heavy and large construction vehicles when it is appropriate for them to enter and leave the Site. HGVs will only be permitted to leave the Site when the highway is clear of traffic.

5.61. As advised in the applicant's pre-application advice received from Nottinghamshire County Council (NCC), the northern parcels construction access route would need suitable mitigation to ensure that HGV's can route to the Site. A review of where a 16.5m HGV and a car can pass along Pendock Lane/Wysall Road/Bradmore Road has been undertaken based on OS Mapping. This review found that an HGV and a car can pass on Pendock Lane, however there are sections of Wysall Road and Bradmore Road where an HGV and car cannot pass with the roads current width. It is proposed to install 4 passing places along the access route. The proposed passing places will also allow an HGV to pass an HGV. Full details of the design and proposed locations of the passing places can be viewed within the accompanying TS submitted in support of this application. Following construction, the proposed passing places will remain in place to improve the current HGV traffic flows that use this route and currently struggle to pass if they meet on narrow sections.

Public Access

5.62. In term of public access, there are no Public Rights of Way (PRoW) within the southern parcel.

5.63. There are two public rights of way within the northern parcel including two instances where the PRoWs will be crossed by the proposed internal site access tracks. The PROW's will remain operational through the construction period and will have signs at either end to advise users of the construction works. During both the construction and operational phase, the PROW will be fenced off to ensure users safety. A qualified Banksman will walk alongside construction vehicles through the Site, when a PROW crossing is reached, the qualified banksman will check there are no PROW users then open the gate to allow the construction vehicle to continue.

5.64. The Development will not be accessible to the public and security measures proposed will act as a deterrent to prevent unlawful access.

5.65. Landscaped corridors framed between new rows of hedgerow and tree planting and swathes of wildflower meadow are proposed to buffer and enhance the retained PRoWs to both provide screening and mitigate visual effects of the development on users of the PRoWs.

Construction

5.66. A temporary construction compound will be set up within or adjoining the separate development parcels during construction. Within the Northern Parcel, the proposed construction laydown area will be positioned to the north of the new access road from Bradmore Road. Within the Southern Parcel, a separate compound will positioned within the south of the parcel in proximity to the proposed new internal access track where it extends north of the brook. Any vehicles associated with construction will therefore be contained within the Site and no unnecessary parking will occur on the local highway network.

5.67. The temporary compounds will likely include: -

- Temporary portable buildings to be used for offices, welfare and toilet facilities
- Containerised storage areas
- Parking for construction vehicles and workers vehicles
- Temporary hardstanding
- Temporary gated compound
- Wheel washing facilities

5.68. It is anticipated that the development will take approximately 6 months to complete. This includes the preparation of the Site, the temporary access track, erection of security fencing, assembly and erection of the PV strings, installation of the transformers, grid connection and BESS.

5.69. During the approximate 6 month construction period, it is proposed that construction working hours would be as follows:

- 08:00 – 18:00 Monday to Friday; and
- 08:00 – 13:00 Saturday.

5.70. Should work be required to be undertaken outside of these times, this would be agreed in writing in advance with the Council.

5.71. Deliveries to the site are proposed to be staggered and will be completed outside of the network peak hours to reduce the effect on the wider highway network.

5.72. Please see the Transport Statement submitted in support of the application for further details.

Surface Water Management

5.73. The nature of a solar farm means there will be minimal increase in impermeable area which would be provided by some small infrastructure containers spread out across the site, these would offer no increase in surface water runoff and would allow water to migrate into the permeable surfacing surrounding them (grass or gravel). Furthermore, through the change from agricultural use, the development would deliver diverse grassland, woodland and copse areas which would occupy otherwise bare arable land thereby enhancing the management of surface water across the site.

5.74. The proposed BESS and Substation infrastructure within the Southern Parcel would provide a very small impermeable area via the battery storage units / substation which will be sat on a concrete foundation base surrounded by permeable surfacing. Whilst surrounded by permeable surfacing the BESS compound will be underlined by an impermeable layer which will collect and convey surface water run off from the site through an isolated storage tank to the south of the compound before discharging to the Kingston Brook via an attenuation pond which will intercept and manage outfall to existing greenfield rates.

5.75. The proposed tank will continuously hold 228 cubic meters of water which in the rare event of a fire can be used as a water source for suppression purposes. Should a fire occur, the system incorporates a pen stock which when closed will isolate the storage tank from the wider drainage system enabling the containment and isolation of any contaminated surface water run off resulting from fire suppression used on the site until a point where it can be safely pumped out and removed from the site. The capacity of the tank will be greater than the minimum fire water run off storage volume set out in the NFFC battery guidance (1,900 litres per minute for 2 hours).

5.76. The proposed access tracks will be of a permeable crushed stone construction and will not provide any increase in runoff or alter the existing drainage characteristic of the site.

Waste & Recycling

5.77. The production of waste during construction would be extremely limited, as the large majority of components would be brought to site ready-made/pre-assembled. During operation, the Development will generate very little waste. Following the expiry of the consent, the solar panels, battery units and associated infrastructure would be dismantled and removed from the Site, leaving no residual effects. In addition, the solar panels and be recycled and battery units reused or recycled at the end of their operational life. This allows for the recovery of major panel components from the PV panels including glass, aluminium and copper, with likely cumulative yields greater than 85% of total panel mass. In the long term, dedicated solar PV and battery recycling plants can be expected to increase treatment capacities and the ability to recover a greater fraction of embodied materials. Decommissioning would be in accordance with technical guidance and best practice, with the methodology to be agreed with the Council at that time. There is no potential for significant effects on waste generation and management.

Health and Safety

5.78. The battery technology assessed as part of this planning application proposal is Lithium-ion based which is the basis for all manufacturers. The cells themselves are to contain materials

in the event of a failure and sit within a wider containerised package providing added protection in the event a cell was to fail. All battery manufacturers have inherent electrical and fire suppression systems that prevent failure from leak, overheating and 'trips' which are automatically activated under circumstances which put the equipment outside of parameters. As well as electrical and fire control systems each cell module has a HVAC system that actively cools the batteries reducing the chances of issue under operation. The UK Government has widely recognised the use of this technology across its energy strategy which speaks about the practicality and safety of its widespread implementation in the UK. Health and safety of these sites are of paramount importance which is why there are numerous procedures and design features put in place to combat hazards.

5.79. An Outline Battery Safety Management Plan ('OBSMP') has been prepared and is submitted as part of the application to ensure that safety risks related to the BESS element of the Development are understood, accounted for and mitigated as far as practicable, in agreement with relevant consultees, prior to construction commencing. The OBSMP sets out the design approach to be taken, and the information which is required to be provided in advance of construction of the Development to demonstrate that the BESS will be constructed and operated safely.

5.80. It is anticipated that any planning permission granted for the Development would require, as a condition prior to the implementation of any BESS, a Detailed Battery Safety Management Plan ('DBSMP'), which would be in accordance with this report. This is an approach that has been taken for applications for other large utility scale BESS projects in the UK, either standalone BESS projects or co-located with other renewable technologies such as solar or wind farms.

5.81. Following the adoption of the measures set out in the OBSMP, the risk of a fire occurring from the BESS will be reduced, and if a fire did occur, the risk of it spreading to the point where it became a major incident will be reduced to an acceptable level.

5.82. As detailed in the Surface Water Management section above there are provisions in place for fire water storage as well as capacity for isolating the drainage system in the event of a fire and fire water being used on site, such that any potentially contaminated run off can be stored and tested and if necessary tinkered offsite for treatment and or appropriate disposal. This ensures that such run off does not enter the wider environment, including Kingston Brook.

Operation

5.83. An operational lifespan of up to 40 years is sought for each component of the Development.

5.84. During the operational phase, the activities on site would amount to the maintenance and servicing of plant and equipment, and vegetation management. The solar panels will also need to be periodically cleaned to ensure efficient running of the system.

5.85. Operational access to each of the site parcels will be from the new proposed access point from Bradmore Road and the upgraded entrance on Wysall Road respectively. This is detailed further in the Transport Statement. It is anticipated that under normal circumstances, approximately only 1-2 visits per week will be required for equipment maintenance. Most visits to the site would be undertaken by an operative in a van/4x4, except in rare instances where repairs or replacements are required which may require HGVs.

Decommissioning

5.86. The Development would export renewable energy to the grid and provide grid stability services for up to 40 years. After the 40 year period the infrastructure would be decommissioned and the land restored back to its current agricultural use.

5.87. When the proposed solar farm is decommissioned, the solar panels and associated infrastructure will be removed. Due to the limited quantity of foundations, hard surfacing and heavy infrastructure, combined with the fact that the majority of the Site will be retained as grassland, the land will be easier to restore than more intrusive development types with more significant foundations.

5.88. There is the possibility that following the decommissioning of the solar farm that National Grid Distribution wish to retain the DNO substation on site. full details of this and the extent of the proposed decommissioning works would be set out within a detailed decommissioning strategy to be agreed with the Council.

5.89. As with similar development within the RBC administrative area, it is recommended that a suitably worded condition is attached to any planning permission to secure the submission of a detailed decommissioning strategy to detail the removal of the development and restoration of the Site after the lifetime of the development has come to an end. The decommissioning strategy will also detail the trigger point for the 'ceasing of operations' of the development and the required decommissioning of the Site.

6. Planning Policy and Material Considerations

6.1. This section identifies the national and local planning policy, guidance and other material considerations pertinent to the application proposal. The plan-led approach to development as set down by Section 38 (6) of the Planning and Compulsory Purchase Act 2004 requires development proposals to accord with the adopted development plan unless material considerations indicate otherwise.

6.2. The planning application will be determined in accordance with Section 70(2) of the Town and Country Planning Act 1990 (as amended), which states that in dealing with applications, local planning authorities shall have regard to the provisions of the statutory development plan and other material considerations.

6.3. Importantly, the development plan must be understood as a whole. This approach to construing policy is endorsed in case law judgments; notably that of Sullivan J in Rochdale [R v Rochdale MBC ex parte Milne [2001] reported at 81 P&CR 365]. In this case, Sullivan J concluded that in assessing compliance with the development plan it is not necessary to comply with all policies; there will be some core or site-specific policies that take precedence over others. In other words, there will be dominant policies which guide the development proposal.

6.4. Paragraph 008 of the Planning Practice Guidance on Determining a Planning Application (last updated 27 March 2015) provides a definition of material consideration and states: ***"A material planning consideration is one which is relevant to making the planning decision in question (e.g. whether to grant or refuse an application for planning permission). The scope of what can constitute a material consideration is very wide and so the courts often do not indicate what cannot be a material consideration. However, in general they have taken the view that planning is concerned with land use in the public interest, so that the protection of purely private interests such as the impact of a development on the value of a neighbouring property or loss of private rights to light could not be material considerations".***

6.5. The Local Development Plan pertinent to the application site and development proposals comprise:

- Rushcliffe Borough Council Local Plan Part 1: Core Strategy 2014
- Rushcliffe Borough Council Local Plan Part 2: Land and Planning Policies 2019

6.6. A summary of the respective development plan documents and associated policies is set out below.

Local Development Plan

Rushcliffe Borough Council Local Plan Part 1: Core Strategy 2014

6.7. The RBC Local Plan Part 1 (LPP1) was first adopted by Rushcliffe Borough Council in December 2014 and it represents the latest policy expression at the local level for development within the RBC administrative area. The Local Plan Part 1: Core Strategy establishes the strategic approach the Council proposes to employ towards new development in the borough and

identifies the main strategic development allocations for delivery over the course of the Plan Period

6.8. A summary of the key relevant policies of the LPP1 is set out below:

6.9. **Policy 2 (Climate Change)** - This policy sets an expectation for all development to mitigate against and adapt to climate change by complying with national and local targets for reducing carbon emissions. Paragraph 5 provides specific guidance in respect of renewable/ low carbon energy generation and states that following:

> *"The extension of existing or development of new decentralised, renewable and low-carbon energy schemes appropriate for Rushcliffe will be promoted and encouraged, including biomass power generation, combined heat and power, wind, solar and micro generation systems, where these are compatible with environmental, heritage, landscape and other planning considerations. In line with the energy hierarchy, adjacent new developments will be expected to utilise such energy wherever it is feasible and viable to do so".*

6.10. In addition to the policies set out in detail above, the following policies of the adopted Local Plan Part 1: Core Strategy are considered relevant and informative for the development proposals:

- Policy 1 – Presumption in Favour of Sustainable Development;
- Policy 3 – Spatial Strategy;
- Policy 10 – Design and Enhancing Local Identity;
- Policy 11 – Historic Environment;
- Policy 16 – Green Infrastructure, Landscape, Parks and Open Spaces;
- Policy 17 – Biodiversity; and,
- Policy 18 – Infrastructure.

Rushcliffe Borough Council Local Plan Part 2: Land and Planning Policies 2019

6.11. RBC's Local Plan Part 2 (LPP2) was first adopted in October 2019 and identifies the key non-strategic development allocations and designations in addition to providing more detailed policies for use in the determination of planning applications, supporting the principal policies set out within the LPP1.

6.12. A summary of the key relevant policies of the LPP2 is set out below:

6.13. **Policy 16 (Renewable Energy)** – This policy sets out the development management criteria specific for new proposals for new renewable energy generating development. The policy sets out:

1. Proposals for renewable energy schemes will be granted planning permission where they are acceptable in terms of:

- compliance with Green Belt policy:
- landscape and visual effects;
- ecology and biodiversity;
- best and most versatile agricultural land;
- the historic environment;
- open space and other recreational uses;
- amenity of nearby properties;
- grid connection;
- form and siting;
- mitigation;
- the decommissioning and reinstatement of land at the end of the operational life of the development;
- cumulative impact with existing and proposed development;
- emissions to ground, water courses and/or air;
- odour;
- vehicular access and traffic; and
- proximity of generating plants to the renewable energy source.

6.14. In addition to the policies set out in detail above, the following policies of the adopted Local Plan Part 2: Land and Planning Policies are considered relevant and informative for the development proposals:

- Policy 1 – Development Requirements;
- Policy 17 – Managing Flood Risk;
- Policy 18 – Surface Water Management;
- Policy 19 – Development Effecting Watercourses;
- Policy 20 - Managing Water Quality;
- Policy 22 – Development in the Countryside;
- Policy 28 – Conserving and Enhancing Heritage Assets;
- Policy 29 - Development Affecting Archaeological Sites;

- Policy 37 – Trees and Woodland;
- Policy 38 – Non-designated Biodiversity Assets and the Wider Ecological Network;
- Policy 39 - Health Impacts of Development; and,
- Policy 42 - Safeguarding Minerals.

National Planning Policy Framework

6.15. The 7th edition of the NPPF was published in December 2023 (as amended) and includes minor changes. Much of the latest version remains unchanged and many of the proposed changes are irrelevant to the Development.

6.16. The Framework is clear that planning decisions must be made in accordance with Planning Law. **Paragraph 2** states that planning law requires that applications for planning permission must be determined in accordance with the Local Plan, unless material considerations indicate otherwise. Paragraph 2 continues that: *"Planning policies and decisions must also reflect relevant international obligations and statutory requirements"*.

6.17. **Paragraph 8** of the Framework identifies how the planning system has three overarching objectives towards achieving sustainable development.

6.18. The revised NPPF stated how these objectives are interdependent and need to be pursued in mutually supportive ways so that opportunities can be taken to secure net gains across each of the different objectives.

6.19. **Paragraph 8(a)** *'an economic objective'* has been strengthened and the NPPF now makes it clearer how "*identifying and coordinating provision of infrastructure*" is integral towards fulfilling the economic arm of achieving sustainable development.

6.20. The three overarching objectives are listed as:

> ***a) an economic objective*** *- to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;*
>
> *b)* ***a social objective -*** *to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-designed beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and*
>
> ***c) an environmental objective -*** *to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.*

6.21. **Paragraph 9** advises how these overarching objectives should be delivered through the preparation and implementation of plans and the application of policies in the Framework. **Paragraph 10** states ***"So that sustainable development is pursued in a positive way, at the heart of the Framework is a presumption in favour of sustainable development".***

6.22. **Paragraph 15** of the Framework sets out how the planning system should be genuinely plan-led. It goes on to state how succinct and up-to-date plans should provide a positive vision for the future of each and provide a framework for assessing the economic, social and environmental priorities. **Paragraph 16** set out how plans should be prepared with the objective of contributing to the achievement of sustainable development. **Paragraph 20** identifies how, in line with the presumption on favour of sustainable development, plans should make sufficient provision for the provision of infrastructure and energy.

6.23. The identification and delivery of energy schemes is therefore acknowledged by the NPPF 2nd edition as one of the strategic policies that contributes towards achieving the presumption on favour of sustainable development. **Paragraph 85** confirms the Government's commitment to supporting sustainable economic growth and states (inter alia) ***"Planning policies and decisions should help create the conditions in which businesses can invest, expand and adapt. Significant weight should be placed on the need to support economic growth and productivity, taking into account both local business needs and wider opportunities for development. The approach taken should allow each area to build on its strengths, counter any weaknesses and address the challenges of the future".*** The application proposal specifically counters and addresses the weakness in the security of electricity supply.

6.24. **Paragraph 88,** supporting a prosperous rural economy, is also pertinent as the Development Plan identifies the site as being located in open countryside, it states how planning decisions should enable the sustainable growth of all types of businesses in the rural areas; and the development and diversification of agricultural and other land-based rural businesses.

6.25. Section 14 of the NPPF relates to meeting the challenge of climate change, flooding and coastal change. **Paragraph 160** of the NPPF sets out the planning policy perspective with regards to increasing the use and supply of renewable and low carbon energy. Through the paragraph, Government requires the decision maker to:

> ***a) provide a positive strategy for energy from these sources, that maximises the potential for suitable development, and their future re-powering and life extension, while ensuring that adverse impacts are addressed appropriately (including cumulative landscape and visual impacts);***
>
> ***b) consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and***
>
> *c) identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for colocating potential heat customers and suppliers.*

6.26. Section 15 of the NPPF relates to conservation and enhancement of the natural environment. **Paragraph 180** highlights that new development should be prevented from contributing to

or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability. It identifies how decisions should provide net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

6.27. Footnote 58 states ***"Where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality".*** Annex 2 of the Framework provides a glossary of terms and defines 'best and most versatile agricultural land' as land in grades 1, 2 and 3a of the Agricultural Land Classification.

6.28. Section 16 of the NPPF is concerned with 'Conserving and enhancing the historic environment'. It identifies heritage assets as 'an irreplaceable resource' and notes that they should be conserved in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of existing and future generations. Paragraph 205 of the NPPF states that where development proposals are likely to affect a designated heritages asset, great weight should be given to the asset's conservation and any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting) should require clear and convincing justifications. Paragraphs 207 and 208 continue to state:

> ***"Where a Development will lead to substantial harm to (or total loss of significance of) a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply:***
>
> - ***the nature of the heritage asset prevents all reasonable uses of the site; and***
> - ***no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation; and***
> - ***conservation by grant-funding or some form of not for profit, charitable or public ownership is demonstrably not possible; and***
> - ***the harm or loss is outweighed by the benefit of bringing the site back into use.***
>
> ***Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal including, where appropriate, securing its optimum viable use".***

6.29. Overall, the Framework confirms that the primary objective of development management is to foster the delivery of sustainable development, not to hinder or prevent it. Local Authorities should approach development management decisions positively - looking for solutions rather than problems so that applications can be approved wherever it is practical to do so.

Planning Practice Guidance (PPG)

6.30. Government's Planning Practice Guidance is a web-based resource that provides planning guidance on various planning policy and development management topics. The key topics relevant to this application proposal are:

- Climate Change;
- Renewable and Low Carbon Energy;
- Historic Environment;
- Natural Environment;
- Open Space, Sports and Recreation Facilities, Public rights of Way and Local Green Space; and
- Strategic Environmental Assessment and Sustainability Appraisal.

Renewable and Low Carbon Energy

6.31. This guidance reaffirms Government's commitment towards increasing the amount of renewable energy and low carbon technologies within the UK.

6.32. Paragraph 007 of the guidance considers the role of criteria based polices in planning for renewable energy and states: -

> *Policies based on clear criteria can be useful when they are expressed positively (i.e. that proposals will be accepted where the impact is or can be made acceptable). In thinking about criteria the National Policy Statements published by the Department of Energy and Climate Change provide a useful starting point. These set out the impacts particular technologies can give rise to and how these should be addressed. In shaping local criteria for inclusion in Local Plans and considering planning applications in the meantime, it is important to be clear that: the need for renewable or low carbon energy does not automatically override environmental protections; cumulative impacts require particular attention, especially the increasing impact that wind turbines and large scale solar farms can have on landscape and local amenity as the number of turbines and solar arrays in an area increases; local topography is an important factor in assessing whether wind turbines and large scale solar farms could have a damaging effect on landscape and recognise that the impact can be as great in predominately flat landscapes as in hilly or mountainous areas; great care should be taken to ensure heritage assets are conserved in a manner appropriate to their significance, including the impact of proposals on views important to their setting; proposals in National Parks and Areas of Outstanding Natural Beauty, and in areas close to them where there could be an adverse impact on the protected area, will need careful consideration; protecting local amenity is an important consideration which should be given proper weight in planning decisions.*

6.33. Paragraph 013 of the guidance sets out the planning considerations that relate to large scale ground-mounted solar photovoltaic farms. It states: -

> *The deployment of large-scale solar farms can have a negative impact on the rural environment, particularly in undulating landscapes. However, the visual impact of a well-planned and well-screened solar farm can be properly addressed within the landscape if*

planned sensitively. Particular factors a local planning authority will need to consider include:

encouraging the effective use of land by focussing large scale solar farms on previously developed and non-agricultural land, provided that it is not of high environmental value;

where a proposal involves greenfield land, whether (i) the proposed use of any agricultural land has been shown to be necessary and poorer quality land has been used in preference to higher quality land; and (ii) the proposal allows for continued agricultural use where applicable and/or encourages biodiversity improvements around arrays. See also a speech by the Minister for Energy and Climate Change, the Rt Hon Gregory Barker MP, to the solar PV industry on 25 April 2013 and Written Ministerial Statement – Solar energy: protecting the local and global environment – made on 25 March 2015.

that solar farms are normally temporary structures and planning conditions can be used to ensure that the installations are removed when no longer in use and the land is restored to its previous use;

the proposal's visual impact, the effect on landscape of glint and glare (see guidance on landscape assessment) and on neighbouring uses and aircraft safety;

the extent to which there may be additional impacts if solar arrays follow the daily movement of the sun;

the need for, and impact of, security measures such as lights and fencing;

great care should be taken to ensure heritage assets are conserved in a manner appropriate to their significance, including the impact of proposals on views important to their setting. As the significance of a heritage asset derives not only from its physical presence, but also from its setting, careful consideration should be given to the impact of large scale solar farms on such assets. Depending on their scale, design and prominence, a large scale solar farm within the setting of a heritage asset may cause substantial harm to the significance of the asset;

the potential to mitigate landscape and visual impacts through, for example, screening with native hedges;

the energy generating potential, which can vary for a number of reasons including, latitude and aspect.

The approach to assessing cumulative landscape and visual impact of large scale solar farms is likely to be the same as assessing the impact of wind turbines. However, in the case of ground-mounted solar panels it should be noted that with effective screening and appropriate land topography the area of a zone of visual influence could be zero.

6.34. Paragraphs 032 – 036 of the guidance provide new considerations for Battery Storage Systems. It states:

Electricity storage can enable us to use energy more flexibly and de-carbonise our energy system cost-effectively – for example, by helping to balance the system at lower cost, maximising the usable output from intermittent low carbon generation (e.g. solar and wind), and deferring or avoiding the need for costly network upgrades and new generation capacity.

When applying for planning permission for development involving lithium-ion battery energy storage systems these are subject to the requirements set out in The Town and Country Planning (Development Management Procedure) (England) Order 2015 .

Where planning permission is being sought for development of battery energy storage systems of 1 MWh or over, and excluding where battery energy storage systems are associated with a residential dwelling, applicants are encouraged to engage with the relevant local fire and rescue service before submitting an application to the local planning authority. This is so matters relating to the siting and location of battery energy storage systems, in particular in the event of an incident, prevention of the impact of thermal runway, and emergency services access can be considered before an application is made.

Applicants are also encouraged to consider guidance produced by the National Fire Chiefs Council (PDF, 488 KB) when preparing the application.

The location of such sites are of particular interest to fire and rescue services; who will seek to obtain details of the design, and firefighting access and facilities at these sites in their register of site specific risks that they maintain for the purposes of Section 7 of the Fire and Rescue Services Act 2004.

When planning applications for the development of battery energy storage systems of 1 MWh or over, and excluding where battery energy storage systems are associated with a residential dwelling, are submitted to a local planning authority, the local planning authority are encouraged to consult with their local fire and rescue service as part of the formal period of public consultation prior to deciding the planning application. This is to ensure that the fire and rescue service are given the opportunity to provide their views on the application to identify the potential mitigations which could be put in place in the event of an incident, and so these views can be taken into account when determining the application.

Local planning authorities are also encouraged to consider guidance produced by the National Fire Chiefs Council (PDF, 488 KB) when determining the application.

6.35. Importantly, the guidance acknowledges the appropriate use of agricultural land for renewable energy provided it allows for continued agricultural use and/or encourages biodiversity improvements around arrays; and the use of the agricultural land has been demonstrated as necessary. The guidance also identifies how ground mounted solar schemes are temporary structures whereby planning conditions can be used to ensure that the installations are removed when no longer in use and the land is restored to its previous use.

6.36. The guidance was updated on 14th August 2023 to include new considerations for grid scale BESS development. The new guidance acknowledges that BESS development is now recognised as a renewable generating development and provides more detailed guidance to

applicants who are now encouraged to engage with local fire and rescue services during the pre-application stage. Given the rural location of the Development, the measures set out in the submitted OBSMP and the design considerations taken on board from the NFCC guidance cited in the NPPG with regards to access (loops around the battery areas and multiple entrances to the BESS compound), fire water storage and drainage, pre-application consultation was not carried out with the local Fire and Rescue Service. It is accepted that in accordance with the guidance, RBC will consult with the local Fire and Rescue Service during their consideration of the planning application.

Practical Guidance on Climate Change

6.37. Government's Practical Guidance on Climate Change identifies how addressing climate change is one of the core land use planning principles which the National Planning Policy Framework expects to underpin in both plan-making and decision-taking. Paragraph 3 sets out examples of mitigating climate change by reducing emissions, these include (i) Providing renewable and low carbon energy technologies and (ii) providing opportunities for decentralised energy. The proposal would achieve both.

6.38. Paragraph 5 of the guidance identifies how impacts of climate change needs to be taken into account in a realistic way. It goes on to state that local planning authorities should consider identifying no or low-cost responses to climate change that also deliver other benefits. In this instance the proposal is landowner and developer led; and as such there is no financial costs associated with the delivery of this response to climate change for the Local Planning Authority. Furthermore, the development proposal would deliver other climate change benefits such as biodiversity and hydrological enhancements.

Other Guidance & Material Considerations

National Policy Statements

6.39. The National Policy Statements (NPSs) provide the planning policy framework for examining and determining Nationally Significant Infrastructure Projects (NSIPs). Whilst the Development fall below the threshold of a NSIP (50MW installed capacity for solar with BESS being exempt) and thus the NPSs are not directly relevant, they do form a material consideration in the determination of the planning application.

6.40. The following NPSs are considered to be relevant to the Development:

- EN-1 – Overarching NPS for Energy;
- EN-3 – NPS for Renewable Energy Infrastructure; and
- EN-5 – NPS for Electricity Networks Infrastructure;

6.41. Following the publication of the Energy White Paper in December 2020, the Government announced that they would review the existing National Policy Statements for Energy to both reflect the strategic approach set out within the Energy White Paper and ensure that we continue to have a planning policy framework which can support the infrastructure required for the transition to net zero. the revised NPS for energy were published on 22nd November 2023 and came into force as of the 17th January 2024.

6.42. With regards to solar development, the energy NPS EN-1 states at paragraphs 3.3.20 and 3.3.22 that:

> *3.3.20 Wind and solar are the lowest cost ways of generating electricity, helping reduce costs and providing a clean and secure source of electricity supply (as they are not reliant on fuel for generation). Our analysis shows that a secure, reliable, affordable, net zero consistent system in 2050 is likely to be composed predominantly of wind and solar.*
>
> *3.3.22 However, it is recognised that ensuring affordable system reliability, today and in the future, means wind and solar need to be complemented with technologies which supply electricity, or reduce demand, when the wind is not blowing, or the sun does not shine.*

6.43. Of particular relevance to BESS development the energy NPS EN-1 states at paragraphs 3.3.5 and 3.3.6 that:

> *3.3.5 New generating plants can deliver a low carbon and reliable system, but we need the increased flexibility provided by new storage and interconnectors (as well as demand side response, discussed below) to reduce costs in support of an affordable supply.*
>
> *3.3.6 Storage and interconnection can provide flexibility, meaning that less of the output of plant is wasted as it can either be stored or exported when there is excess production. They can also supply electricity when domestic demand is higher than generation, supporting security of supply. This means that the total amount of generating plant capacity required to meet peak demand is reduced, bringing significant system savings alongside demand side response (up to £12bn per year by 2050).40 Storage can also reduce the need for new network infrastructure. However, neither of these technologies, as with demand side response, are sufficient to meet the anticipated increase in total demand, and so cannot fully replace the need for new generating capacity.*

6.44. NPS EN-1 continues to state at paragraphs 3.3.25 - 3.3.27:

> *3.3.25 Storage has a key role to play in achieving net zero and providing flexibility to the energy system, so that high volumes of low carbon power, heat and transport can be integrated.*
>
> *3.3.26 Storage is needed to reduce the costs of the electricity system and increase reliability by storing surplus electricity in times of low demand to provide electricity when demand is higher. There is currently around 4GW of electricity storage operational in GB, around 3GW of which is pumped hydro storage and around 1GW is battery storage.*
>
> *3.3.27 Storage can provide various services, locally and at the national level. These include maximising the usable output from intermittent low carbon generation (e.g. solar and wind), reducing the total amount of generation capacity needed on the system; providing a range of balancing services to the NETSO and Distribution Network Operators (DNOs) to help operate the system; and reducing constraints on the networks, helping to defer or avoid the need for costly network upgrades as demand increases.*

6.45. This Planning Statement is supported by an Energy Policy Statement which is provided at Appendix 2 of this report and sets out the other legislative background and guidance supporting the delivery of standalone renewable energy schemes. These documents form key components of central and local Government's policy and commitments to renewable and low carbon energy and should be considered material to the determination of this Development.

APPENDIX 2 – ENERGY POLICY STATEMENT

Rushcliffe Borough Council Climate Change Strategy 2021 - 2030

6.46. The Rushcliffe Borough Council Climate Change Strategy was first adopted in November 2021 and together with the Council's Carbon Management Action Plan sets out the steps the Council will take towards reducing greenhouse gas emissions for the Council as an organisation. In addition to the Council's own commitment to become a carbon neutral organisation by 2030, the Climate Change Strategy also sets out the Council's commitment to ensure the whole of the Rushcliffe Borough will be net zero by 2050. In achieving these targets, the Climate Changes Strategy focuses on three key areas:

- Council – Reducing the emissions associated with the Council's own buildings and activities;
- Conservation – Protecting and increasing the Council's green spaces and their ability to absorb CO_2; and,
- Community – Supporting residents and businesses to reduce their emissions.

Rushcliffe Borough Council Carbon Management Plan 2020

6.47. The Rushcliffe Borough Council Carbon Management Plan 2020 sets out the key actions the Council will take in implementing their Climate Change Strategy. With regards to renewable energy the Council commits to developing supplementary planning documents for renewable energy developments to promote the delivery of new renewable energy generating development to support the delivery of the D2N2 Energy Strategy.

D2N2 Energy Strategy

6.48. Sets out the Clean Growth and Energy Strategy for Derbyshire and Nottinghamshire Counties. The Strategy sets out key targets for the Counties to promote the rollout of low carbon and renewable energy developments, including a target to achieve a 100% low carbon energy supply by 2030 with 60% renewable energy generation output generated by local low carbon sources and an increase of 180MW in electricity storage.

Rushcliffe Borough Council Solar Farm Development Planning Guidance (November 2022)

6.49. In November 2022, RBC published a planning guidance document specifically aimed at providing guidance on:

- the planning policy context in respect of major, stand-alone ground mounted solar photovoltaic panel developments (that do not exceed 50MW) generating capacity;

- the key material planning considerations likely to be relevant to the determination of planning applications for major solar farm developments within the Borough; and
- examples of the information/documents that the Council expects should be submitted with planning applications for major solar farm developments.

7. Planning Assessment

7.1. This section of the Statement contains a high-level appraisal of the Development against the relevant material planning considerations. These considerations have been derived from an understanding of the site and its surrounds and the policy analysis of the previous section.

Need for Development

7.2. As set out in sections 3 and 6 of this statement and within the supporting Energy Policy Statement at Appendix 2, there is a plethora of Government legislation, guidance and policy which support the transition to a low carbon future and the continued roll out of renewable and low carbon energy and associated infrastructure.

7.3. The explicit need to introduce a step change in how the country deals with climate change was recognised by the Government who, on 1 May 2019, declared an environmental and climate change emergency following the finding of the Inter-governmental Panel on Climate Change that to avoid more than 1.5°C rise in global warming, global emissions would need to fall by around 45 per cent from 2010 levels by 2030, reaching net zero by around 2050. Through the declaration, the Government recognised a need to move swiftly to capture economic opportunities and green jobs in the low carbon economy while managing risks for workers and communities currently reliant on carbon intensive sectors. As part of its contributions to international efforts, the UK also has domestic legislation and policies in place to reduce greenhouse gas emissions as set out in Section 3 of this Statement above.

7.4. The urgent need for international change in the approach to reducing greenhouse gas emissions has only been compounded through the publication of the Intergovernmental Panel on Climate Change's (IPCC) Synthesis Report for the Sixth Assessment report, finalising its Sixth Assessment Cycle. The report finds that there is a more than 50% chance that global temperature rise will reach or surpass 1.5 degrees C between 2021 and 2040 across studied scenarios, and under a high-emissions pathway, specifically, the world may hit this threshold even sooner — between 2018 and 2037. Global temperature rise in such a carbon-intensive scenario could also increase to 3.3 degrees C to 5.7 degrees C by 2100. To put this projected amount of warming into perspective, the last time global temperatures exceeded 2.5 degrees C (4.5 degrees F) above pre-industrial levels was more than 3 million years ago. Changing course to limit global warming to 1.5 degrees C (with no or limited overshoot) will instead require deep GHG emissions reductions in the near-term. In modelled pathways that limit global warming to this goal, GHG emissions peak immediately and before 2025 at the latest, then dropping rapidly, declining 43% by 2030 and 60% by 2035, relative to 2019 levels.

7.5. It is outlined by the Government within its National Policy Statement (NPS) for Energy (2023) and Energy White Paper 2020 that there is an urgent need to create an efficient electricity market which is capable of adapting to the increased deployment of renewable energy generation. The balancing of supply and demand becomes more complex as the deployment of renewable generation increases as most renewables are, by their nature, intermittent and generate electricity only when 'the wind blows or the sun shines'. It is acknowledged that increasingly, flexibility will be required to come from new, cleaner sources, such as energy storage in batteries, as the dependency on renewable energy increases. Storing excess low-carbon generation over longer periods of time could enable us to decarbonise the energy system more deeply at lower costs.

7.6. In June 2020, the Government's Committee on Climate Change (CCC) identified how current policy, including planning policy, is insufficient to meet existing targets and a net zero target for 2050 would not be credible unless policy is ramped up significantly. The CCC concluded that the delivery of renewable energy generation must continue to progress with great urgency in order to meet the UKs next carbon budget. Consistently strong deployment of low-carbon generation is crucial to meeting the Net Zero target.

7.7. In setting a net-zero target, one critical delivery requirement is the recognised need to continue to expand rapidly the supply of low-carbon power. Renewables only accounted for 11% of the total UK energy consumption in 2018 (and 33% of electricity generation) and this provides clear evidence how the rapid provision of low-carbon energy should be given significant weight in the planning balance.

7.8. Through the British Energy Security Strategy, published in April 2022, the Government acknowledges that accelerating the transition from fossil fuels depends critically on how quickly we can roll out new renewables. As part of this strategy, the increased deployment of ground based solar development is identified by the Government to hold a key role in the realisation of these aims, with the government targeting a fivefold increase in the level of Solar PV development by 2035 (Up to 70GW). The strategy identifies how *"For ground-mounted solar, we will consult on amending planning rules to strengthen policy in favour of development on non-protected land, while ensuring communities continue to have a say and environmental protections remain in place"*.

7.9. The challenge is more acute at the local level where Rushcliffe Borough Council announced a climate emergency, and in such committing the Council to achieving net zero for its own operations by 2030. RBC's Climate Change Strategy and Carbon Management Plan has been developed to set out how these targets will be achieved and also commit the Council to achieve net zero carbon emissions for the borough as a whole by 2050.

7.10. Both the RBC Climate Change Strategy, Carbon Management Plan and the regional D2N2 Energy Strategy identify the significant role that renewable energy and low carbon development, such as the Development, have to play in achieving both the local and regional targets. Key targets set out within the D2N2 Energy Strategy specifically commit the Counties to promote the rollout of low carbon and renewable energy developments, including a target to achieve a 100% low carbon energy supply by 2030 with 60% renewable energy generation output generated by local low carbon sources and an increase of 180MW in electricity storage.

7.11. Notwithstanding the above, Planning Practice Guidance confirms that planning applications for solar farms and other renewable energy generating development are not required to demonstrate a need.

Sustainable Development

7.12. Turning to sustainable development, paragraph 8 of the NPPF confirms there are three dimensions to sustainable development, these are economic, social and environmental gains. Paragraph 8 advises that in order to achieve sustainable development, economic, social and environmental gains should be pursued in mutually supportive ways through the planning system.

7.13. It has recently been documented that, the number of new jobs being created in the UK through the renewable energy industry is currently growing four times faster than the overall UK employment market, with more than 336,000 'green' jobs created in the last year. The government announced in May 2022 that the Green Jobs Delivery Group will support the delivery of up to 480,000 skilled jobs by 2030. The Development will provide employment and business opportunities for component suppliers / installers and those involved in grid connection, transport and logistics, thus further increasing the provision of skilled 'green' job opportunities.

7.14. Where possible, local businesses will be contracted for relevant parts of the scope of works over the period of construction (labour and materials such as hardcore etc), operation and maintenance. There will be additional induced impacts during the construction period with any incoming construction workers (engineers, project managers etc) spending their wages at a local level (restaurants, retail stores etc) and using local accommodation. Furthermore, the Development will enable the diversification of an existing agricultural holding to improve both income and economic stability for the agricultural sector.

7.15. Social gain would be provided through the generation of local electricity that will be connected directly to the local grid; the proposal would also reduce reliance upon overseas energy sources. The energy production would help to meet the national and local need for energy and therefore the development would fulfil an important social role. The Development will be capable of both providing flexible and rapid release of electricity to allow the grid to regulate electricity supply and demand whilst also having the capacity to absorb electricity quickly which will allow for the oversupply of the grid to be managed. The flexible grid balancing services provided by the development will have a significant social role in providing valuable local energy security benefits to local homes and businesses.

7.16. Turning to environmental gains, these would be secured through carbon reduction (22,455 tonnes of CO_2 saved per year) and local biodiversity enhancements (80.65% for area-based habitat units and a gain of 62.34% for linear-based habitat units). The Development would help support the transition to a low carbon future and produce a significant amount of renewable energy. The introduction of new tree, woodland and hedgerow planting, diverse grassland beneath the array and areas of wildflower meadow would benefit a range of native wildlife for a 40 year period. Introducing a 40-year fallow period for the land will also assist the rebalancing of soil nutrients, re-establishing soil biota, breaking crop pest and disease cycles, and provide a haven for wildlife thus enhancing the quality of land for future agricultural use following the decommissioning of the solar farm. The Development would therefore deliver substantially on the environmental arm of sustainable development.

7.17. Reflecting on the above, the proposal duly delivers economic, social and environmental benefits and accords with the requirements of paragraph 8 of the Framework. As such the Development is considered to constitute sustainable development.

Principle of Development

7.18. Policy 2 of the adopted LPP1 and Policy 16 of the LPP2 sets out how the Council will take a positive stance on renewable energy development providing that it is compatible with environmental, heritage, landscape and other material considerations such as Green Belt policy, best and most versatile agricultural land, flood risk and residential amenity.

7.19. The site is located within the open countryside for development management purposes and is not situated within the Green Belt or any statutory landscape designations such as a National Park or National Landscape. The site is therefore considered to be of local value in the hierarchy of landscape designations or of low status in terms of the requirement for landscape consideration as advised within paragraph 181 of the NPPF.

7.20. It is widely accepted that with the risk of shortfalls resulting from the loss of future subsidies, many farmers are looking to diversify to improve income and provide stability for the agricultural sector. The diversification of agricultural land to provide renewable energy generation is a widely accepted form of agricultural diversification and is acknowledged to provide significant financial stability to existing farmsteads and rural businesses. The adopted Development Plan acknowledges that one of the key challenges is to recognise the strength provided to the economy by farm diversification. This is addressed through adopted Policy 22 of the LPP2 which supports the principle of farm diversification and developments for renewable and low carbon energy generation within the countryside where it is consistent with the provisions of LPP2 Policy 16.

7.21. The adopted Local Development Plans seek to protect the environmental quality of Rushcliffe Borough. This application is supported by a Heritage Statement and Landscape & Visual Impact Assessment assessing the proposals' impact within the context of the site and the wider landscape. The findings of these assessments are set out in greater detail in some of the following sections.

7.22. A renewable energy scheme of this size can only be positioned in the open countryside as ground mounted solar arrays have specific land take requirements. The site is not located within any sensitive areas as defined by the EIA regulations and as such by virtue of its siting, the proposal has taken into account the need to protect the valuable landscape and ecological resources provided within the surrounding countryside, whilst providing for the sensitive exportation of renewable energy sources in accordance with the policies set out in the NPPF. The local and national 2030 and 2050 targets provide significant weight in favour of the Development as significant acceleration of low carbon and renewables will be required to meet these targets. It is considered the wider environmental benefits associated with the increased generation of renewable energy greatly outweighs any perceived adverse impacts the Development may have on the surrounding countryside.

7.23. There are a number of areas including landscape character, residential amenity (visual, noise, glint and glare), flood risk and agricultural land classification (where the site is not classed as Best and Most Versatile) which are all assessed elsewhere in this Statement. As such, the requirements of Policy P22 are met.

Site Selection Process

7.24. The NPPF states that local planning authorities should identify suitable areas for renewable energy in development plans; it further states that substantial energy development outside these areas should demonstrate that the proposed location meets the criteria used in identifying the suitable areas. Notwithstanding the above, the NPPF also states that in determining renewable energy applications, local planning authorities should approve an application if its impacts are acceptable or can be made acceptable, unless material considerations indicate otherwise.

7.25. The adopted development plan does not currently identify any suitable area for solar development. Accordingly, since there are no specific search areas for solar development, the site selection is guided by the development control considerations laid out through the development management policies of the Development Plan and the operational needs and requirements of the Development.

7.26. Not every site will be suitable for accommodating solar, and therefore Exagen has been through a thorough feasibility exercise to assess the suitability of the Site. To identify viable land for large scale solar development the following constraints were reviewed/applied, and the Site is free of all of these:

- Green Belt (the 132 kV line that the Development connects into passes through large areas of Green Belt)
- National Parks and National Landscapes;
- Special Protection Areas, Special Areas of Conservation and Ramsar sites;
- Sites of Special Scientific Interest;
- Local and National Nature Reserves;
- Local Wildlife Sites and Sites of Importance for Nature Conservation;
- Ancient Woodland;
- RSPB Reserves;
- Registered Parks and Gardens;
- Country Parks;
- World Heritage Sites;
- Conservation Areas;
- Scheduled Monuments;
- Listed Buildings;
- Land within 250m of Settlements and sufficiently set back and/or screened from isolated residential properties.

7.27. The key criteria which have led to the Site being selected for solar development include:

- Acceptable solar irradiance levels;
- Proximity to an available and economic grid connection;
- Interested landowner;
- Avoiding statutory landscape, heritage and ecological designations;

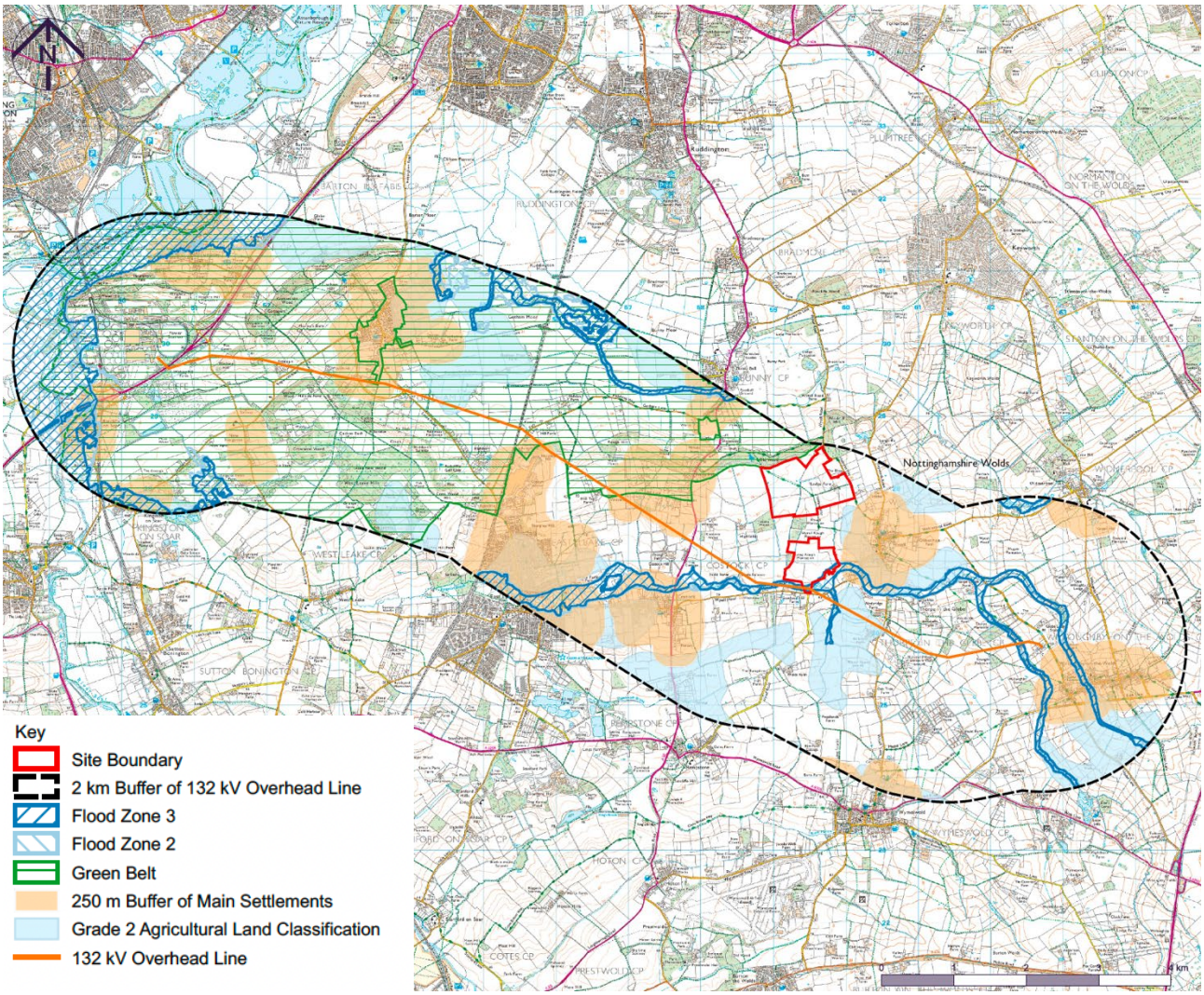
- Separation from residential areas and designated heritage assets;
- Topography, being generally flat or gently sloping;
- Large enough area of land generally requiring a rural location with good field sizes and shapes (large, regular shaped fields);
- Areas of existing mature woodland which together with the topography help to limit the potential visibility of the Development, particularly alongside additional landscaping;
- Suitable access for construction;
- Agricultural land classification, avoiding the use of any Best and Most Versatile land;
- Minimising impacts on sensitive landscapes by focusing on landscapes of lower sensitivity and benefiting from existing woodland and hedgerow screening;
- Minimising development in areas of Flood Risk; and
- Avoiding areas of ecological sensitivity and looking for opportunities for ecological/ biodiversity enhancement.

7.28. The ability to generate low carbon, low-cost electricity is constrained by grid connection opportunities. It is known that the existing 132 kV line between Ratcliffe-on-Soar and Willoughby-on-the-Wolds has capacity to accept electrical input from the Development. This is confirmed by a grid connection offer provided to Exagen by National Grid Distribution, the Distribution Network Operator. An important note is that connections for any alternative site would only be theoretical and the only point of connection that has been established and is known to be possible is the Site itself.

7.29. There are two aspects to the site search, one associated with the point of connection (POC) (the substation infrastructure, battery storage and physical connection into the existing overhead line) and the other the solar farm.

7.30. The POC has to be located in immediate proximity to the existing 132 kV overhead line with existing suitable access to the highway network to enable the safe movement of construction vehicles during the construction process. It is important to note that for this particular project, being of this size and within this area, only sites benefitting from an onsite connection were considered likely to be feasible and so this must be given considerable weight.

7.31. The following plan illustrates the constraints associated with a connection into the 132 kV line. On the plan a 2 km buffer of the line is shown. As can be seen there are significant constraints to the west including green belt, proximity to settlements, BMV land and areas subject to flooding. The Site is outside of the mapped constraints and whilst there are potential alternative sites to the southeast, they appear similar to the site, no better or worse.



Highways Considerations

7.32. The planning application is supported by a Transport Statement and Construction Traffic Management Plan which assesses the overall impact of the Development on the local highway network and recommends suitable traffic and construction management proposals to limit the overall impact of the Development on the surrounding highway network. The salient points of these documents are discussed in greater detail below.

Access

Northern Parcel Access

7.33. The northern parcel fronts onto Bradmore Road to the east. Bradmore Road is a single carriageway road, with the national speed limit applicable (60mph). Bradmore Road has no pedestrian infrastructure or street lighting in the vicinity of the Site. Bradmore Road connects to Main Road to the south east and to Wysall Road/ Pendock Lane to the north west which in turn connects to the A60.

7.34. It is proposed to utilise a new vehicular access from Bradmore Road to access the northern parcel of the site. The proposed access is located circa 70 metres south of the existing access to Lodge Farm. The utilisation of this new access means that vehicular movements associated with the Development will remain segregated from the PROW and existing farm track which runs along the access road to Lodge Farm.

7.35. The proposed access has been designed to be able to accommodate the largest vehicle expected to access the site, a 16.5m articulated lorry. A swept path analysis is provided within the supporting Transport Statement showing the entry and egress of a 16.5m articulated lorry from the northern parcel's site access can be achieved.

7.36. The national speed limit applies to the section of Bradmore Road that fronts the northern parcel's site access. A 60 miles per hour speed limit equates to a required visibility of 215 metres in each direction. Speed surveys have been conducted between the 20th May 2023 to 26th May 2023 along Bradmore Road in the form of an Automatic Traffic Counter (ATC) survey.

7.37. A 7 day 85th percentile speed of 43.5 miles per hour northbound and a 7 day 85th percentile speed of 44.8 miles per hour southbound. This equates to 118m northbound and 123m southbound of visibility. Appropriate visibility splay drawings are provided within the supporting Transport Statement demonstrating that the Site can achieve the required visibility in both directions from the proposed site access off Bradmore Road.

Southern Parcel Site Access

7.38. The southern parcel fronts onto Wysall Road to the South. Wysall Road is a single carriageway road with one lane in each direction. The national speed limit applies to Wysall Road (60mph). Wysall Road has no pedestrian infrastructure or street lighting in the vicinity of the Site. Wysall Road connects to the A60 to the west and to the east Wysall Road becomes Costock Road, Main Street, Keyworth Road and finally Wyasll Lane.

7.39. It is proposed to utilise an existing gated field access off Wysall Road for vehicular traffic to reach the southern parcel. This access will be suitably upgraded and widened to the east to accommodate the largest vehicle expected to access the site, a 16.5m articulated lorry. A swept path analysis showing the entry and egress of a 16.5m articulated lorry from the southern parcel's site access is provided within the supporting Transport Statement.

7.40. The national speed limit applies to the section of Wysall Road that fronts the southern parcels site access. A 60 miles per hour speed limit equates to a required visibility of 215 metres in each direction. Similarly to the northern parcel access, the supporting Transport Statement provide appropriate visibility splay drawings demonstrating that the Site can achieve the required visibility in both directions from the proposed site access off Wysall Road.

7.41. Within the Southern Parcel, the existing agricultural access track and bridge that currently enables access into the main field enclosures north of the brook will be appropriately upgraded to accommodate the operational and temporary construction traffic. The existing bridge will be reinforced with an over spanning structure to ensure the loading of construction vehicles can be accommodated.

Internal Access Track, Bridge and Turning Area

7.42. The Site will have an internal access track network to allow both operational and construction vehicles to reach all areas within the Site, this access track will measure a width of 4m and be formed of bound material for the first 10 metres to act to avoid the traffic of mud onto the local highway network. The access track will be wider at corners to ensure that HGVs can negotiate all corners. Additionally, wheel washing facilities will be provided at the Site access to further avoid the traffic of mud onto the local highway network.

7.43. A swept path analysis of a 16.5m articulated vehicle turning within the Site each parcel has been undertaken to demonstrate that construction vehicles can both enter and leave the site onto the public highway in a forward gear. The turning area will be formed of aggregate. The swept path analysis of this manoeuvre is provided within the supporting Transport Statement.

7.44. Additionally, a passing bay will be provided for both parcels to allow vehicles up to 16.5m to pass each other.

Construction Traffic Routing

7.45. As identified in Section 5 above, the proposed construction traffic routing has been devised to ensure that no vehicular traffic will be route through the settlement of Wysall, with separate routing instructions provided for each of the two site parcels.

7.46. For the Northern Parcel, construction traffic will be instructed to arrive at the site via the A60 south exit connecting with the A52, through Ruddington, Bradmore until the Loughborough Road and Pendock Lane junction is reached. Construction Vehicles accessing the Northern Parcel will then turn left onto Pendock Lane which becomes Wysall Road and then Bradmore Road until the access to the Northern Parcel is reached.

7.47. For the Southern Parcel, construction traffic will similarly be instructed to take the A60 south exit off the roundabout connecting with the A52, through Ruddington, Bradmore and Bunny until the junction at Costock is reached. Construction vehicles will then turn left onto Wysall Road and travel east until the southern parcel access is reached.

7.48. Vehicles exiting the site parcels will be instructed to utilise the inverse of the construction routes described above.

7.49. Temporary signage will be erected in the vicinity of the Site accesses on Wysall Road and the Bradmore Road during the construction phase to indicate that heavy construction vehicles are turning. If considered necessary, temporary traffic lights and / or banksmen can be deployed to regulate traffic as and when required at the eastern site access, halting traffic if necessary and guiding the HGVs into the site. Banksmen will not direct general traffic but will indicate to heavy and large construction vehicles when it is appropriate for them to enter and leave the Site. HGVs will only be permitted to leave the Site when the highway is clear of traffic.

7.50. HGVs in the construction phase will only access the site via the designated construction route identified in the CTMP. Drivers will be informed of the route prior to departing for the site and will be advised not to use Sat-Nav.

7.51. Working hours for construction staff are proposed to be Monday to Friday between 08:00 and 18:00, and Saturdays between 08:00 and 13:00. However, at this stage it is envisaged there will be some flexibility in working hours to suit fluctuations within the construction period due to supply and delivery constraints.

7.52. As advised in the applicant's pre-application advice received from Nottinghamshire County Council (NCC), the northern parcels construction access route would need suitable mitigation to ensure that HGV's can route to the Site. A review of where a 16.5m HGV and a car can pass along Pendock Lane/Wysall Road/Bradmore Road has been undertaken based on OS Mapping. This review found that an HGV and a Car can pass on Pendock Lane, however there are sections of Wysall Road and Bradmore Road where an HGV and car cannot pass with the roads current width. It is proposed to install 4 temporary passing places along the access route. The proposed passing places will also allow an HGV to pass an HGV. Full details of the design and proposed locations of the passing places can be viewed within the accompanying Transport Statement submitted in support of this application. As set out above in section 5, the proposed passing places will remain in place following the completion of development to improve the ability of HGV traffic currently using the road to pass when encountering HGVs along the narrowest sections of the road.

Cumulative Highways Impacts

7.53. It is acknowledged that there are a number of other similar developments and proposals within the surrounding area of the site which could give rise to the potential for cumulative highways impacts if construction is scheduled concurrently with the Development. In order minimise the potential cumulative impact of construction traffic the site contractor will make reasonable endeavours to coordinate deliveries with these construction sites, particularly when coordinating construction traffic associated with the delivery of the Southern Parcel. The following developments / development proposals are identified in the area surrounding the site as potential sensitive to cumulative highway impacts:

- An EIA screening request has been submitted to RBC for the development of 49.9mw solar array and associated infrastructure on land surrounding Wysall Lane (to the south of the southern parcel).

- Planning Permission has been granted on the 16th February 2023 (Ref: 22/00303/FUL) for the Construction of a solar farm and battery stations together with all associated works, equipment and necessary infrastructure, together with the formation of a new vehicular access onto Bunny Hill (A60).

Proposed Mitigation Works

7.54. A comprehensive package of mitigation measures will be implemented to minimise the effects of construction works on the local highway network. A summary of the proposed mitigation measures is provided below, however, for further details on the full prescribed mitigations measure please refer to the Construction Traffic Management Plan submitted in support of the application:

- The arrival and departure of HGVs at the site will be strictly managed by the Site Manager. The Contractor will ensure, where practicable, that no HGV deliveries will occur during the weekday peak hours (08:00 – 09:00 & 17:00 – 18:00).

- Bunny C of E Primary School is located off the A60 which forms part of the proposed construction vehicle access route to the southern parcel. Where practicable the contractor will ensure, that no HGV deliveries occur during school drop off / pick up time (08:00 09:00 & 15:00 – 16:00) during school term time.

- The Contractor will be expected to manage an even distribution of deliveries throughout the day to avoid 'bunching' by initiating a booking in system, as detailed within Section 3. Stacking of vehicles on the public highway will not be permitted.

- The Contractor will undertake several activities to minimise the number and length of journeys made in relation to the construction work. These would include:

    - Providing details of local public transport services;

    - Encouraging construction staff to lift share;

    - Making reasonable endeavours to use local suppliers for materials where this is possible; and

    - Making reasonable endeavours to coordinate material supplies with other construction sites in order to minimise the number of delivery lorries on the local road network.

- Construction signage will be placed at strategic locations along the routes for vehicles approaching the site, in accordance with The Traffic Signs Manual: Chapter 8 (2020). All signs installed as part of the construction phase will be temporary and placed outside of visibility splays.

- An information pack will be distributed to all suppliers involved in the transport of materials and plant to and from the Site. The pack will be a convenient size so it can be stored in a truck cab. The pack will include key information on delivery routes and clearly set out procedures for dealing with emergencies and disciplinary measures for non-compliance.

- It will be communicated to the Contractor and supply chain that they are not permitted to wait on the public highway outside of designated areas. The Contractor and supply chain will be advised in advance of the times when deliveries can be received and be required to meet those delivery windows.

- Staff will have telecommunication equipment to enable them to communicate with delivery drivers. Drivers will be required to call ahead to ensure the Site is ready to receive them in advance of their arrival to avoid the risk of queuing back on to the public highway.

- The HGV movements associated with the construction work will be continuously monitored through the use of a booking system. This will require the Contractor to keep an up-to-date record of deliveries to, and exports from the Site. The information will be provided to RBC within 14 days of a request from RBC to review it.

- Contact numbers will be on display at the Site entrance for the general public to raise any concerns with the Developer directly (Table 1.1). All enquiries will be recorded and responded to within five working days if contact details are provided. The enquirer

will receive a written response detailing what action has been taken, if necessary. These records can be provided to RBC as required.

- A compound area for contractors set up on-site, including appropriate parking spaces. Contractors and visitors will be advised that parking facilities will be provided on-site in advance of visits and that they should not park outside of designated parking provisions;
- The site will be secured at all times with appropriate security fencing;
- There will be a requirement for engines to be switched off when not in use;
- If ground conditions dictate, wheel washing facilities will be provided in the form of a portable automated high-pressure washer with motion sensors to conserve water. All construction vehicles will therefore have to exit through the wheel wash area and as such will reduce the spread of mud and dirt onto the local highway network;
- Spraying of internal areas with water supplied as and when conditions dictate to prevent dust accumulation; and
- Vehicles carrying any loads that have a risk of shedding materials in transit will be sheeted as appropriate.

Public Right of Way Management

7.55. There are no Public Rights of Way (PRoW) within the southern parcel. There are two public rights of way within the northern parcel. The PRoW's will remain operational through the construction period and will have signs at either end to advise users of the construction works. During both the construction and operational phase, the PRoW will be fenced off to ensure users safety. A qualified Banksman will walk alongside construction vehicles through the Site, when a PROW crossing is reached, the qualified banksman will check there are no PROW users then open the gate to allow the construction vehicle to continue.

Vehicle Trip Generation

7.56. From experience of similar developments elsewhere in the UK, it is anticipated that the development will take approximately six months to complete. This includes the preparation of the site, erection of security fencing, assembly and erection of the PV strings, installation of battery containers and substation / grid connection.

7.57. An average of circa 60 construction workers are forecast to be on site at peak times during the construction period. A temporary construction compound will be provided within each of the site parcels for storage, parking for contractors and the turning of HGVs. Parking will therefore be contained within the site.

7.58. The location of where staff will travel from is unknown at this stage as it will depend on the appointed contractor. However, it is anticipated at this stage that the non-local workforce will stay at local accommodation and general operatives will be transported to the site by minibuses to minimise the impact on the local highway network.

7.59. The construction period will include the use of HGVs to bring equipment onto the site and this will be strictly managed to ensure that vehicle movement is controlled and kept to a minimum.

7.60. It is anticipated a maximum of two Abnormal Indivisible Loads may be required associated with transporting a crane to the BESS site. All other equipment, materials and plant will be delivered by vehicles no large than a 16.5m articulated HGV.

7.61. The route identified above for construction traffic means that large vehicles will utilise A-roads as far as possible, with impacts on local residential areas minimised as far as possible.

7.62. The following heavy goods vehicles movements could be associated with the construction period for each site parcel:

Table 7.1 Heavy Goods Vehicles Movements – Northern Parcel

Components / Trip Purpose	Vehicle Type	Total number of vehicles accessing	Total Number of Two-Way Vehicle
Site Set Up and Ongoing Management (including fencing, water/waste deliveries, site huts etc)	Various sizes with around 70% being 8-10m rigids and the remaining 30% being 16.5m articulated vehicle	71	142
Solar Panels	16.5m articulated vehicle	91	182
Mounting Frames	16.5m articulated vehicle	60	120
Aggregate (Access Track)	32 tonne tipper lorry	530	1060
Aggregate (Inverter Bases)	32 tonne tipper lorry	20	40
Inverters	16.5m articulated HGV	17	34
Total		**764**	**1578**

Table 7.2 Heavy Goods Vehicles Movements – Southern Parcel

Components / Trip Purpose	Vehicle Type	Total number of vehicles accessing	Total Number of Two-Way Vehicle
Site Set Up and Ongoing Management (including fencing, water/waste deliveries, site huts etc)	Various sizes with around 70% being 8-10m rigids and the remaining 30% being 16.5m articulated vehicle	71	142
Solar Panels	16.5m articulated vehicle	44	88
Mounting Frames	16.5m articulated vehicle	25	50
Aggregate (Access Track)	32 tonne tipper lorry	605	1210
Aggregate (Substation / Transformer / Inverter Bases)	32 tonne tipper lorry	400	800
Substation / Transformer / Batteries / Inverters	16.5m articulated HGV	112	224
Total		**1257**	**2514**

7.63. As set out above, a total of circa 4,092 two-way vehicle movements are predicted to be made during the full construction phase, 1,578 for the Northern Parcel and 2,514 at the Southern Parcel (excluding construction worker trips to / from the site). This will equate to an average of twelve HGV two-way trips per day associated with the Northern Parcel (amounting to six HGVs accessing the parcel per day) and an average of 19 HGV two-way trips per day associated with the Southern Parcel (amounting to 9.5 HGV accessing the parcel per day) during the construction period, subject to some fluctuation depending on the daily delivery schedule.

7.64. It is anticipated that for initial site set up for the first 2-3 weeks of construction that two-way HGV deliveries will be higher than the above stated two-way deliveries per day during the 6 month construction period.

7.65. Given the temporary nature of the construction traffic and the negligible percentage increase in traffic and HGV volumes proposed it is considered that the traffic associated with the site will not have an undue effect on the safety and operation of the local highway network.

7.66. There will be a requirement for some larger items to be brought in on vehicles that will be classed as an Abnormal Indivisible Load (AIL), namely for the crane for positioning the battery units within the Southern Parcel but this would total a maximum of two AIL trips (one inbound

and one outbound). These abnormal loads will be managed on a case-by-case basis by the appointed haulier and kept to a minimum where possible. This will include notifying the relevant authorities of the proposed vehicles, routing and schedule, details of any temporary mitigation such as road closures and the provision of escort vehicles. Abnormal loads will use the same construction route as HGVs routing to the Southern Parcel.

7.67. Overall, the level of traffic during the temporary six-month construction phase is not considered to be material and it is considered that this will not have a detrimental impact on the safety or operation of the local or strategic highway network, in accordance with Policy 1 and Policy 16 of the RBC LPP2.

Operational Phase

7.68. The same accesses will be used during the operational phase as the construction phase. It is anticipated that the site will operate predominately by remote access and is only visited on an occasional basis with minimal effect on the surrounding local network, it is anticipated that there could be 12 LGVs accessing the site per month, equating to up to 24 two-way LGV trips per month in the operational phase. These vehicles are of a size already using the local highway network and the additional visits to the site will be infrequent once the energy park is operational. Therefore, the access points are considered suitable for the operational period. Whilst the contractor's compounds will have been removed, space will remain within the site for vehicles to turn around to ensure that reversing will not occur onto the adjacent highway.

7.69. Operational visits will be undertaken by maintenance staff in vehicles which are unlikely to be larger than 7.5t vans. HGVs are not anticipated to be required during the operational phase, unless in the event of a replacement of a major component.

7.70. There will be sufficient space within the site to allow for operational vehicles and service vehicles to enter, manoeuvre, park and subsequently exit the site in forward gear.

Decommissioning Phase

7.71. The activities involved in the decommissioning process for the Development are not yet known in detail. There is expected to be some traffic movements associated with the removal (and recycling, as appropriate) of material arising from removal. However, vehicle numbers are not expected to be any higher than those experienced during the construction period.

Landscape and Visual Considerations

7.72. In order to assess the impact of the Development on the local landscape character and surrounding visual receptors, a detailed Landscape and Visual Impact Assessment (LVIA) has been produced by Pegasus Group and is submitted as part of this application. The LVIA assesses the impact of the Development both during construction and during operation on the landscape character and on key local views, and has been used to inform a detailed landscape mitigation strategy. The salient points of the LVIA are discussed below.

7.73. The site's character would change from open agricultural land to one that contains energy infrastructure: solar modules, battery modules, ancillary infrastructure, substation compound etc, and the magnitude of change would be high, with effects major adverse. Such effects would be limited to the site itself, and not the surrounding landscape. The surrounding landscape would not be subject to any direct physical change. The Development fits well into

the existing field pattern and would retain and enhance the boundary hedgerows through gapping up and planting hedgerow trees. This would exert positive influence over the local landscape with trees / woodlands being one of its characteristic elements.

7.74. The presence of cumulative solar schemes on Land To North East Of Highfields Farm, Bunny Hill, Costock, Nottinghamshire (application reference no. 22/00303/FUL) and OS Field 8561, Rear Of Rushcliffe Grove, East Leake, Nottinghamshire (application reference no. 21/00703/FUL) have to be acknowledged as both schemes have been approved and now form part of the existing baseline. In other words, the host Draft Policy Zone NW01 'Gotham and West Leake Wooded Hills and Scarps' is best described as open countryside and still largely rural, in line with the published landscape character assessment, with localised influence of solar energy developments.

7.75. It is accepted that the Development would reinforce the presence of solar farm development in the local landscape. Therefore, the landscape pattern / land cover pattern would be locally changed, and this would affect the landscape associated with the site, and the adjacent cumulative site on Land To North East Of Highfields Farm. The presence of the cumulative scheme at Rear Of Rushcliffe Grove, East Leake would be inconsequential given its small scale and context.

7.76. With regard to the remaining aspects of the local landscape, referenced in the Council's published Landscape Sensitivity Study, the Development when judged in the contexts of the approved cumulative sites, would exert limited influence. The landform would continue to be evident with the low lying profile of the panels and their uniform height reflecting the local variation in levels and gently undulating topography.

7.77. The Development, however, would be located within a landscape that benefits from a sense of enclosure provided by the landform and blocks of woodland. The site's western edge coincides with a localised change in levels with the western perimeter hedgerow - associated with the northern parcel, blocking any views in and out towards the western part of the study area. This visual and physical segregation is reinforced by the woodlands that mark the site's western edge. Collectively, these features would ensure that here is a degree of physical separation and reduced inter-visibility between the Development and the adjacent cumulative site, and the two schemes would not exert any evident influence over the perceptual and sensory aspect of the local landscape. Old Wood and dropping landform encloses the site to the north, blocking any views in and out, and preventing any cumulative landscape character effects with the approved scheme on Land At Fields Farm, Asher Lane, Ruddington (application reference no. 21/00703/FUL). To the east the contours rise again with the vegetation along Bradmore Road preventing any inter-visibility with the landscape to the north east and east.

7.78. Landscape mitigation planting is proposed and has been purposely devised to reduce the perception of change and screen the Development. This, with time, would further limit the influence of the site itself and the immediate environs. The surrounding landscape would not be physically affected. The introduced small blocks of woodland and copses would be wholly reflective of the landscape pattern, locally, where blocks of woodland are one of its key characteristics. They would help compartmentalise the Development physically and visually, whilst strengthening the habitat connectivity and reinforcing the wooded character of the local area.

7.79. It is accepted that the low lying valley of Kingston Brook allows for greater inter-visibility with the landscape to the south and this constrained was one of the main drivers for the proposed willow planting along the section of the Brook within the south of the site and the woodland and copse planting throughout the southern Parcel. The introduced hedgerow trees also aim to link, visual and physically, the existing woodlands in order to create strong landscape framework around the site's perimeter and high sense of enclosure. The proposed layout has been purposely reduced to allow for substantial areas of woodland and copse planting.

7.80. With the Development being designed to form two small scale parcels of development, the sense of scale would remain unaffected with the proposals representing a modest addition to the receiving landscape. The proposals would have some limited degree of change upon the perception of relative tranquilly due to the presence of this new built form, however, its visibility would be very limited. Therefore, any influence over the landscape character would be very localised and largely perceived from the closest highway and PRoWs that may offer views of parts of the Development. The perception of the wider landscape would not be redefined or altered to any evident degree given the limited inter-visibility with the site, its low lying character, and low profile of the Development.

7.81. The Development would retain the existing field pattern, being respectful of the field boundaries, and would not detract from any landscape or manmade features, that could be regarded as local landmarks, due to the vegetative screening around the site and limited inter-visibility across the local area.

7.82. With its low profile, the Development would also not affect the perception of skylines, which would continue to be dominated by woodlands, hedgerows, and hedgerow trees, with occasional built form in the nearby villages.

7.83. The Development would be largely screened in the majority of the local views, including close to medium range views from the east and the settlement of Wysall, and from the west. The scenic quality would be altered to a low degree with the open undeveloped countryside containing solar energy development but continuing to be primarily defined by its field pattern, boundary hedgerows, and blocks of woodland dispersed across the immediate area and compartmentalising the landscape.

7.84. Given the extent of the host Draft Policy Zone NW01 'Gotham and West Leake Wooded Hills and Scarps', and considering the presence of the approved scheme on Land To North East Of Highfields Farm, Bunny Hill, Costock, Nottinghamshire (application reference no. 22/00303/FUL), it is considered that the character of this landscape would change to a moderate degree resulting in moderate adverse effects. It is important to reiterate that such effects would be temporary, and the proposed mitigation planting would help reduce this degree of change to low with the residual effects judged to be minor adverse at Year 15.

7.85. On balance, it is considered that the Development, would bring about a low magnitude of change, resulting in minor adverse effects upon the wider character of the host landscape - i.e., its central and western parts which are physically and visually isolated from the site.

7.86. The majority of the identified and analysed visual receptors have been assessed as subject to either negligible neutral effects or no effects at all. There would be some highly localised areas within the local landscape, such as along the PRoWs within the site where views of the Development would inevitably be open, direct, and very close range, particularly in winter months. Such views, however, are not necessarily representative of the overall very limited visibility of the Development.

7.87. The supporting LVIA identifies and provides a detailed analysis of 8 viewpoints from key receptors surrounding the site. The assessment concludes that Viewpoint 3, Viewpoint 5, Viewpoint 7, and Viewpoint 8 would be subject to major adverse effects at Year 1 in winter views only. Such effects are generally expected to reduce to moderate adverse to negligible at Year 15. The receptors at Viewpoint 8, within the site, have been assessed as subject to moderate adverse effects at Year 15, given the proposed maturing structural vegetation.

7.88. In terms of road users, only those traveling along Wysall Road, which pass the site's southern parcel, would experience direct and relatively close range views resulting in major adverse effects along approx. 550m long section of the road. Similarly, those travelling along the northern end of Rempstone Lane, as they approach the junction with Wysall Road, have been assessed as subject to major adverse effects at Year 1.

7.89. Views of the Development from PRoWs in the surrounding landscape vary to a considerable degree. The overwhelming majority of the PRoWs within the immediate landscape and around Wysall, are free from any theoretical visibly of the Development or are enclosed with views restricted and effects inconsequential and negligible. The receptors travelling along the PRoWs across the site's Northern Parcel have been judged to experience major adverse effects during the first 5 years post construction, due to the very close range and elevated nature of such views, however any effects would reduce over time as the proposed strategic landscape planting matures. The PRoW users travelling across the elevated landscape to the south of the site along Public Footpath Costock FP4 and Public Footpath Rempstone FP8 have been assessed as subject to negligible effects, generally speaking. Localised moderate adverse effects have been established where the visibility of the Development has been judged to increase.

7.90. In conclusion, the Development has been considered in the context of the relevant planning policies and published landscape character assessments, and has been subject to a thorough on-site assessment, and iterative design process with regard the extent of the developable areas and landscaping proposals. The supporting LVIA concludes that the Development can be effectively integrated and assimilated into the surrounding landscape with the adverse effects highly localised to the immediate environs only, and being temporary with the proposed mitigation planting substantially reducing the scale of adverse effects to a negligible level.

7.91. The introduced built-in mitigation measures, such as offset from the site boundaries and considerable amount of woodland and tree planting assist in reducing the adverse effects and allowing the development to be assimilated into the receiving environment without any residual undue harm.

7.92. The Development is therefore considered to be acceptable and in accordance with the provisions of Policies 2, 10 and 16 of the adopted LPP1 and Policies 1, 16 and 37 of the LPP2.

Residential Amenity

Visual Amenity

7.93. The supporting LVIA includes a residential visual amenity assessment which provide a concise yet robust assessment of the effects of the Development on surrounding residential receptors. The key findings of the residential visual amenity assessment are discussed below.

7.94. As set out in Section 4 of this statement, there are a number for residential properties in the vicinity of the site and some of them are visible or identifiable from within the site. It does not follow, however, that the Development would be visible or evident. In the majority of cases views would be heavily interrupted by the site's boundary vegetation, even in winter views. In addition, the identified properties are often only visible from one specific field, rather than the site as a whole. Therefore, where views would be gained, the surrounding receptors would only perceive a small part of the overall development thus the visual influence of the Development would be very limited.

7.95. Based on the views gained from within the site the following residential receptors have been considered relevant:

- The Elms and Lodge Farm / Field View accessible from Bradmore Road.
- Five Oaks Stables and Scotland Hill Farm along Wysall Road / Costock Road.

7.96. The LVIA concludes that the residents at The Elms are likely to be subject to negligible effects given the screening provided by the site's boundary hedgerow and the nearby built form. With regard to the residents at Lodge Farm / Field View, the dwelling is enclosed by its perimeter garden and farm buildings. As part of the design iteration, an area of solar modules located south of the dwelling has been removed - now utilised as skylark mitigation plot, with a new hedgerow and hedgerow trees added to enclose the curtilage of the dwelling, and limit any adverse effects. The degree of change and effects are predicted to be negligible. In terms of the residential receptors at Five Oaks Stables and Scotland Hill Farm, given the views gained from the site, distance, and the filtering effect of the intervening trees, the degree of change is considered to be low at most with the effects moderate adverse in winter views at Year 1. The copse and woodland planting proposed along the site's southern edge aims to reduce and mitigate any adverse effects, and the residual effects are predicted to be negligible.

7.97. Overall the Development is not expected to result in any significant adverse impacts on surrounding residential receptors in terms of visual amenity, and where potential impacts are assessed as being likely, any harm will be appropriately mitigated through the use of appropriate landscape mitigation. The Development is therefore considered to be consistent with the visual amenity provisions of Policies 1 and 16 of the adopted LPP2.

Noise Impacts

7.98. Potential noise effects during construction would be temporary and reversible and works could be adequately controlled by limited working hours set out in appropriately worded planning conditions, or a Construction Environmental Management Plan.

7.99. It is generally accepted that solar panels themselves do not make any significant noise when generating electricity, although ancillary equipment, such as invertors, battery storage containers, transformers or substations may produce noise. This is reflected in Councils Planning Guidance for Solar Farm Development.

7.100. The Development will emit a low level of noise whilst operational. The highest noise emitting equipment is associated with primary 132 kV transformers, 33kV transformers, auxillary transformers, battery units and inverters within the Southern Parcel. The proposed equipment associated with the operation of the solar farm in the Northern Parcel is largely

silent, however, low levels of noise may be created by the centralised inverter units dispersed through the parcel.

7.101. Due to the operational nature of the Development the level of noise emitted by the Development will vary depending on when the batteries are charging, discharging and when the air conditioning units are in operation and how much generation there is from the solar panels and therefore how much load there is on the inverters.

7.102. The planning application is supported by a detailed Noise Impact Assessment which assesses the operational noise impacts of the development on the nearest noise sensitive receptors and is supported by a baseline noise survey conducted between 28th and 31st March 2023. The assessment models the noise impacts associated with the proposed operating equipment and makes appropriate recommendations if required to ensure the facility meets acceptable noise limits.

7.103. As identified above in this statement, a cumulative solar and battery storage development known as Highfields Solar Farm was consented by the Council in February 2023, located immediately west of the Development.

7.104. The planning application for Highfields Solar Farm did not include a Noise Impact Assessment and the Decision Notice for Highfields Solar farm does not specify any noise limits, although Condition 23 of the consent does require the applicant to submit the final specifications and position of any noise-emitting plant prior to construction, supported by a full BS 4142 assessment, should it be deemed necessary. At the time of preparing the supporting Noise Impact Assessment, Condition 23 is yet to be discharged, therefore a detailed calculation of cumulative effects cannot be undertaken.

7.105. Given the lack of any detailed noise modelling for Highfields Solar Farm, the submitted Noise Impact Assessment provides a qualitative consideration of the potential cumulative effects, in the interest of completeness.

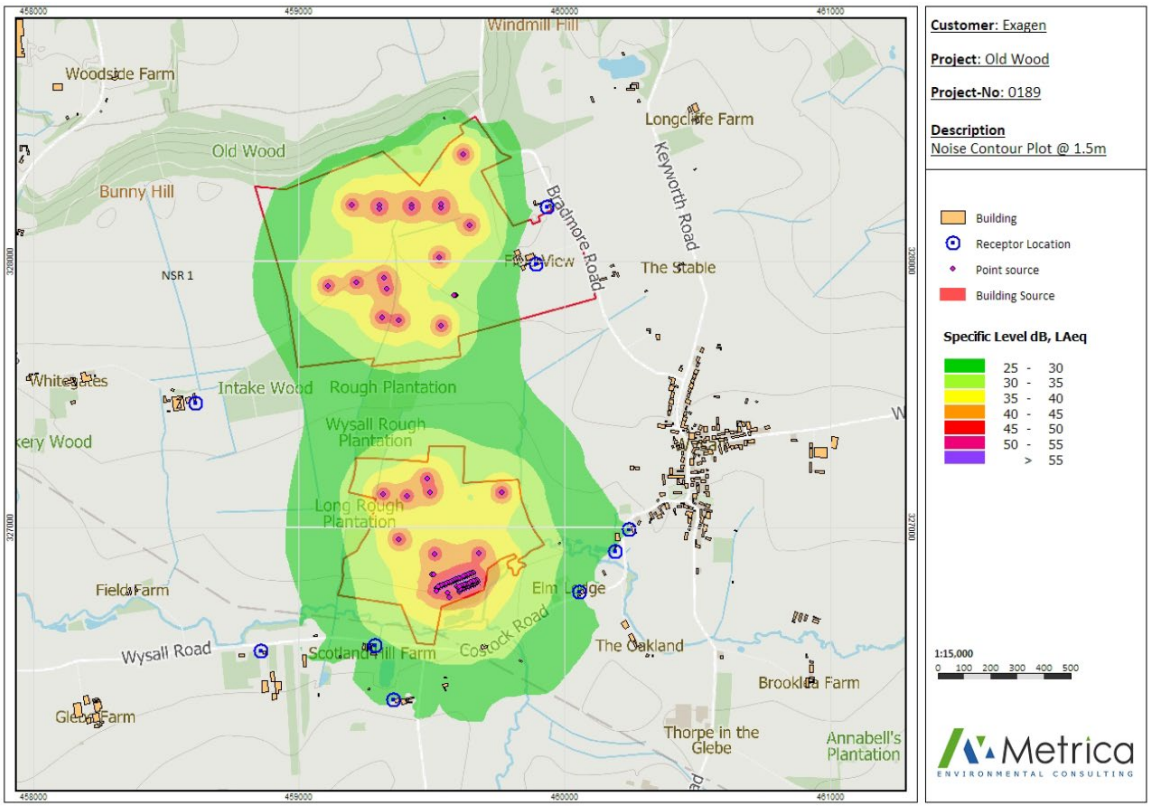
7.106. Given the position of Highfields Solar Farm relative to the Development, only two nearby noise sensitive receptors are considered to have the potential to experience cumulative effects, at Nouvelle Farm south west of the site and at Highfields to the west of the site. Predicted noise rating levels due to the Development in isolation at these receptors are at least 4 dB below the level of background noise. On the assumption that Highfields Solar Farm was to result in a similar Rating level at the same receptors, the cumulative noise level of both developments operating simultaneously would be 3 dB greater than the Development in isolation; this would result in cumulative levels being 1 dB below the level of background noise. On this basis, the level of impact would remain 'Low' at these receptors in terms of BS4142, and the cumulative effects remain complaint with the Environmental Health Officer's recommended noise limit by a margin of 6 dB.

Receptor	Specific Noise Level, dB(A)	Rating Level, dB(A)	Daytime Background Noise Level, dB, L_{A90}		Difference, dB	
			Daytime	Night-time	Daytime	Night-time
NSR 1	29	32	38	29	-6	3
NSR 2	26	29	38	29	-10	-1
NSR 3	29	32	38	29	-6	3
NSR 4	25	28	38	29	-10	-1
NSR 5	25	28	38	29	-10	-1
NSR 6	21	24	38	31	-14	-7
NSR 7	24	27	38	31	-11	-4
NSR 8	21	24	38	31	-14	-7
NSR 9	23	26	38	29	-12	-3

Table: Assessment of Noise Impacts

7.107. It is important to note that the results of the Noise Impact Assessment present a worst-case scenario where it is presumed that all of the equipment is at 100% operation all of the time, whilst in reality this will not be the case. Due to the operating nature of the Development, it is likely that any such periods of maximum noise output would be infrequent and would not be for prolonged periods of time. In addition to this, the noise modelling within the supporting Noise Assessment incorporates conservative assumptions and applies tonal penalties to acoustic features on the site. The conservative approach taken is indicative that the modelled noise rating levels represent an over-prediction of the level of noise impact of the development in practice.

7.108. Overall, it has been found that Rating Levels due to noise from the Development, either in isolation or in combination with the consented Highfields Solar Farm would not exceed the Council's recommended noise limit, and would be below the level of Adverse impact in terms of BS4142 criteria. The Development is therefore considered to be acceptable and in accordance with Policies 1, 16 and 39 of the adopted LPP2.



Noise Modelling of Site

Glint and Glare

7.109. The Planning Application is supported by a detailed Glint and Glare Assessment which assesses any potential Glint and Glare Impacts arising from the proposed Solar PV panels on surrounding receptors. The key finding of the report are summarised below.

Road Users

The supporting assessment identifies that solar reflections are geometrically possible towards sections of the A60, Wysall Road / Costock Road / Main Street / Keyworth Road and Widerpool Road. However, screening in the form of and existing vegetation and/or buildings are predicted to significantly obstruct views of reflecting panels, and therefore no impact is predicted, and no mitigation is required.

Residential Receptors

7.110. It is identified that solar reflections are geometrically possible towards 41 of 44 surrounding dwellings. For 40 of these dwellings, screening in the form of proposed and existing vegetation, buildings and/or intervening terrain are predicted to obstruct views of reflecting panels, and therefore no impact is predicted, and no mitigation is required.

7.111. For one dwelling, solar reflections from the Development and the consented adjacent solar development are predicted to be experienced. Screening in the form of both proposed and existing vegetation is predicted to obscure all views of reflecting panels except for a small

segment. A low impact is predicted, but due to the low duration of glare in any given day, no mitigation is recommended.

Aviation Receptors

East Midlands Airport

7.112. The supporting Glint and Glare Assessment has identified that solar reflections are geometrically possible towards the Air Traffic Control (ATC) Tower at East Midlands Airport. Relevant mitigating factors include:

- The distance between the ATC Tower and the Development is 14km, this will significantly reduce impact on observers in ATC Tower.
- The modelling has shown that solar reflections are possible for a maximum of 15 minutes on any given day.
- The modelling has shown that solar reflections will occur in the early hours of the morning, as such the reflections will coincide with direct sunlight. ATC personnel will already be experiencing affects from the consented solar development, which will not be exacerbated by the Development.

7.113. Solar reflections from the Development towards aircraft along the 10NM approach / departure paths are geometrically possible with intensities no greater than 'potential for temporary after-image'. It is judged that solar reflections of having a 'potential for temporary after-image' along the 10NM approach / departure path for 27 can be operationally accommodated.

7.114. Solar reflections from the Development towards the general aviation visual circuits will have intensities no greater than 'low potential for temporary after-image'. Considering the associated guidance for 2-mile approach paths and industry best practice, this level of glare is deemed acceptable.

7.115. Solar reflections from the Development towards the commercial aviation visual circuits will have intensities no greater than 'potential for temporary after-image'. It is judged that solar reflections of having a 'potential for temporary after-image' along the commercial aviation visual circuits can be operationally accommodated without further mitigation.

7.116. Solar reflections with intensities no greater than 'low potential for temporary after-image' are predicted towards sections of two visual flight routes. Considering the associated guidance for 2-mile approach paths and industry best practice, this level of glare is deemed acceptable.

7.117. The supporting Glint and Glare Assessment identifies that solar reflections are predicted towards all helicopter approach paths. Solar reflections with glare intensities no greater than 'low potential for temporary after-image' will be experienced towards these helicopter approaches. Considering the associated guidance and industry best practice for 2-mile approach paths, which states that this level of glare is acceptable, it can be concluded that this level of glare is also acceptable for these approach paths. A low impact is predicted for these approaches, and no mitigation is required.

7.118. The Glint and Glare modelling predicts glare with a 'low potential for temporary after-image' towards a section of the DTY R006 ILS approach towards runway 27.Overall it is considered that the impact of this glare can be accommodated without the need for mitigation. The impacts on pilots will not be significantly increased compared to the adjacent consented site, which was accepted by East Midlands Airport.

7.119. Pre-application consultation as undertaken with East Midlands Airport in the summer of 2023 on the basis of the submitted Glint and Glare Assessment, and a final response was received on the 20th September 2023 from the Group Aerodrome Safeguarding Technical Officer which stated *"We have been receiving responses from the airport community as to their views with regards to the proposed level of glint and Glare. The good news is that they've deemed the level of proposed glint and glare as likely being operationally acceptable. Therefore, should these proposals reach full planning stage we are unlikely to take concern with the proposed glint and glare assessment."*

7.120. Nottingham City Airport

Any solar reflections towards Nottingham City Airport, located 8km north-east of the Development, are predicted to be acceptable in accordance with the associated guidance. Intervening terrain will significantly obscure any solar reflections geometrically possible towards the ATC Tower. Any possible solar reflections would be outside a pilot's primary field-of-view for pilots on approach to runway. Glare intensities towards runway thresholds are predicted to be acceptable and no more than 'low potential for temporary after-image'. Therefore, no significant impacts are predicted upon aviation activity at Nottingham Airport.

Ecology & Biodiversity

7.121. This planning application is accompanied by an Ecological Impact Assessment (EcIA) undertaken by Clarkson and Woods. This Impact Assessment discusses the likely effects of the Development on the ecology of the Site using information collected during a suite of baseline surveys conducted by Clarkson and Woods during 2022/2023. These surveys comprised:

- Extended Phase 1 Habitat Survey – 28/01/2022
- Wintering Bird Scoping Survey (WBS) - 24/02/2022
- Further Wintering Bird Surveys - 14-15/12/2022, 18-19/01/2023 and 14/02/2023
- Breeding Birds Surveys (BBS) - 19-20/04/2022, 16-17/05/2022, 13-15/06/2022 and 11-12/07/2022
- Great Crested Newt (GCN) eDNA sampling – 07/06/2022 and 19/06/2022
- Watervole surveys of Kingston Brook - 24/04/2023 and 14/08/2023
- MoRPh survey of Kingston Brook - 27/09/2023.

7.122. The EcIA sets out the results of these surveys, identifies potential constraints associated with the Development, and provides recommendations for avoidance, mitigation and enhancement measures to reduce impacts on species or habitats which may arise as a result of the Development, and to provide a substantial net gain for biodiversity within the Site. The

pertinent parts of the EcIA are summarised below, however, please refer to the EcIA report for the detailed assessment of impacts and recommended mitigation measures.

Designated Sites for Nature Conservation

7.123. There is one Local Nature Reserve within 2km of the Site. Keyworth Meadow LNR has been designated for its flower-rich grassland, and additional wetland flora associated with the bordering brook. Ponds are present within this LNR and they have been found to support GCN.

7.124. Additionally, eight Local Wildlife Sites (LWS), one potential LWS and one Site of Importance Nature Conservation (SINC) were present within 2km of the Site. These were designated for a variety of reasons, including ancient woodland, species-rich grassland, species-rich hedgerow and an old gypsum mine supporting calcareous grassland.

7.125. No direct impacts on these designated sites are anticipated. However, it is possible that the Development could result in indirect negative impacts on these habitats through the deposition of construction materials or pollution (in the form of dust, sediments or contaminants) finding its way into adjacent waterbodies and surrounding land.

7.126. The construction phase of the Development will be temporary and short-term, with the majority of construction within the larger parcel involving poles being mounted into the ground without the need for any excavations. Excavations will be limited to tracks and a small number of inverter bases and battery storage units.

7.127. A Construction Environmental Management Plan focussed on ecology (CEMP – Ecology) will be prepared for the construction phase of the scheme, detailing measures protecting all habitats within and surrounding the Site, including the LNR, SINC, LWS and pLWS. The CEMP (Ecology) will include details of appropriate fencing to restrict access into key ecological areas, information on any timing/seasonal restrictions (for example, traffic movements during drought, dusty or particularly wet conditions), and measures including application of COSHH regulations, to prevent discharge of pollution to waterbodies, watercourses and sensitive neighbouring habitats. The CEMP (Ecology) will also prescribe measures to minimise dust deposition and traffic overrun on surrounding road verges, including ensuring loads leaving Site are securely covered.

7.128. If the Council are minded to approve the application, it is recommended that the proposed CEMP is secured through the use of an appropriately worded planning condition.

Habitats

7.129. The Northern Parcel is comprised of seven and a half arable fields, with winter wheat present at the time of the original walkover survey. Bunny Old Wood Site of Importance for Nature Conservation (SINC) lies directly adjacent to the northern boundary, and Intake Wood, Costock SINC lies adjacent to the boundary to the west. The Southern Parcel comprises four arable fields, one field of uncut modified grass, and one field to the south of the parcel of modified grassland heavily grazed by sheep. Several plantation woodland blocks are present along boundaries of both parcels. Wide arable margins are present both along the northern boundary of the Northern Parcel and the eastern and southern boundaries of the northern most field in the Southern Parcel.

7.130. As set out above, a CEMP (Ecology) will be prepared to detail how the habitats within and surrounding the Site should be protected during the construction phase. This will include measures to protect hedgerows, ponds, watercourses and woodland within and adjacent to the Site.

7.131. A Landscape and Environmental Management Plan (LEMP) will be prepared for the operational site that will cover how retained habitats and newly planted areas should be managed so as to maximise their biodiversity value and achieve the objectives of ecological mitigation and compensation. The LEMP should also set out any measures necessary to ensure protected species are appropriately accommodated within the operational site.

7.132. As per the CEMP, it is recommended that should the Council be minded to approve the application, that an LEMP is secured through the use of an appropriately worded planning condition.

Watercourses and Ditches

7.133. Kingston Brook runs through the southern most field of the Southern Parcel. Additionally, a wet ditch is present along the Southern Parcel's western boundary. A number of dry agricultural ditches were also found to be present throughout the hedgerow network of both parcels.

7.134. A new prefabricated bridge will be lowered over the brook and secured appropriately, allowing the crossing of heavy goods vehicles both during the construction phase, and throughout the operational life of the solar site. This will disturb the banks of the brook and result in a minor loss of bank top habitat and will potentially lead to increased run-off and physical damage caused by debris.

7.135. Kingston Brook will be protected from damage and accidental pollution / runoff during construction by maintaining an undeveloped, naturally vegetated no works buffer along the course of the feature apart from the proposed new crossing itself. The buffer will be demarcated by perimeter security fencing, temporary fencing or stock proof fencing installed at the commencement of construction, at least 10m from the banks of the brook. No other development is planned within Field 1 where the brook is situated.

7.136. Works compounds will not be sited within at least 20m of the brook or any ditches, and contingency measures for unforeseen incidents such as spillages will be set in place prior to the commencement of construction works. This will be prescribed as part of the CEMP (Ecology) to be secured through condition.

Hedgerows and Trees

7.137. A network of hedgerows is present throughout both parcels of the Site, with standard trees present in a low number of these features. Several hedgerows feature dry or wet ditches associated with them.

7.138. The Development will result in the minor loss of four small lengths of hedgerow: one stretch of 7m from species-rich 'H2' and another stretch of 5m from species-poor 'H4', both within the Northern Parcel, and one stretch of 15m from species-poor 'H1' and a final stretch of 2-3m from species-poor 'H2', both within the Southern Parcel. All other hedgerows are to remain intact, with existing field access points to be utilised. Any potential impacts upon protected species are considered in the relevant subheading in Section 3.5 below.

7.139. The small losses within Northern Parcel are to facilitate a new access junction into the northern Site parcel from Bradmore Road to the east. The 15m loss within 'H1' in the Southern Parcel is to facilitate the new access point into the southern parcel of the Site and to allow suitable visibility splays for HGVs to exit the Site once in operation. Finally, the loss from 'H2' in Old Wood South is to facilitate a minor widening of an existing field access point, again to allow entry for HGVs.

7.140. Without appropriate mitigation, hedgerows, their associated ditches (where applicable) and mature standard trees within them, have the potential to be adversely impacted during the construction phase of the Development. Apart from the total of 30m of hedgerow loss noted above for new access tracks and widening, no other loss of hedgerows of trees is expected to occur within either parcel of the Site.

7.141. There is however the potential for hedgerows and their associated trees and ditches to become damaged or degraded during construction. As with waterbodies, the agricultural ditches associated with some hedgerows have the potential to be damaged through an increase in run-off and sedimentation.

7.142. Perimeter security fencing will be installed at the commencement of construction and will be sited at the following minimum distances from each hedgerow type:

- Species poor hedgerows with no trees or ditches – 5m minimum
- Species rich hedgerows OR hedgerows with ditches OR hedgerows containing trees with Low bat roosting potential – 8m minimum
- Hedgerows containing trees with Moderate bat roosting potential – 10m minimum
- Hedgerows containing trees with High bat roosting potential – 12m minimum

7.143. All security fencing will be maintained throughout the construction phase. Buffer zones will be put in place around retained in-hedgerow trees, as specified within the Tree Retention and Removal Plan and Arboricultural Implications Assessment submitted in support of this application.

7.144. Gaps in existing hedgerows in the Southern Parcel will be infilled with large scale legacy tree planting (for example, oak) in order to strengthen the hedgerow network, improve connectivity and to aid screening of the Site. The creation and ongoing management of hedgerows will be prescribed as part of a Landscape and Ecological Management Plan (LEMP) prepared for the Site. Hedgerows will be managed to encourage tall, bushy growth to a height of at least 3m.

7.145. Approximately 2.54km of new native species-rich hedgerow will be planted within the Northern Parcel to screen the solar panels from view of the public right of way which will run through the centre of the parcel. In addition, 1.12ha of copse planting with small scale trees and 2.4ha of woodland planting with large scale trees will be incorporated throughout both parcels both in order to assist with screening and to extend existing adjacent areas of woodland, creating habitat corridors throughout the Site.

Birds

7.146. The initial walkover survey confirmed that the Site was suitable for both nesting and foraging birds, with the four Winter Bird Surveys highlighting use of the Site by a moderate diversity and abundance of widespread species, some being farmland specialists. The four Breeding Bird Surveys found that the Site supports a moderate diversity of breeding birds, with most of these are utilising the hedgerows and boundary features, with the only bird of conservation concern recorded in high numbers within the fields themselves being skylark. Skylark were recorded in moderate numbers across the Site during both the WBS and BBS and were considered to have a stable breeding population, with approximately eight territories noted within both parcels, across all BBS visits.

7.147. It is possible that without effective protection and mitigation measures, that the retained hedgerows, trees, woodland and associated boundary features would be damaged during the construction phase of the development through run-off and dust from construction traffic.

7.148. Additionally, the clearance of approximately 30m of hedgerow across the site may risk disturbance, injury or death to any birds which are using the feature for nesting, depending on the time of year for removal.

7.149. The removal of 47ha of arable land will reduce the amount of possible breeding habitat of ground nesting birds which specialise in open farmland. Although skylark have been observed foraging within solar arrays, it can be reasonably assumed that the majority of skylark nesting territories will be displaced from the Site, since fields with solar panels are likely to be incompatible with skylark nesting requirements. It is considered that territories identified in the north-eastern corner of the Southern Parcel can be displaced into adjacent neighbouring habitat which is also arable and can absorb this territory, and the territories identified in the south-east of the Northern Parcel will not be affected by the erection of solar panels. It is therefore estimated that six breeding skylark territories will be displaced through the construction of the proposed solar array.

7.150. There will be partial mitigation for the six displaced skylark territories in the Northern Parcel, with much of the south eastern most field within the northern parcel being left undeveloped and seeded with Emorsgate EM2 – Standard General-Purpose Meadow Mixture (or similar). This will be managed as tall grassland (between 20-70cm in height) and subject to a late summer haycut in order to provide suitable habitat for skylarks to breed in.

7.151. Hedgerow removal will be carried out outside of the bird nesting season (March – August inclusive) or be preceded no more than 48 hours beforehand by an inspection by a suitably experienced ecologist. In order to work around the reptile and GCN hibernation period, this work will be undertaken in either September or October, although above-ground clearance could occur over winter, providing that he hedgerow base is removed April – October.

7.152. As mentioned above, biodiversity protection buffers will be demarcated prior to the construction phase commencing in order to protect all retained trees, woodland and hedgerows from damage throughout construction and to minimise disruption to bird nesting on Site. All biodiversity protection buffer fencing will need erecting prior to any ground works. This will be outlined further within the CEMP (Ecology).

7.153. Landscaping plans include extensive grassland seeding with a variety of different seed mixes, including Emorsgate EG26 – Standard Old Fashioned Grazing Mixture within the security fencing, Emorsgate EM2 – Standard General-Purpose Meadow Mixture outside the security

fencing, and Emorsgate EM8 – Meadow Mixture for Wetlands. Additionally, 0.5ha of small-scale tree copse planting and 2.4ha of large-scale tree woodland planting which will eventually grow into a woodland belt, as well as approximately 2.54km of new native, species-rich hedgerow.

7.154. The new planting across the Site will provide new opportunities for local birds for nesting and foraging and will provide an enhancement for several species. New landscape planting will be managed sensitively under a LEMP.

7.155. Finally, at least 15 bird boxes should be installed on suitably mature, retained trees within both parcels during the construction phase. Figure 11 gives indicative locations of these, with exact locations, box specifications, and monitoring outlined within the LEMP.

Bats

7.156. The Site was considered to offer Local value to roosting, foraging and commuting bats given that several mature trees with Bat Roosting Potential (BRP) were identified and that the Site and immediate surroundings comprised a network of hedgerows, dry and wet ditches, ponds and areas of woodland.

7.157. The Development proposals have been carefully designed to ensure that any trees with BRP are sufficiently protected from impacts. A minimum buffer of 8m for hedgerows containing trees with low BRP, 10m for hedgerows containing trees with moderate BRP and 12m for hedgerows containing trees with high BRP is included within the scheme. The trees will therefore remain unaffected by the development of the solar array.

7.158. The CEMP (Ecology) to be secured through condition will comprise measures to protect the trees, watercourses, woodland and hedgerows on the Site during construction, as well as the retained habitats off-site which are likely to be used by foraging and commuting bats. This will ensure that these features are protected and retained for use by bats both during construction and operation.

7.159. Should any trees on or directly adjacent the Site require removal or de-limbing, this will first be discussed with a suitably qualified ecologist. Further surveys may be required to ensure bat roosts are not present; this would entail a visit to the Site by the ecologist to check the tree for features which may be suitable for roosting bats.

7.160. Should no features be identified, works can go ahead. However, if there are suitable features either a tree climbing inspection or emergence survey will be required (emergence surveys can be conducted between May and August inclusive). Where bat roosts are found, a licence from Natural England will be obtained in order to damage/destroy the roost.

7.161. As set out above, appropriate buffer zones between the arrays and all of the hedgerows / woodland / watercourses have been incorporated into the design. Therefore, habitats considered to be of the highest importance for foraging / commuting bats will be retained and protected in full and will not be directly impacted by the development. No further surveys to ascertain the baseline use of the Site by foraging / commuting bats are recommended, as impacts will be avoided.

7.162. Approximately 2.54km of new native, species-rich hedgerow is to be planted at the Site in order to screen the development from the public right of way running through the Northern

Parcel, increasing hedgerow connectivity within the Site, improving the accessibility for bats to navigate across the Site, as well as increasing foraging opportunities.

7.163. Existing gaps in hedgerow gaps in hedgerows will be planted with local, native species including a high number of large-scale trees which are due to be incorporated within the landscaping for the scheme. Additionally, several areas of small-scale tree copse planting and large-scale tree woodland planting will be undertaken within both Site parcels, which will in increase connectivity with extant adjacent woodland, and provide screening for the Site.

7.164. The land within the Site will be seeded with three different, native wildflower seed mixes, creating a grassland in place of the lost arable habitat, improving the opportunities for bat foraging.

7.165. Several areas between the security fence and the boundary hedgerows will be seeded with Emorsgate EM2 – Standard General-Purpose Meadow Mixture (or similar) and managed as tussocky grassland through a late-summer haycut. It is anticipated that once established the grassland buffers will support a good range of invertebrates including various species of noctuid moths and important prey species for bats. The management requirements of all

7.166. Should construction activities occur during the winter months and it is necessary to install lighting, this will be discussed with an ecologist. Equally, should permanent lighting be required during the operational phase of the solar farm, this will also be discussed with an ecologist. Depending on timing, steps may need to be taken to ensure that lighting does not impact on the boundary habitats such as the preparation of a Sensitive Lighting Strategy and/or a toolbox talk to contractors and operatives on Site. Roost Enhancement

7.167. A number of bat boxes will be installed on mature trees within the Site in order to increase roosting opportunities. Further details of the boxes will be given within the LEMP produced for the Site; however, the supporting EcIA report provides indicative locations for 15 bat boxes to be installed within both parcels during the construction phase of the Site.

7.168. The boxes will be regularly monitored subsequent to the completion of construction to evaluate the effectiveness of the enhancement and provide new bat records for the area. Details of monitoring will be set out within the LEMP.

Badgers

7.169. A minimum of seven badger setts were present within the two parcels of Site within the initial ecological walkover survey, with evidence of foraging as well as several latrines found. These were limited to hedgerows, woodland and boundary features. The arable land within the fields also offers suitable foraging for badgers.

7.170. All setts are located within hedgerows, predominantly within and adjacent to the site's Northern Parcel, the largest of which is a main sett adjacent to the parcel's western boundary. All badger setts are due to be retained and remain unaffected by the Development. Wide buffers of at least 5m are to be established along all hedgerows throughout the Site and demarcated by security or temporary fencing. It is likely that disturbance activities will be far enough away to avoid any adverse impacts on the features.

7.171. Badger setts are protected from damage and destruction under the Badgers Act 1992 (as amended). The badger setts will be protected during construction through the establishment of a buffer of a minimum of 10m between setts and working areas. It is suggested that

subsidiary setts should have a 20m non-construction buffer, and main setts should have a 30m non-construction buffer. These buffers would be demarcated using Heras-type fencing to avoid any damage to the setts and will avoid damage to the setts during the construction phase.

7.172. The CEMP (Ecology) to be prepared for the Site will outline measures to be taken to reduce the probability of incidental mortality of badgers during the construction phase.

7.173. A further badger survey will be conducted approximately one month prior to the commencement of works in order to ensure no new setts have been excavated since the completion of the Extended Phase 1 survey in 2022, and to check that any existing setts are still in use.

7.174. Post construction, both parcels of the Site will remain suitable for commuting and foraging badgers, particularly where species rich grassland is seeded and native copse and woodland planting is undertaken outside array security fencing on existing arable land. It is likely that natural undulations in the ground will be sufficient to enable badgers (and other small mammals such as brown hares) to pass underneath Site fencing and use the grassland for foraging.

Otter and Water Vole

7.175. No signs of otter were identified either within the initial walkover survey or within either targeted water vole survey of Kingston Brook. Additionally, NBGRC returned no records of this species within 1km of the Site in the last 10 years. However, following population recoveries it is likely that Kingston Brook is used to some extent for otters moving around the landscape. it is noted that habitats within Kingston Brook are deemed moderately suitable for water vole and may be utilised as a commuting route for otter.

7.176. Subsequently, two separate water vole surveys were undertaken on 24th April 2023 and 14th August 2023. Due to the absence of evidence of water voles at the Site recorded during targeted surveys, this species is considered likely absent and the Site is of Negligible importance to this species.

7.177. The proposed access track for the Southern Parcel will be routed over Kingston Brook by incorporating a new prefabricated bridge as the one presently in-situ will not be suitable for heavy goods vehicles throughout construction and operation of the Site. Any work to the brook may have the potential to impede otter movement along the brook or degrade habitat quality.

7.178. The bridge will however be free span with no fragmentation impacts, as it is likely that otters will be able to pass beneath or freely over the top of the crossing. There is also very little risk of otters colliding with traffic passing over the new crossing, as in England this species is most active at night, typically when construction and operational activities will not occur. No lighting is proposed.

7.179. The bridge will remain free span in order that the brook will remain unfragmented for otter dispersal.

7.180. A minimum 5m buffer zone has been established between any stretch of unaffected brook and the development of the new access track, avoiding unnecessary impacts on the feature

during the construction phase of the development. Following construction the bridge will be infrequently used by vehicles, with disturbance levels negligible.

7.181. Measures to avoid degrading the watercourse as a result of construction activities will be set out within a CEMP (Ecology) prepared for the scheme, as described above. No specific mitigation for otters is recommended, as impacts on this species can be avoided.

Great Crested Newts

7.182. There were four ponds recorded on Site and a further 11 ponds within the surrounding 250m of the Site boundary of both parcels. Two of ponds were identified as dry, and one was considered too dangerous to survey due to the amount of slurry present. The fields provided sub-optimal foraging habitat; however, the extensive hedgerow network and adjacent woodland blocks may provide suitable terrestrial habitat for the species. of the recorded ponds, 8 were subject to HSI assessments and eDNA sampling as these were the ponds for which access was granted. The eDNA samples returned positive records for crested newts within four of these ponds: Ponds 3, 9, 10 and 13 (see Ecological Impact Assessment for details).

7.183. Great crested newts may be found up to 250m from ponds (and up to 500m from ponds in exceptional circumstances); however, existing studies have demonstrated that the habitat within 50m of the pond is the most important to GCN and supports the majority of a great crested newt population within its terrestrial phase.

7.184. One on-site pond within the north west of the southern Parcel tested positive for GCN, and construction within 50m of this pond has the potential to injure or kill the species, and to damage their breeding location.

7.185. Although GCN may commute across agricultural fields to reach breeding ponds, they are unlikely to forage, shelter or hibernate within these habitats due to lack of cover from dense vegetation, and likely low populations of invertebrates for foraging. They are however likely to forage and shelter within the hedgerows, adjacent woodland and field margins. These more suitable habitats are due to be retained and will be protected from damage during construction, apart from the removal of four short sections of hedgerow throughout both parcels of the Site, which carries a small risk of the killing or injuring of great crested newts.

7.186. No ponds will be directly damaged or removed as a result of the Development.

7.187. Clearance of the four hedgerow sections will be undertaken using a precautionary approach, which will be specified within the CEMP (Ecology) under a non-licensed method statement. This will include a pre-removal check of the feature by a suitably experienced ecologist in order to locate and remove any amphibians which may be present. In the highly unlikely event that a GCN is encountered during the removal of hedgerows, the attendant ecologist will advise of the necessary course of action. A licence from Natural England may be required in order to permit works to continue.

7.188. Two ponds either on-site or within 50m of the Site boundary (Ponds 3 and 10) returned positive eDNA for GCN.

7.189. The Development layout has been amended to account for this, with no construction due to be undertaken within 50m of these features.

7.190. The scheme has been designed with minimum construction buffers of 50m from every GCN positive pond (on and off-site) and 10m from every GCN negative pond (on and off-site), as well as assuming that all ponds which were not subject to an eDNA sampling survey hold great crested newt presence and so have 50 m buffers.

7.191. All ponds within 50m of the two parcels were tested for GCN eDNA and the scheme design amended appropriately once the laboratory results were returned. One pond lay within 250m of the proposed cable route; however, the cable will be routed along an existing road and therefore will not affect the existing pond or supporting terrestrial habitat.

7.192. Biodiversity protection zones will be erected around all hedgerows and boundary features during the construction phase, which will be outlined within the CEMP (Ecology).

7.193. Planting of an additional hedgerow within the Northern Parcel will increase hibernation and terrestrial foraging habitat for GCN, as well as the seeding of species-rich wildflower seed throughout the Site and incorporation of small-scale tree copse planting, increasing the foraging potential of the grassland from the current modified grassland.

7.194. Landscaping and ongoing management of new and existing habitats will be set out within the LEMP in order to increase its value to wildlife.

7.195. It is proposed that a hibernaculum will be provided within suitable retained or newly planted habitat to increase hibernation potential for amphibians.

Reptiles

7.196. No sign of reptile presence was noted on Site and only one record of a grass snake within 1km has been recorded in the past 10 years, however the hedgerows and narrow field boundaries provide some suitable foraging and sheltering opportunities for widespread reptiles such as slow worm, however this is sub-optimal.

7.197. Four small lengths (approximately 30m in total) of hedgerow will be removed from within the two site parcels during the construction phase, as well as 7.15ha of modified grassland within the Southern Parcel, which may have the potential to injure or kill any reptiles which are utilising this feature for sheltering; however, this is considered highly unlikely.

7.198. General disruption and damage to the hedgerows and associated field margins may present a low risk of individual reptiles being injured or killed during the construction phase in the absence of adequate mitigation.

7.199. As set out above, clearance of the four hedgerow stretches and areas of modified grassland should be undertaken using a precautionary approach, which will be specified within the CEMP (Ecology). This will include a pre-removal check of the feature by a suitably experienced ecologist in order to locate and remove any reptiles which may be present. Depending on the timing of feature removal works, it may be necessary to remove the short sections of hedgerow under an Ecological Clerk of Works (ECoW). This will be outlined further within the CEMP.

7.200. Enhancements to the Site include the planting of approximately 2.54km of new species-rich hedgerow within the Northern Parcel, as well as new copse and woodland planting within both parcels. There will also be a total of 92.17ha of new grassland planted across the Site both within and outside of the array security fencing.

7.201. A small number of habitat piles will be installed throughout the Site in order to enhance it for reptile hibernation. These will be outlined further within the LEMP.

7.202. It is likely that the habitat within the Site will offer greater terrestrial value to reptiles once operational, than it does pre-development, due to the expansive arable nature of the existing fields.

Other Species

7.203. Several sightings of brown hare were recorded on site, and there are records of hedgehog in the vicinity of the Site. The Site is considered suitable for both species due to the presence of extensive hedgerow networks, adjacent woodland and arable fields. This species is known to favour solar farms and so would likely benefit from the Development in the longer term.

7.204. As noted above, the removal of four small sections will be preceded by a fingertip search by a licenced ecologist for dormice, who will also search for signs of hedgehogs within the survey. The recommended timing of this hedgerow removal is between September and October, which avoids the hedgehog hibernation period. The methodology for this removal will be laid out within the CEMP (Ecology).

7.205. The LEMP will outline the proposed landscaping and new planting within the Site, enhancing it for wildlife, which includes a number of species of conservation concern including both hedgehog and brown hare.

Biodiversity Net Gain

7.206. A Biodiversity Net Gain Assessment of the Development has been conducted which estimates that the Development, taking into account the extensive suite of proposed landscape and ecological enhancements across the site, would deliver a net gain of 80.65% in Habitat Units and a net gain of 62.34% in hedgerow units across the Site.

7.207. Due to the addition of a prefabricated bridge over the Kingston Brook in order to accommodate heavy goods vehicles throughout construction and within the operational life of the solar site, there will be a slight loss of -0.06 river units, leading to an overall net loss of -2.35% in River Habitat Units.

Summary

7.208. Overall, provided the avoidance and mitigation measures outlined in the EcIA are adhered to, the Development would be considered acceptable in accordance with the NPPF, Policies 2, 16 and 17 of the adopted LPP1 and Policies 1. 16, 19, 37 and 38 of the adopted LPP2, and the proposed landscaping and enhancements would provide a positive, permanent contribution to biodiversity within the Site.

The Historic Environment

7.209. The supporting Heritage Statement provides an assessment of the potential impact of the Development on the designated heritage assets in proximity of the Site, along with the archaeological potential of the Site.

Built Heritage

7.210. As identified above in this statement, there are no designated statutory heritage assets which lie either within or in the immediate vicinity of the Site.

7.211. The north-western extent of the Wysall Conservation Area lies c. 335m south-east of the Northern Parcel and the south-western extent lies c. 295m east of the Southern Parcel. The Conservation Area contains one Grade I Listed Building (the Church of Holy Trinity c. 510m east of the Southern Parcel (1259980)) and four Grade II Listed Buildings.

7.212. The Grade II Listed Highfields convent lies c. 435m west of the northern site and 670m west of the Southern Parcel (1260277).

7.213. A full detailed setting assessment of the above heritage assets is provided within the supporting Heritage Statement which considers whether any of the heritage assets present within or beyond a 1km study area include the Site as part of their setting, and therefore may potentially be affected by the Development.

7.214. Following a detailed assessment of designated heritage assets, the Development within the Southern Parcel will result in less than substantial harm at the lowermost end of the spectrum to the heritage significance of the Wysall Conservation Area, via an alteration to setting. The Development within the Northern Parcel would result in no harm to the heritage significance of Wysall Conservation Area. Overall, the Development would result in no harm to the heritage significance of the Grade I Listed Parish Church of All Saints and the Grade II Listed Highfields.

7.215. Under paragraphs 207 and 208 of the NPPF, this level of harm to the above assets should be weighed against the public benefits of the scheme. As outlined above in this statement, there are significant environmental benefits and other considerations associated with the Development, that when taken into account are considered to clearly and demonstrably outweigh the less than substantial harm at the lowermost end of the spectrum.

7.216. The findings of the setting assessment demonstrate that the Development is not anticipated to result in any substantial harm to the significance of any designated heritage assets in the wider vicinity, through changes to setting, and is therefore deemed to be consistent with the requirements of policies 2 and 11 of the adopted LPP1 and policies 1, 16 and 28 of the RBC LPP2.

Archaeology

7.217. The Heritage Statement includes an Archaeological Desk Based Assessment and has been informed by a Geophysical Survey of the majority of the site undertaken in August and September 2023. Due to late harvesting of crops and subsequent poor ground conditions, the northern and western parts of the Site's Southern Parcel were not able to be surveyed during the initial survey. The remaining parts of the site still yet to be surveyed will be revisited at a later date when the ground conditions have improved and can enable the survey to take place. The results of the outstanding survey will be presented to the Council for consideration as a separate addendum report when available.

7.218. The Geophysical Survey has been undertaken in order to better understand the archaeological potential of the site and subsurface conditions and to map any potential anomalies which may indicate the presence of archaeological features. The findings of the geophysical survey have heavily influenced the final design of the Development and have resulted in several areas of panels being removed from the site parcels where anomalies have been identified, with avoidance proposed as the first option for mitigation. The findings of

the geophysical surveys conducted to date are presented within the supporting Heritage Statement and are discussed further below.

7.219. The geophysical survey within the northern parcel of the site identified a complex series of linear and rectilinear anomalies within the eastern extent of the Northern Parcel, covering an area of approximately 175m by 190m, situated between two linear features running north to south. The anomalies form rectilinear enclosures which vary in size and shape, and within them a number of subdivisions were recorded. The nature of the anomalies is suggestive of a Romano-British date, although they are not considered to be morphologically distinctive enough that a late Iron Age or early medieval date could be ruled out. Further rectilinear anomalies were identified to the east of the site, some of which were located within an area which has since been removed from the red line. These align with the aforementioned anomalies and are suggestive of a continuation of settlement, or enclosures and field systems outside of the primary development.

7.220. An area of potentially associated industrial activity was also recorded in to the north of the main area of possible Roman settlement in the Northern Parcel.

7.221. Within the southern parcel of the site, several weakly positive curvilinear anomalies were identified which form a small rectilinear enclosure with rounded corners. Although of uncertain date, the nature of these anomalies is indicative of features of possible prehistoric to Roman date.

7.222. The potential for archaeological remains of prehistoric to Roman date in these areas of the site is considered to be high. The potential for significant archaeological remains of prehistoric to Roman date in the remainder of the site is considered to be low, with the exception of the area of the site still to be subjected to the geophysical survey.

7.223. With regards to Historic England's Scheduling Selection Guide Settlement Sites to 1500, this covers Romano- British rural settlements and states the following: *"Where they retain reasonable archaeological potential, Roman settlement sites will be deemed to have national importance. However, in some areas, both upland and lowland, certain types of settlement are sufficiently common to require discrimination in terms of scheduling recommendations. Again, considerations such as condition, group value and potential will require evaluation."*

7.224. With regards to Historic England's Scheduling Selection Guide Industrial Sites, this covers Romano-British industrial activity: *"The expansion of settlements and towns under Roman control led to an increase in scale of domestic and agricultural industries such as corn milling and tanning, as well as a wide range of craft and small scale manufacturing industries. These are typically identified as components of settlements, rather than as isolated sites and are thus normally considered for designation as components of larger sites."*

7.225. The activity identified within the site is suggestive of domestic settlement, although there is no evidence to suggest complex, unusual or high-status activity. The remains have been truncated through the ploughing of the area. The possible Roman settlement remains, industrial activity and enclosure are not considered to have a level of significance commensurate with a Scheduled Monument, but rather are likely to comprise non-designated heritage assets of local significance.

7.226. As part of the development proposals, no panels are proposed across the anomalies indicative of Roman settlement activity in the northern parcel of the site, and this land will be

retained as undeveloped with the exception of the cable routeand access track extending eastwards from the Development and across this area.

7.227. The majority of these archaeological remains will be retained in situ with no further recording needed. The areas which the cable route and access track will pass through may disturb or remove below-ground remains of local value in these areas, which would result in minor harm to a non-designated heritage asset of local significance.

7.228. Panels are proposed across the north eastern parts of the Northern Parcel where there is evidence for an enclosure and industrial activity. Some of these features will be retained in situ, although the construction of the panels and the cabling may disturb or remove below-ground remains of local significance in these areas, which would result in minor harm to a non-designated heritage asset of local significance.

7.229. Under paragraph 209 of the NPPF, any harm to non-designated heritage assets will need to be weighed with the public benefits of the scheme.

7.230. The geophysical survey within the site identified the below-ground remains of furrows associated with the ridge and furrow agricultural technique which occurred during the medieval to post-medieval periods. Any below-ground remains of furrows are not considered to be of sufficient interest to be heritage assets.

7.231. The anomalies identified which have been interpreted as of possible Romano-British date may be of medieval date. Historic England's Scheduling Selection Guide Settlement Sites to 1500 covers medieval rural settlements and states that the following would be suitable for scheduling: *"Surviving medieval settlement remains whose quality and potential gives them national importance are sufficiently common in many parts of the country that discrimination is needed when making scheduling assessments. Such will be influenced, especially in terms of assessing rarity and representativity, by the Atlas, but the other non-statutory criteria such as group value, documentation and especially potential will be at least equally important."*

7.232. The activity within the site is suggestive of an area of possible domestic settlement which is not very complex and has been truncated by ploughing. There is nothing to suggest that the remains present within the site are of a significance commensurate to a Scheduled Monument, rather they are considered to be of a significance commensurate to a non-designated heritage asset of local significance.

7.233. As per the assessment of prehistoric and Roman potential above, as part of the development proposals, no panels are proposed across the anomalies indicative of Roman or possible medieval settlement activity in the Northern Parcel, and this land will be retained as undeveloped with the exception of the cable route and access extending across this area.

7.234. The majority of these archaeological remains will be retained in situ with no further recording needed. The areas which the cable route and access track will pass through may disturb or remove below-ground remains of local value in these areas, which would result in minor harm to a non-designated heritage asset of local significance

7.235. The land within the sites historically comprised agricultural land which has been ploughed over a long period of time. No anomalies indicative of post-medieval to modern activity were recorded within the site and the potential for significant archaeological remains of this date within the site is considered to be low.

7.236. Overall the Development has been appropriately evolved to remove and avoid the areas of identified high potential for archaeological significance. It is considered that any resulting minor harm to these features of local significance arising as a result of the Development should be appropriately weighed against the significant public benefits of the scheme.

7.237. Overall, the Development is considered to be in accordance with the requirements of Policies 2 and 11 of the adopted LPP1 and Policies 1, 16 and 29 of the RBC LPP2.

Agricultural Land

7.238. Both national policy and Policies 1 and 16 of the adopted LPP2 require development on agricultural land to steer towards areas of poorer quality agricultural land where this is available, except where this would be inconsistent with other policy and sustainability considerations. As set out in section 4, the accompanying Agricultural Land Classification (ALC) survey and report concludes that the Site is comprised of mixture of Grade 3b and Grade 4 land, both of which is not categorised as BMV.

7.239. The National Planning Policy Framework states that where "significant development" of agricultural land is demonstrated to be necessary, local planning authorities should seek to use areas of poorer quality land in preference to that of higher quality. Importantly, paragraph 180 does not seek to preclude the development of such land. The Development does not result in a temporary loss of any BMV agricultural land.

7.240. It is widely accepted, and is underpinned in a wide number of appeal decisions (e.g ref: APP/G2713/W/23/3315877), that temporary Solar PV development such as the Development would not result in the permanent loss of agricultural land and, as per the proposal, often the schemes maintain grazing activities on the site throughout the developments' operational lifetime. Following cessation of use, the land will be returned to its full agricultural use. Introducing a 40-year fallow period for the land will also assist the rebalancing of soil nutrients, re-establishing soil biota, breaking crop pest and disease cycles, and provide a haven for wildlife thus enhancing the quality of land for future agricultural use following the decommissioning of the solar farm. Whilst 40-years is considered a significant period of time, the development is still considered to be temporary.

7.241. The independent National Food Strategy Review shows that solar farms do not present a risk to the UK's food security. It is evidenced that currently solar farms occupy less than 0.1% of the UK's land. To meet the government's net zero target, the Climate Change Committee estimates that we will need between 90GW of solar by 2050 (70GW by 2035), which would mean solar farms would at most account for approximately 0.6% of UK land – less than the amount currently occupied by golf courses. The UK Government Food Security Report, published in December 2021, is explicit: "*The biggest medium to long term risk to the UK's domestic production comes from climate change and other environmental pressures like soil degradation, water quality and biodiversity.*" The report quantifies this risk, noting that under a medium emissions scenario, climate change could reduce the proportion of 'Best and Most Versatile' agricultural land from a baseline of 38.1% to 11.4% by 2050, a 70% reduction.

7.242. Given the above, the Development is therefore considered to be consistent with the requirements and objectives of Policies 1 and 16 of the RBC Local Plan Part 2.

Flood Risk and Surface Water Drainage

7.243. The majority of the Site comprises land classed as Flood Zone 1, an area least at risk of flooding. However, there is a small portion of the Site, in the southern and south eastern extent of the Southern Parcel, which is identified to fall within Flood Zone 2/3 which aligns with Kingston Brook that bisects the southern part of the Southern Parcel.

7.244. There are several other Ordinary Watercourses flowing through the site. These are generally field boundary ditches assumed to assist with the drainage of the existing agricultural fields.

7.245. As the Site is greater than 1ha in size and includes areas in Flood Zone 2 and 3, the application is supported by a Flood Risk Assessment and Surface Water Drainage Strategy, the findings of which are discussed below.

Flood Risk

7.246. The Flood Map for Planning defines large areas of the site as Flood Zone 1, at Low risk of flooding, not impacted by a 1 in 1,000 year tidal flood event. Small areas of Flood Zone 2 and 3 are defined at the southern end of the site. Flood Zones on site are however, associated with fluvial flooding.

7.247. The site's inland location will ensure that it is at very low risk of tidal flooding and that the overall tidal flood risk is considered to be Very Low. Overall, given the above, the fluvial flood risk at the site is considered to be Low.

7.248. The Risk of Flooding from Surface Water (RoFSW) dataset shows large areas of the site are not predicted to be impacted by a 1 in 1,000 year rainfall event and are at Very Low risk of surface water flooding. The dataset also highlights areas of High to Low risk, impacted by a 1 in 30 and 1 in 1,000 year rainfall event, respectively, throughout the site.

7.249. The lowest edge of all proposed solar panels will be raised above the predicted 1 in 1,000 year surface water flood depths. Solar panels are therefore not predicted to be impacted by surface water flooding, nor negatively impact flood risk elsewhere. Purposefully through design, there are no inverters within the solar area proposed on site within the 1 in 1,000 year surface water flood extent. The proposed BESS area has also been located outside of the 1 in 1,000 year surface water flood extent. The proposed solar connection infrastructure just encroaches the 1 in 1,000 year surface water flood extent, with depths of less than 150mm here predicted during a 1 in 1,000 year rainfall event. Flood depth here are not predicted to exceed 150mm in depth during a 1,000 year rainfall event. It is noted that during detailed design, it is expected that the site layout is amended to move the solar connection infrastructure outside of the area predicted to be at risk of surface water flooding.

7.250. Given the above, the site is considered to be at low risk of flooding from surface water.

Solar Farm

<u>Solar Panels</u>

7.251. The majority of the proposed solar farm extent will comprise of solar panels. The solar panels are proposed to be a 'fixed system', with vertical supports driven directly into the ground and no need for concrete foundations. There will be a gap of between 2.5 and 6.5 m (average of approximately 3.5m) between the rows of solar panels, depending on local topography.

The lowest part of the panels would be minimum 0.8 m above the ground extending to a maximum of 3.1 m

7.252. The RoFSW dataset generally predicts surface water flood depths on site to remain shallow during a 1 in 1,000 year rainfall event. The flood depths generally range between 150-300mm. Maximum surface water flood depths of 900-1200mm are predicted on site in localised areas alongside watercourses, with greatest depths in the south of the Northern Parcel. All proposed solar panels will be raised so that the lowest edge is above the predicted surface water flood depths, allowing surface water to flow freely beneath.

7.253. The height of the panels will be installed to respond directly to overall site topography, meaning that within the areas of maximum surface water flood depths, at worst case the panels would be raised to approximately 1.5m to the lowest edge of the panels (allowing 0.3m freeboard) resulting in an overall worst case panel height of 4.6m depending on panel tilt angle, however, in most instances panel heights in these areas will not exceed 3.8m (based on a panel angle of 20 degrees). The worst case height for panels within maximum surface water flood zones will only apply to a very small number of panels within the topographically lowest parts of the northern site parcel (please refer to Figure 5.3 within supporting FRA) and where the topography rises away from these low points, panel heights relative to ground level will drop as they respond to the rising topography.

7.254. No solar panels are proposed within the areas indicated to be in Flood Zone 2 or 3.

7.255. Overall, the proposed solar panels will be safe from fluvial flooding and will be raised sufficiently so as not to be at risk from surface water flooding.

7.256. No further mitigation measures are considered necessary.

<u>Central Inverters, Solar Connection Infrastructure and Auxiliary Transformers</u>

7.257. In addition to solar panels, central inverters, solar connection infrastructure and auxiliary transformers are proposed within the proposed solar farm site.

7.258. This proposed infrastructure is very small in area. Typical dimensions of the central inverters are approximately 2.4m x 6m, totalling an area of 14.4m^2. Typical dimensions of the solar connection infrastructure include a solar connection control building 15 m x 5 m (75m^2)(of which there are two), transformers 4.5 m x 5 m (22.5m^2) (of which there are two) and auxiliary transformers 3 m x 3 m (9m^2) (of which there are four). In addition to being small, these units are well distributed across the site.

7.259. It is proposed to site the central inverters on concrete plinths or screw piles off the ground with permeable areas beneath. Runoff from the container's roof will therefore be able to discharge into the surrounding ground, as per existing. It is expected that the same approach is taken for auxiliary transformers. To be confirmed at detail design stage.

7.260. There are generally no proposed central inverters, solar connection infrastructure and auxiliary transformers within Flood Zone 2 or 3 or within an area of surface water flood risk identified by the RoFSW. The solar connection infrastructure is just located in an area predicted to be at risk of surface water flooding. Flood depths here are not predicted to exceed 150mm in depth during a 1,000 year rainfall event.

7.261. The proposed solar farm infrastructure will therefore not be at significant risk of flooding, nor will it significantly impact the existing surface water drainage patterns as they are small in area, sited on concrete plinths or screw piles with the permeable areas beneath and are well distributed across the site whilst also avoiding the areas at greatest flood risk. Therefore, no further mitigation measures are considered necessary.

Access Tracks

7.262. Proposed access tracks will be constructed with permeable materials, expected to be type 1 or 2 crushed stone. Surface water runoff will therefore be able to discharge into the crushed stone before soaking into the surrounding ground, as per existing. Low volumes of operational traffic will ensure that compaction will not be significant, aiding natural percolation.

7.263. Where access tracks are proposed to cross Ordinary Watercourses on site, they will be designed to be clear-span to ensure flows are not impacted. There are currently 3 proposed instances of access roads crossing Ordinary Watercourses on site.

7.264. Overall, no further mitigation measures are considered necessary.

Proposed Land Use Changes

7.265. The proposals will result in the cessation of agricultural activities at the site which will in turn, result in a variety of beneficial effects which will serve to reduce soil compaction and runoff rates from the site, as listed below:

- The site will not be left without vegetation cover during the winter as experienced with arable farming;
- The site will not be intensively trodden or over grazed; and
- The site will not be regularly traversed by heavy machinery

7.266. It is also recommended that following installation of the panels, the site is chisel-ploughed or similar cultivated and seeded with native meadow grass and wildflowers. Chisel-ploughing will reduce soil compaction on the site and promote seed growth; it has been proven to significantly increase infiltration rates thereby reducing runoff rates from the site.

7.267. If grazing is undertaken on site following development, the grazing density will be kept low to limit compaction and ensure a varied grassland sward establishes.

7.268. Additionally, larger meadow type grasses and wildflower vegetation, trees and woodland planting such as that proposed, provide high levels of natural attenuation which wills serve to reduce the risk of erosion and limit surface water flows across the site. With the implementation of chisel-ploughing, changing the site's primary function to solar power generation will have several potential loner-term benefits regarding surface water runoff rates.

Surface Water Drainage Strategy - Solar Farm

7.269. As discussed above, the solar farm infrastructure will not significantly impact surface water runoff rates and patterns at the site. In addition, the cessation of intensive agricultural

activities at the site will have beneficial effects which will help reduce soil compaction and surface water runoff rates from the site.

7.270. Furthermore, as per the above, the substantial landscape planting associated with the Development will serve to manage surface water run-off, reduce erosion and limit flood risk.

7.271. Overall, the proposed solar farm element of the Development has the potential to provide betterment in terms of surface water runoff rates and downstream flood risk. Therefore, a surface water drainage strategy is not required to manage surface water runoff any further.

BESS and Substation Compounds

7.272. Compared to the proposed solar farm site, the proposed BESS and substation has the potential to increase surface water runoff from the site.

7.273. As set out above in the statement, there is a band of Flood Zone 2 and 3 at the southern end of the Site's Southern Parcel. In general, the BESS compound is located in Flood Zone 1 and Flood Zones 2 and 3 are kept undeveloped. However, there is a very small encroachment of a proposed battery storage unit just on the edge of Flood Zone 2. Approximately 8m2 (0.0008ha) of development across the approximately 101ha site is proposed in Flood Zone 2. However, the RoFSW dataset does not predict the BESS area to be at risk of surface water flooding.

7.274. As a large proportion of the proposed BESS site will comprise rows of battery storage containers and battery inverters which will increase the impermeable area of the site and have the potential to increase surface water runoff, a surface water drainage strategy will be required to manage surface water runoff from the proposed battery storage container and inverters. Details of the proposed surface water drainage strategy are discussed below.

<u>Access Tracks</u>

7.275. The proposed BESS access tracks will be constructed with permeable materials, expected to be type 1 or 2 crushed stone. Surface water runoff will therefore be able to discharge into the crushed stone before soaking into the surrounding ground, as per existing. Therefore no further mitigation measures are considered necessary.

<u>Substation</u>

7.276. A substation is proposed at the southern end of the southern parcel to facilitate the point of connection into the existing 132kV Overhead Line. There is potential that this infrastructure will increase surface water runoff from the site. A conservative approach has therefore been taken and the entire substation area will be assumed impermeable and managed with suitable SuDS features to ensure surface water runoff from the site does not increase.

Surface Water Drainage Strategy - BESS and Substation

7.277. As discussed above, the BESS and substation infrastructure will increase the impermeable area on site and has the potential to increase the surface water runoff from the site. A surface water drainage strategy is therefore required for the proposals to ensure flood risk elsewhere does not increase.

7.278. BGS data show that most of the site is underlain by mudstone and limestone bedrock geology. Mudstone is expected to be impermeable. Additionally, BGS record superficial deposits at the site comprising of 'alluvium - Clay, silt, sand and gravel'. Soilscapes mapping shows the BESS infrastructure to fall under 'loamy and clayey soils with impeded drainage.' These ground conditions are not considered suitable for infiltration-based SuDS. Therefore, infiltration-based SuDS have been ruled out as the source of surface water disposal.

7.279. The next option in the SuDS hierarchy is to discharge surface water runoff into an existing surface water body.

7.280. It is proposed to discharge surface water runoff from the BESS infrastructure into the existing Kingston Brook via an attenuation basin.

7.281. The BESS infrastructure, which is located in the southern parcel of the site has a total impermeable area of 1.567ha. The compound itself, will be surfaced with a type 1 crushed stone material, however, will be underlain with an impermeable membrane to capture any surface water and convey this to the wider drainage system. Surface water runoff will be collected by a system of perforated collector pipes. Perforated pipes located on the eastern side of the BESS infrastructure will discharge directly into a proposed fire water storage tank (discussed in further detail below). Perforated pipes located on the western side will first connect into a main storm water drain, prior to discharging into the fire water storage pipe.

7.282. After passing through the fire water storage pipe, surface water flows will be conveyed to the proposed attenuation basin via a storm water drain. The basin will discharge surface water runoff into the existing Kingston Brook at a restricted QBAR greenfield runoff rate and has been designed to manage flows for all storm events up to and including the 1 in 100 year event plus 40% allowance for climate change.

7.283. In case of a fire event at the site, the National Fire Chiefs Council BESS guidance (see Appendix E) requires as a minimum supply of 1,900 litres per minute of water for at least 2 hours to be readily available at the site. This is equivalent to a volume of 228m^3. As discussed above, a fire water storage tank is proposed to supply the site with water in case of a fire event. The tank will have a diameter of 2.1m and length of 84m, which gives a total storage volume of 290.79m^3. The fire water storage pipe is modelled to always store 228m^3 of water, with the additional space for surface water runoff from the BESS infrastructure to help circulate water within the tank. In this instance, stagnant water will be avoided within the tank. Any additional flows in the tank will simply pass through the outfall and continue towards the attenuation basin.

7.284. A penstock is proposed downstream of the fire water storage tank which, in a case of a fire event would be shut. This feature is proposed to ensure potentially contaminated fire suppression water does not reach the proposed attenuation basin and subsequently enter the Kingston Brook. Instead, water will continue to circulate through the proposed drainage system as it is pumped out of the tank onto site, and re-circulated through the fire water storage pipe until the fire is extinguished. Contaminated water would then be manually pumped out and taken away from the site and the fire water storage pipe would be re-filled.

Summary

7.285. The site is approximately 101ha in area is currently entirely greenfield and predominately used for arable farming with some smaller areas of modified grassland. The site is proposed for a solar farm and BESS development.

7.286. The site is generally located in Flood Zone 1, with areas of Flood Zone 2 and 3 at the southern end of the Southern Parcel associated with the Kingston Brook. Flood Zone 2 and 3 are generally left undeveloped. Areas of surface water flood risk are also predicted on site. Mitigation measures are proposed to help protect the Development from flooding over its lifetime. Mitigation measures include raising the lowest edge of proposed solar panels above proposed flood depths and ensuring vulnerable infrastructure is sequentially located in areas of lowest flood risk.

7.287. The site is not considered to be at significant risk of flooding from any source and access and egress is not predicted to be impeded during an extreme flood event. Once operational, the site will be operated remotely, therefore there will not need to be the need to access the site in the event of an extreme flood event.

7.288. Surface water runoff from the proposed BESS and substation will be managed with the proposed surface water drainage strategy to ensure surface water runoff rates and associated flood risk does not increase as a result of the development.

7.289. With mitigation measures and the proposed surface water drainage strategy in place, the Development will not increase flood risk on site or elsewhere.

7.290. The proposal is considered to accord with the requirements of the National Planning Policy Framework (NPPF) and the requirements on Policies 16, 17, 18, 19 and 20 of the adopted LPP2 with residual risk to the site fully mitigated, and as such considered low risk.

Decommissioning and Restoration

7.291. The Development is for a temporary development with a modelled operational lifespan of 40 years.

7.292. Following cessation of energy generation/storage at the site, and as part of the contractual obligations with the landowner, all panels, security fence and inverters will be decommissioned, and all plant and machinery will be removed from the Site. The extant use of the Site will be restored thereafter. It is recommended that should the Council be minded to approve the application, the decommissioning and restoration of the site can be secured through the use of a suitably worded planning condition as has been implemented on other similar permitted scheme within the County.

7.293. A suitably worded planning condition (s) may be worded to the effects of:

> *"Within 6 months of following the operational use of the site hereby approved commencing, a Decommissioning Method Statement has been submitted to and approved in writing by the Local Planning Authority. The Statement shall include the timing for decommissioning of all, or part of the solar farm if it ceases to be operational, along with the measures, and a timetable for their completion, to secure the removal of panels and any foundations or anchor systems, plant, fencing, equipment and landscaping initially required to mitigate the landscape and visual impacts of the development. In addition, a decommissioning traffic management plan and access route including provision for addressing any abnormal wear and tear to the highway and a decommissioning plan to address noise and dust shall be submitted and agreed in writing with the local planning authority".*

"The subsequent decommissioning of the site shall be carried out in accordance with the agreed details pursuant to condition 6, within 6 months of the expiry of this permission or within 6 months of the cessation of the production of electricity production (whichever is sooner). The applicant should provide the Local Planning Authority with not less than one week's notice in writing of the cessation of the production of electricity and the intended date for commencement of decommissioning works under the terms of this permission".

Minerals Safeguarding

7.294. The site is located within a Mineral Safeguarding Area for Tutbury Gypsum. In accordance with LPP2 Policy 42, is required to demonstrate that the mineral resource is not sterilised by non-mineral development where it is practical and environmentally feasible for it to be prior extracted.

7.295. Where development proposals are located within minerals safeguarding areas, it is recommended that prior extraction of such minerals will be encouraged, subject to whether this is practicable or economically feasible.

7.296. The development proposed as part of this application seeks temporary permission for a period of 40 years for the installation of a solar farm with ancillary BESS and associated infrastructure. When the proposed solar farm is decommissioned at the end of the operational period, the solar panels and other infrastructure will be removed and the site restored to the same quality as it was prior to development.

7.297. Due to the limited quantity of foundations, hard surfacing and heavy infrastructure across the vast majority of the site, combined with the fact that the majority of the site will be retained as grassland, the land will be easier to restore than more intrusive development with more significant foundations. If minded to approve the application, the Applicant is willing for, and expecting, that the Council will grant permission subject to a suitably worded planning condition to secure the appropriate decommissioning of the site once the 40-year operation period has expired. It is therefore considered that the safeguarded gypsum mineral resource will not be sterilised as result of the Development due to the temporary nature of the development and the intention to return the site to its former state following the sites decommission.

7.298. Due to the Developments low impact, temporary nature of the Development and the intention for the site to be restored following its decommissioning, the Development will not have any impact on the future ability for the gypsum mineral to be extracted from the site following the removal of the development of the site.

7.299. Not withstanding the above, the gypsum resource is identified to be at such a depth that the resource can be mined even with the development in place without affecting the development.

7.300. The Development is therefore considered to be acceptable and in accordance with Policy 42 of the LPP2.

Arboricultural Considerations

7.301. The application is supported by a detailed Arboricultural Implications Assessment (AIA) which has been duly informed by a Tree Survey carried out on the site.

7.302. The findings of the AIA report identify that the vast majority of the site's arboricultural resource is of moderate quality (category B) with some high quality (category A) and is therefore desirable for retention. The most important arboricultural feature relevant to the site is the Ancient Semi-Natural Woodland (ASNW), named Old Wood. Old Wood is located at the northern boundary of the site and consists of early mature to mature mixed native broadleaf species, including numerous mature English oak and mature hazel coppice.

7.303. In accordance with Forestry Commission and Natural England Advice, a c. 35m buffer has been applied to the ASNW.

7.304. Mature English oak and common ash trees are identified within some of the hedgerows and field boundaries across the site. The majority of these mature English oak and common ash trees have larger-diameter stems (some hollowing) and are of excellent form and condition.

7.305. The Development will not require the complete removal of any significant trees, tree groups, or hedgerows at the site.

7.306. In order to allow for the routing of the site's internal access road c.25 linear meters of hedgerow will require removal. This will equate to a very low arboricultural impact. These removals are shown as red shaded sections of hedgerow within the Tree Retention and Removal and Tree Protection Plan appended to the AIA report.

7.307. The Development is not anticipated to result in any significant arboricultural impacts on retained trees, tree groups, woodlands or hedgerows at the site. The internal access roads, positioning of PV modules, investors, substation and associated equipment are remote from the site's arboricultural resource and the associated Root Protection Areas (RPAs) and ASNW buffers. This is due to the proposed layout responding to the arboricultural constraints that have been identified.

7.308. Overall the Development is feasible from an arboricultural perspective, and if the prescribed tree protection measures set out within the AIA are carefully implemented there would be no or only a very low potential negative impact on the retained trees. As identified above, a significant amount of new hedgerow and tree planting is proposed as part of the Development which will in turn present a significant gain in tree canopy cover across the site. The proposed development is therefore considered to be consistent with the requirements of Policy 16 of the adopted LPP1 and Policy 37 of the LPP2.

8. Conclusions

8.1. The Development is for the construction and operation of a renewable energy park comprising ground mounted Solar PV with co-located BESS and substation facilitating a connection into the existing 132kV distribution line that crosses the Southern Parcels.

8.2. The principle of renewable energy and low carbon energy technology, such as solar power and battery energy storage, is supported by local and national planning policy. Furthermore, RBC has declared a climate emergency and the UK Government has committed to meeting a legally binding target of net-zero carbon emissions by 2050. There is therefore a significant and demonstrable national and local need for the Development, as set out throughout this document, and the Development will achieve significant contributions towards local renewable energy targets.

8.3. One of the core principles of the NPPF is the need to support the transition to a low carbon future in a changing climate; and to encourage the use of renewable resources. Planning is also acknowledged to play a key role in securing reductions in greenhouse gas emissions and in supporting the delivery of renewable and low carbon energy. The NPPF says that applications for renewable energy should be approved if the impacts are or can be made acceptable. Although there are visual and heritage setting impacts, these are not considered to be unacceptable and are clearly outweighed by the public benefits associated with the development. Accordingly, in this case the NPPF favours approval.

8.4. The Applicant has clearly demonstrated that the Development is essentially required to secure reductions in greenhouse gas emissions and support the delivery of renewable and low carbon energy both nationally and locally.

8.5. A Landscape and Visual Impact Assessment, has been provided to demonstrate that the Development can be effectively integrated and assimilated into the surrounding landscape with any adverse effects highly localised to the immediate environs only, and being temporary with the proposed mitigation planting substantially reducing the scale of adverse effects to a negligible level. The site is not in Green Belt and does not impact any nationally designated landscapes. The introduced built-in mitigation measures, such as offset from the site boundaries and considerable amount of woodland and tree planting assist in reducing the adverse effects and allowing the development to be assimilated into the receiving environment without any residual undue harm. Furthermore, any localised impacts associated with the development would be reversible owing to the temporary nature of the development, which following cessation would be removed from the site and restored to its former agricultural use. This statement has clearly set out that these material considerations lend support to the overall case that significant environmental benefits and government support for the Development which clearly outweigh any localised harm.

8.6. The indirect visual impact on public right of way users has been a key consideration in the final design, especially with regards to Midshires Way National Trial, with large setbacks to infrastructure included in the design alongside sensitive landscaping to filter and screen views of the Development whilst maintaining some long distance views.

8.7. The Development is result in even the temporary loss of BMV agricultural land. Notwithstanding this, the Development would maintain sheep grazing activities on the site throughout the operational lifetime. Following cessation of use, the land will be returned to its full agricultural use, introducing a 40-year fallow period for the land to assist the

rebalancing of soil nutrients, re-establishing soil biota, breaking crop pest and disease cycles, and provide a haven for wildlife thus enhancing the quality of land for future agricultural use following decommissioning.

8.8. Through iterative design areas of high archaeological potential within the site have been avoided in the final design and effects on heritage assets are considered to be at worst less than substantial and at the lowest end of the spectrum.

8.9. The other environmental and technical reports (Arboricultural Impact Assessment, Flood Risk Assessment and Surface Water Drainage Strategy, Transport Statement, CTMP, Noise Assessment, Glint and Glare Assessment, Outline Battery Safety Management Plan) that form part of the planning application submission demonstrate that any environmental impacts would be localised and temporary, and there are a number of added benefits, including habitat creation and substantial biodiversity net-gain which significantly exceed the requirements of planning policy and legislation.

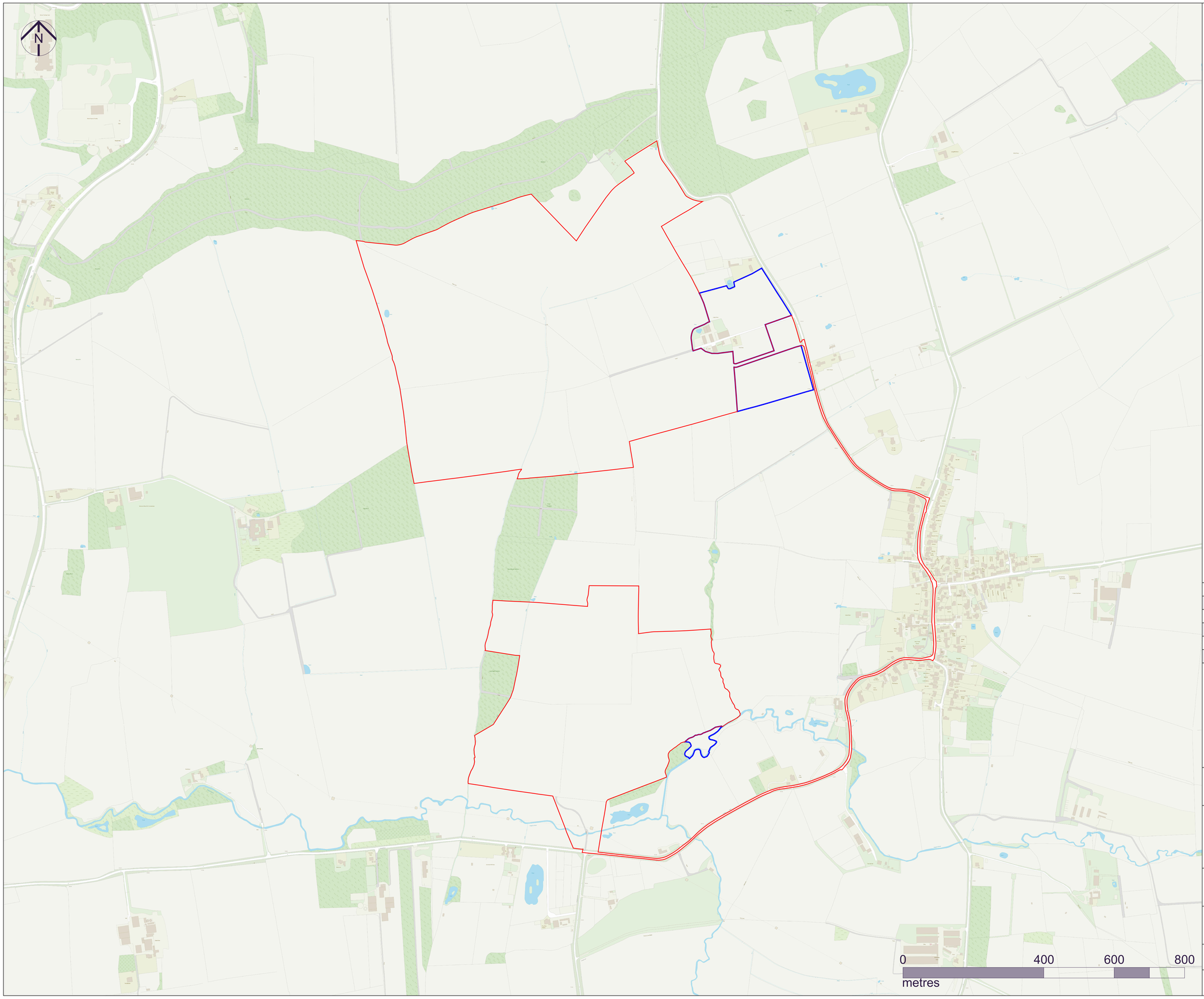
8.10. Overall, the proposals are considered entirely suitable to the Site and its surrounds; is consistent with Planning Policy and all relevant material planning considerations; and will achieve a high-quality design as envisaged by the Applicant and as required by RBC.

8.11. Reflecting on the planning balance and turning to sustainable development, it is widely understood in planning that there are three dimensions to sustainable development, these are economic, social and environmental. National Policy advises that in order to achieve sustainable development, economic, social and environmental gains should be pursued in mutually supportive ways through the planning system. The Development has been shown to achieve the main objectives of sustainable development (environmental, social and economic) without causing undue detriment to any of these matters. As the NPPF at paragraph 14 directs, in circumstances where the application complies with the Development Plan, the application should be approved without delay.

8.12. These factors, when combined with the significant need for renewable energy, mean that the planning balance (and, in particular, when considered in the context of the tests under Section 38(6) Planning and Compulsory Purchase Act 2004) is weighted significantly in favour of the Development.

8.13. It is therefore submitted that the application proposal constitutes a scheme which should gain the weight of national energy and planning policy support for such developments and should be approved without delay.

Appendix 1 – Site Location Plan



Notes:
View in conjunction with all relevant documents.
All dimensions to be checked on site before proceeding with work.
To be used only for the status specified.
The information contained therein must not be copied or reproduced in any form without written permission.
All dimensions, levels, and coordinates are in metres unless defined.
All areas are approximate and indicative only.
All omissions and discrepancies to be reported in writing to Exagen Development Ltd.
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Key
- Planning Application Boundary
- Land Under the Applicant's Control

Rev	Date	Description

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Client
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Drawing title
Boundaries Plan

Project
Old Wood Energy Park

Status
Planning Application

Date	Scale at A1	Status code
30/11/2023	1:5000	S4

Drawing number	Revision
WLL02A-EXG-00-00-D-K010	P01

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Drawing title
Existing Site Location Plan

Project
Old Wood Energy Park

Status
Planning Application

Date	Scale at A1	Status code
30/11/2023	1:5000	S4

Drawing number	Revision
WLL02A-EXG-00-00-D-K011	P01

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Drawing title
Boundaries Plan North

Project
Old Wood Energy Park

Status
Planning Application

Date	Scale at A3	Status code
11/12/2023	1:2500	S4

Drawing number	Revision
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Client
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Drawing title
Boundaries Plan South

Project
Old Wood Energy Park

Status
Planning Application

Date	Scale at A3	Status code
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Drawing number	Revision
WLL02A-EXG-00-00-D-K013	P01

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Appendix 2 – Energy Policy Statement

1. Introduction

1.1. This Energy Policy Statement has been prepared by Pegasus on behalf of Exagen Development Ltd and should be read in conjunction with the supporting Planning Statement and other technical documents that accompany the pre-application advice request. Planning permission is sought for the construction, operation and subsequent decommissioning of a renewable energy park comprising ground mounted Solar Photovoltaics (PV) with co-located battery energy storage at the point of connection, together with associated infrastructure, access and landscaping. The Development is laid out across two separate Site Parcels, located on land to the west of Wysall, Nottinghamshire.

1.2. The purpose of this report is to highlight the legislative background and support for standalone renewable energy schemes, and solar technologies in particular, as part of both local climate change mitigation and wider national targets on the use of renewables in the UK. These documents form key components of central and local Government's policy and commitments to renewable and low carbon energy and should be considered material to the determination of this scheme.

2. Background

2.1. The background to the drive to increase the use of renewable sources of energy has its roots in the recognition that the burning of fossil fuels has an adverse effect on the climate of the world as a whole and that global measures are required to deal with it. The extensive use of fossil fuels that accompanied the industrialisation of the world's economy has released large volumes of CO2 back into the atmosphere. The accumulation of greenhouse gases in the upper atmosphere reduces the planet's ability to reflect solar radiation back into space, resulting in a gradual increase in mean global air temperature.

2.2. The scientific evidence on climate change is summarised in 'Climate Change Explained' first published on 23 October 2014 by the Department of Energy and Climate Change. To summarise, it states that there is clear evidence to show that climate change is happening. Measurements show that the average temperature at the Earth's surface has risen by about 0.8°C over the last century. 13 of the 14 warmest years on record have occurred in the 21st century and in the last 30 years each decade has been hotter than the previous one. This change in temperature hasn't been the same everywhere; the increase has been greater over land than over the oceans and has been particularly fast in the Arctic.

2.3. The UK is already affected by rising temperatures. The average temperature in Britain is now 1 Degree Celsius higher than it was 100 years ago and 0.5 Degree Celsius higher than it was in the 1970s.

2.4. Although it is clear that the climate is warming in the long-term, temperatures aren't expected to rise every single year. Natural fluctuations will still cause unusually cold years and seasons. Along with warming at the Earth's surface, many other changes in the climate are occurring:

- warming oceans;

- melting polar ice and glaciers;
- rising sea levels; and
- more extreme weather events.

2.5. Rising levels of carbon dioxide and other gases, such as methane, in the atmosphere create a 'greenhouse effect', trapping the Sun's energy and causing the Earth, and in particular the oceans, to warm. Heating of the oceans accounts for over nine tenths of the trapped energy. Scientists have known about this greenhouse effect since the 19th Century.

2.6. The higher the amounts of greenhouse gases in the atmosphere, the warmer the Earth becomes. Recent climate change is happening largely as a result of this warming, with smaller contributions from natural influences like variations in the Sun's output.

2.7. Carbon dioxide levels have increased by more than 40% since before the industrial revolution. Other greenhouse gases have increased by similarly large amounts. All the evidence shows that this increase in greenhouse gases is almost entirely due to human activity. The main contribution to this is the burning of fossil fuels for energy.

2.8. About 43% of the carbon dioxide produced goes into the atmosphere, and the rest is absorbed by plants and the oceans. Deforestation reduces the number of trees absorbing carbon dioxide and releases the carbon contained in those trees.

2.9. The Government advises that if action is now taken to radically reduce greenhouse gas emissions, there's a good chance that we can limit average global temperature rises to 2 Degree Celsius. By taking action now we could:-

- Avoid burdening future generations with greater impacts and costs of climate change;
- Enable economies to cope better by mitigating environmental risks and improving energy efficiency there will be wider benefits to health, energy security and biodiversity; and
- Benefit economically because if we delay acting on emissions, it will only mean more radical intervention in the future at greater cost.

2.10. It is also recognised that taking action now can also help to achieve long-term, sustainable economic growth from a low-carbon economy.

2.11. There is a plethora of Government legislation, guidance and policy which support the transition to a low carbon future and the continued roll out of renewables and low carbon energy and associated infrastructure. The UK is part of an international effort to combat climate change. The UK is a party to the United Nations Framework Convention on Climate Change (UNFCCC) and as such has signed up to international climate change obligations, such as the Kyoto Protocol and the Paris Agreement.

3. National Legislative Context & Guidance

3.1. With regards to the need for development, the explicit need to introduce a step change in how the country deals with climate change was recognised via the UK Government's declaration of an environmental and climate change emergency on 1 May 2019, following the findings of the Intergovernmental Panel on Climate Change (IPCC) who concluded that, to avoid a greater than 1.5°C rise in global warming, global emissions would need to fall by around 45 per cent from 2010 levels by 2030, and reach net zero by 2050 at the very latest.

3.2. The recently published IPCC Sixth Assessment report is a stark warning of the devastation that will be unleashed if we fail to urgently limit global temperature rises, and has been referred to as a "Code Red for Humanity "by the Secretary- General of the UN, António Guterres, illustrating the urgent and desperate need for rapid decarbonisation.

3.3. Through their climate emergency declaration, the Government recognises the need to move swiftly to capture economic opportunities and green jobs in the low carbon economy while managing risks for workers and communities currently reliant on carbon intensive sectors. As part of its contributions to international efforts, the UK also has domestic legislation and policies in place to reduce greenhouse gas emissions. These are focused on a number of key climate change challenges, these include:

- The reduction of CO2 emissions to tackle climate change;
- The promotion of competitive energy markets in the UK; and
- Security of decentralised energy supplies.

3.4. This subsection goes on to summarise the following relevant provisions:

Committee on Climate Change (CCC)

3.5. The UK Committee on Climate Change advises the government on progress on tackling climate change.

3.6. In June 2020, the Committee on Climate Change published its Reducing UK Emissions report which provides an annual review of UK progress in reducing greenhouse gas emissions. This was the first annual report since the UK set a legally binding 'net zero by 2050' target and was originally due to be released in the lead up to the UN climate conference COP26 in Glasgow (before this was postponed until 2021). Since the publication of the first Progress Report in June 2020, two further annual Progress Reports have been published by CCC in June 2021 and June 2022 respectively.

3.7. The report provides comprehensive overview of the UK Government's progress to date in reducing emissions and includes important new advice to Government to ensure that the UK remains on track with emissions targets in line with the Long-term temperature goal of the Paris Agreement. The key messages taken from the latest CCC Progress Report (June 2022) set out:

- **The UK Government now has a solid Net Zero strategy in place,** but important policy gaps remain.

- **Tangible progress is lagging the policy ambition.** With an emissions path set for the UK and the Net Zero Strategy published, greater emphasis and focus must be placed on delivery.

- **Successful delivery of changes on the ground requires active management of delivery risks.** Not all policies will deliver as planned. Some may be more successful than expected, while others will fall behind.

- **Action to address the rising cost of living should be aligned with Net Zero.** There remains an urgent need for equivalent action to reduce demand for fossil fuels to reduce emissions and limit energy bills.

- **Slow progress on wider enablers.** The Net Zero Strategy contained warm words on many of the cross-cutting enablers of the transition, but there has been little concrete progress.

- **The UK must build on a successful COP26**. The UK presidency of the UN COP26 climate summit in Glasgow last November successfully strengthened long-term global ambition and introduced new mechanisms to support delivery. It should prioritise making those new mechanisms work in practice and strengthening global 2030 ambition, while preparing for a focus on climate finance and adaptation at COP27 in 2022 and COP28 in 2023.

Climate Change Act 2008 and the Climate Change Act 2008 (2050 Target Amendment) Order 2019

3.8. As part of its contributions to international efforts, the UK also has domestic legislation and policies in place to reduce greenhouse gas emissions. The Climate Change Act 2008 established long-term statutory targets for the UK to achieve reductions in greenhouse gases by 2050 against a 1990 baseline. The Act originally set a legally binding target of an 80% cut in greenhouse gas emissions by 2050. On 12 June 2019, as a direct response to the climate change emergency declaration, the Government laid the draft Climate Change Act 2008 (2050 Target Amendment) Order 2019 to amend the Climate Change Act 2008 by introducing a target for at least a 100% reduction of greenhouse gas emissions (compared to 1990 levels) in the UK by 2050. This is otherwise known as a net zero target because some emissions can remain if they are offset by removal from the atmosphere and/or by trading in carbon units. The legislation was signed into law on 27 June 2019, following approval by the House of Commons and the House of Lords.

3.9. Following the Climate Change Committee's advice on the Sixth Carbon Budget, Prime Minister Boris Johnson agreed to legislate a new target to reduce national emissions by 78% by 2035, with the target enshrined in law at the end of June 2020. This builds on the nations new Nationally Determined Contribution (NDC) to the Paris Agreement, which will see the UK reduce emissions by 68% by 2030 compared to 1990 levels.

The Energy White Paper (2020)

3.10. The Energy White Paper ("EWP") was presented to Parliament on 14 December 2020 and builds upon the Prime Minister's Ten Point plan for a Green Industrial Revolution (which is discussed below).

3.11. The EWP sets out ambitious plans offering support for a variety of technologies and committing funds to support the growth of low-carbon green-technologies. It is intended to

entirely reshape British industry and the economy. At the core of the EWP is the commitment to achieve Net Zero and tackle climate change.

3.12. In the introduction to the EWP (pages 2 and 3), the former Secretary of State for BEIS, Alok Sharma MP, states (inter alia):

> *"The government presents this white paper at a time of unprecedented peacetime challenge to our country. Coronavirus has taken a heavy toll on our society and on our economy. But we will overcome COVID-19 and rebuild our economy, building back better and levelling up the country. As we do so, we must address the intergenerational challenge of climate change. Unchecked, the impact of rising global temperatures represents an existential threat to the planet. So, building back better means building back greener.*
>
> *This white paper puts net zero and our effort to fight climate change at its core, following the Prime Minister's Ten Point Plan for a Green Industrial Revolution. The Ten Point Plan sets out how government investment will leverage billions of pounds more of private investment and support up to 250,000 jobs by 2030.*
>
> *The way we produce and use energy is therefore at the heart of this. Our success will rest on a decisive shift away from fossil fuels to using clean energy for heat and industrial processes, as much as for electricity generation. These are more than academic considerations; the shift to net zero will affect us all. This white paper presents a vision of how we make the transition to clean energy by 2050 and what this will mean for us as consumers of energy in our homes and places of work, or for how businesses use energy to produce goods and services.".*

3.13. The EWP seeks to put in place a strategy for the wider energy system that transforms energy and supports a green recovery (page 4).

3.14. Page 5 of the EWP sets out the Government's 'Compelling case for tackling climate change'. The salient points presented by Government are (inter alia):

- We need to act urgently. The future impacts of climate change depend upon how much we can hold down the rising global temperature. To minimise the risk of dangerous climate change, the landmark Paris Agreement of 2015 aims to halt global warming at well below 2°C, while pursuing efforts to limit it to 1.5°C, increasing measures to adapt to climate change, and aligning financial systems to these goals.

- At the global scale, however, we are not presently on track to reach the temperature goal of the Paris Agreement. Based on current national pledges, and assuming the level of ambition does not change, the world is heading for around 3°C of warming by the end of the century.

- The cost of inaction is too high. We can expect to see severe impacts under 3°C of warming. Globally, the chances of there being a major heatwave in any given year would increase to about 79 per cent, compared to a five per cent chance now. Many regions of the world would see what is now considered a 1-in-100-year drought happening every two to five years.

- To meet the temperature goal of the Paris Agreement, the world must collectively and rapidly reduce global emissions to net zero over the next 30 years. Success will mean

we are less exposed to flood and heat risks and preserve our national security, our prosperity, and our natural world which are threatened by the global disruption of climate change.

3.15. The Government recognises that decarbonising the energy system over the next thirty years means replacing, as far as it is possible to do so, fossil fuels with clean energy technology such as renewables (EWP Introduction, page 9). The EWP identifies how clean energy will become the predominant form of energy, entailing in a potential doubling of electricity demand and consequently a fourfold increase in low-carbon electricity generation (EWP Introduction, page 10). The Government recognises that growing and supporting green jobs across the country in green industries will also support a green recovery from COVID-19 (page 16).

3.16. The EWP, at page 43, identifies how the Government envisages that (inter alia) "While we are not planning for any specific technology solution, we can discern some key characteristics of the future generation mix. A low-cost, net zero consistent system is likely to be composed of predominantly wind and solar. But ensuring the system is also reliable, means intermittent renewables need to be complemented by technologies which provide power, or reduce demand, when the wind is not blowing, or the sun does not shine". Page 43 goes on to identify batteries as such a technology that can contribute towards the demand side response. Page 45 identifies how "Onshore wind and solar will be key building blocks of the future generation mix, along with offshore wind". It goes on to state how the Government recognised that sustained growth in the capacity of these sectors is needed over the next decade to ensure that we are on a pathway that allows us to meet net zero emissions in all demand scenarios.

UK Energy Security Strategy (2022)

3.17. On 7th April 2022, the Government published the UK Energy Security Strategy, a direct response to the energy market position following the significant spikes in energy prices resulting from the COVID-19 pandemic and Russia's invasion of Ukraine. Following the reopening of the global economy after the impacts of the COVID-19 pandemic, the sudden surge in demand for everything from foreign holidays to new cars has driven a significant spike in the demand for oil and gas, and consequentially greatly increasing the price of these fossil fuels. This has only been further compounded following the Russian invasion of Ukraine and the restrictions placed on Russian gas to the European market, which has resulted in prices increasing even further. As result of these factors, we have seen the price of European gas increasing by over 200% in the past 12 months, with coal prices increasing by over 100%. This has seen a record increase in global energy prices and had led to an inevitable rise in the cost of living within the UK as our energy mix is highly reliant on natural gas to generate electricity and also to heat the majority of the 28 million homes in the UK.

3.18. On the issue of affordability, a research briefing published by the Government on the House of Commons Library (Domestic Energy Prices, 6 January 2023) identifies that wholesale energy prices have increased rapidly from the second half of 2021 onwards, aided by the impacts of the Coronavirus Pandemic and Russia's invasion of Ukraine which has seen wholesale gas and oil prices dramatically increase over the past 12 months. This has been reflected in changes to the 'Default Tariff Cap' otherwise referred to as the energy price cap which covers prices for consumers on default or standard energy tariffs. The energy price cap was increased by Ofgem by 54% in April 2022 and was planned to be increased by a further 80% on October 1 2022.

3.19. It was announced by former Prime Minister Lizz Truss on 8th September 2022 that from 1 October the government would introduce a new Energy Price Guarantee, set at £2500 a year for typical levels of consumption and was originally planned to last a total of 2 years. Following a change in Prime Minister and Chancellor, the new Chancellor of the Exchequer announced that the Energy Price Guarantee would now only last a total of 6 months at its current level and then be increased by a further 20% in April 2023 for another 12 months. Whilst the energy Price Guarantee introduced by the Government is lower than the levels the energy price cap would have otherwise been increased to in Q4 2022 and Q1 2023, it will still mean average energy prices for households have seen increase of 27% in October 2022 and were originally due to increase a further 20% in April 2023.

3.20. On 15 June 2022, an article in the Sky News identified how the British Government has extended the life of a coal power plant in a bid to "bolster" energy security. This was a direct action to the uncertainty in Europe following the invasion, as the Government seeks to explore all options to bolster supply. This highlights the urgency for the acceleration of renewables and low carbon projects, such as the application proposal.[4]

3.21. The published Energy Security Strategy highlights the urgent need to both develop an energy system which is more self-sufficient and further accelerate the Country's transition away from oil and gas. The Strategy reiterates how Government will ensure a more flexible, efficient network system for both generators and users by encouraging the deployment of renewable energy generation technologies such as Solar PV and encouraging all forms of flexible electricity storage systems to balance the overall system and reduce overall costs of electricity.

3.22. It is acknowledged that this transition is not a fast process and is critically dependant on the speed at which we can deploy new renewable energy technologies. The UK Energy Security Strategy outlines the urgent need for the rapid deployment of a range of renewable technologies including on and off-shore wind, nuclear, solar and other technologies. It is acknowledged that net zero targets cannot be sustainably met through the exploitation of only one or a few technologies and requires the exploitation of all available renewable technologies. For ground mounted solar technologies, the new Energy Security Strategy states that the Government will:

> ***"...consult on amending planning rules to strengthen policy in favour of development on non-protected land, while ensuring communities continue to have a say and environmental protections remain in place.***
>
> ***We will continue supporting the effective use of land by encouraging large scale projects to locate on previously developed, or lower value land, where possible, and ensure projects are designed to avoid, mitigate, and where necessary, compensate for the impacts of using greenfield sites."***

UK's National Energy and Climate Plan (NECP)

3.23. BEIS published the UK's National Energy and Climate Plan (NECP) for 2021 to 2030, on 7 June 2021, in order to uphold the Government commitments under the Withdrawal Commitments .

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[4] https://news.sky.com/story/government-keeps-coal-power-station-open-to-boost-security-in-spite-of-lobbying-to-consign-coal-to-history-12633856

The NECP (at page 30) identifies how the EU has a target under the Renewable Energy Directive of 32% of energy coming from renewable sources in 2030, with Member States required to set their own nonbinding contributions to collectively achieve the EU target. As of 31 January 2020, the UK has left the EU and will therefore not contribute to EU targets or be bound by the RED after the Transition Period ends. However, to comply with Government commitments under the Withdrawal Agreement with respect to the NECP, the UK has set out a proportion of renewables in final energy consumption in 2030 of between 22%-29%. This represents a significant challenge as RED progress in 2020 is only 13.6 per cent.

Net Zero - Opportunities for the Power Sector

3.24. The National Infrastructure Commission (NIC) , official advisor to the Government on Infrastructure, has published a report (Net Zero - Opportunities for the Power Sector, March 2020) setting out the key infrastructure requirements needed to meet the UK's 2050 net-zero target, including the amount of renewable energy development that would need to be deployed.

3.25. The NIC recommends that in meeting these targets, the UK's energy mix needs to be made up of around 90% renewables. At page 18 of the report, it is recommended that across all scenarios, significant levels of solar, onshore wind and offshore wind, will need to be deployed in order to ensure that between 129 – 237 GW (gigawatts) of renewable energy capacity is in operation by 2050. To achieve this, the report recommends the following split:

- 56-121 GW of solar;
- 18-27 GW of onshore wind; and
- 54-86 GW of offshore wind.

3.26. To achieve the above targets would require a significant increase in installed solar capacity across the UK, including over nine times the current installed capacity of solar technologies in the UK, which as of September 2021 is around 13.6GW according to BEIS .

Clean Growth Strategy – Leading the way to a low carbon future (2017)

3.27. The Clean Growth Strategy, published in October 2017, sets out a comprehensive set of policies and proposals that aim to accelerate the pace of "clean growth", i.e. deliver increased economic growth and decreased emissions. The Executive Summary (page 9) confirms that for the UK to achieve its fourth and fifth carbon budgets (2023 - 2027 and 2028 - 2032) it will be necessary to drive a significant acceleration in the pace of decarbonisation.

3.28. To achieve the clean growth, the Government states that the UK will need to nurture low carbon technologies, processes and systems that are as cheap as possible, this includes subsidy-free ground mounted solar farms as per the Development. The Government places significant emphasis on securing increased investment across the energy systems whilst minimising, as much as possible, the public costs for securing such investments and makes multiple references to how they are seeking the delivery of solar without subsidy. Moreover, page 99 specifically states that the 'Government wants to see more people investing in solar without government support'. It estimates that the low carbon economy could grow 11% per year between 2015 and 2030, four times faster than the projected growth of the economy as a whole. The application proposal would clearly contribute to the delivery of the Clean Growth Strategy.

The Ten Point Plan for a Green Industrial Revolution (November 2020)

3.29. 'The Ten Point Plan for a Green Industrial Revolution – Building back better, supporting green jobs, and accelerating our path to net zero', was published on 18 November 2020 and is aimed at delivering a 'Green Industrial Revolution' in the UK, with the foreword by the Prime Minister stating that the Ten Point Plan will aim to mobilise £12 billion of government investment and potentially three times as much from the private sector, to create and support up to 250,000 green jobs. The Ten Point Plan is followed on from and built on by the Energy White Paper discussed above. Point ten seeks to accelerate the commercialisation of innovative low-carbon technologies, systems and processes in the power.

National Infrastructure Plan (HM Treasury, 2014)

3.30. The National Infrastructure Plan (NIP) 2014 presents an overview of the Government's policies, investments and record on infrastructure delivery since 2010 and details the Government's approach to ensuring that the Top 40 priority investments remain on track to deliver.

3.31. The report confirms a future pipeline investment of £80bn in energy infrastructure.

3.32. The stated objectives (paragraph 8.1) with regard to energy are to:

- ensure power, heat and transport are affordable for households and businesses
- provide energy security to facilitate day-to-day activities and support economic growth
- reduce carbon emissions in order to mitigate climate change and meet its legally binding targets

National Infrastructure Assessment (The National Infrastructure Commission, 2018)

3.33. The first National Infrastructure Assessment (NIA) set out the Commission's plan of action for the country's infrastructure over the next 10-30 years.

3.34. The NIA sets out a number of recommendations to a pathway for the UK's economic infrastructure:

- nationwide full fibre broadband by 2033
- half of the UK's power provided by renewables by 2030
- three quarters of plastic packaging recycled by 2030
- £43 billion of stable long term transport funding for regional cities
- preparing for 100 per cent electric vehicle sales by 2030
- ensuring resilience to extreme drought
- a national standard of flood resilience for all communities by 2050.

National Infrastructure Strategy: Fairer, faster, greener (HM Treasury, 2020)

3.35. The National Infrastructure Strategy (NIS) was published on 25 November 2020, a week after the Prime Minister's Ten Point Plan. The NIS sets out the Government's plans to deliver an infrastructure revolution in the UK, while "levelling the country up" and achieving its Net Zero target by 2050. The Government's plans to transform the UK's infrastructure networks. It is based around three central objectives: economic recovery (page 11); levelling up and strengthening the Union (page 12); and meeting the UK's net zero emissions target by 2050 (page 13).

3.36. Page 51 confirms (inter alia) "To deliver net zero, the share of generation from renewables needs to dramatically increase. While the UK leads the world in the deployment of offshore wind, greater generation capacity will need to come from onshore wind and solar as well".

3.37. Chapter 4 (page 68) recognises that record-breaking levels of investment in UK infrastructure will be required in the coming years to meet the Government's objectives for economic growth and decarbonisation. It goes on to state that the Government remains strongly committed to supporting private investment and maintaining the UK's status as a leading global destination for private investment.

3.38. Chapter 5 (page 78) of the NIS deals with the need to accelerate and improving delivery. It states (inter alia) "The government wants to deliver infrastructure projects better, greener and faster. That means addressing longstanding challenges such as complex planning processes, slow decision-making, and low productivity in the construction sector"

Net Zero Review: Interim report (December 2020)

3.39. HM Treasury's interim Net Zero Review (NZR) - the first of its kind from a finance ministry – was published on 17 December 2020 to inform next steps in the UK's transition to net zero by 2050. The NZR supports the government's work in maximising opportunities and benefits for the UK over the next 30 years as we transition to net zero and help to ensure an equitable balance of contributions between households, businesses and the taxpayer. The interim report contains initial analysis, rather than policy recommendations, which will guide further work ahead of the publication of the Review's final report next year.

3.40. The NZR (page 24) considers the potential changes in energy process for business and households and states (inter alia) *"Costs of wind and solar energy have already seen significant falls, and some forms of renewable electricity generation in the UK, such as onshore wind, are expected to have lower estimated costs per unit than electricity derived from fossil fuels. Lower long-run energy costs and greater energy efficiency could benefit both businesses and households. One of the priorities of the Energy White Paper is keeping energy bills affordable as the UK decarbonises, especially for the most vulnerable households. Analysis by the National Infrastructure Commission further suggests that household energy bills could be potentially lower or equal to current levels after switching to clean energy"*

3.41. The NZR (page 56) identifies how solar is a proven technology where market institutions are well established, and the technology is commercially viable.

Mission Zero – Independent Review of Net Zero (Rt Hon Chris Skidmore MP, January 2023)

3.42. A recent Independent Review of the UK's Net Zero Targets and current progress, published by the Rt Hon Chris Skidmore MP, makes several recommendations to the Government to

ensure UK remains on track to realise it Net zero targets by 2050. The main recommendations made to Government resulting from the review are as follows:

1. *Using infrastructure to unlock net zero*

   - *accelerating the implementation of the British Energy Security Strategy to update the mandate of Ofgem, creating the Future System Operator and accelerating the connection of cheaper renewables such as solar and onshore wind*

   - *developing a cross-sectoral infrastructure strategy by 2025 supporting the building and adaptation of infrastructure for electricity, hydrogen, other liquid and gaseous fuels and CO2 networks that support the green economy*

   - *reforming our approach to planning, so that where locally supported, more solar and onshore wind can be developed more easily, helping communities reap the benefits of cheaper low-carbon electricity*

2. *Creating sustainable governance structures for net zero*

   - *developing an over-arching government financing strategy by the end of 2023*

   - *establishing an Office for Net Zero Delivery, responsible for placing net zero delivery at the heart of government thinking*

3. *Backing businesses to go green*

   - *reviewing incentives for investment in decarbonisation, including via the tax system and capital allowances, and protecting British industries from environmental undercutting by progressing plans on carbon leakage measures and providing more detail on the UK's new Emissions Trading Scheme (ETS)*

   - *building skills needed for the transition by driving forward the Green Jobs Taskforce recommendations and launching a 'Help to Grow Green' campaign, offering information and support to SMEs to plan and invest in the transition*

4. *Catalysing local action*

   - *reforming the planning system at local and national level to place net zero at its heart*

   - *back at least one Trailblazer Net Zero City, local authority and community, with the aim for these places to reach net zero by 2030*

5. *Increasing transparency and engaging people*

   - *expanding the government's public reporting on net zero*

   - *ramping up public information through a new engagement plan, a new carbon calculator on the carbon cost of choices, and a standardised approach to ecolabelling on products*

   - *developing a Net Zero Charter mark, acknowledging 'best in class' among firms for their work in reaching net zero*

6. *Delivering cleaner, cheaper, greener homes*

- *legislating for the Future Homes Standard, meaning no new homes will be built with a gas boiler from 2025, and for all homes sold to be EPC C by 2033*
- *adopting a 10-year mission to make heat pumps a widespread technology in the UK and legislate for the end of new and replacement gas boilers by 2033 at the latest*
- *reforming EPC ratings to create a clearer, more accessible Net Zero Performance Certificate (NZPC) for households*

7. *Capitalising on international leadership*

- *conducting a strategic review on the UK's international climate leadership and introduce environmental and climate protections in future free trade agreements, removing trade barriers to environmental goods and services*

8. *Setting ourselves up for 2050 and beyond*

- *ramping up investment in research and development (R&D), with a new net zero R&D and technologies roadmap up to 2050, supporting up to 3 10-year demonstrator projects*

Industrial Decarbonisation Strategy, BEIS (March 2021)

3.43. The Industrial decarbonisation strategy sets out how industry can decarbonise in line with net zero while remaining competitive and without pushing emissions abroad. The strategy recognises that reaching the net zero target will require extensive, systematic changes across all sectors, including industry and emphasises that the 2020s will be a crucial decade to lay the foundation to enable the switch away from fossil fuel combustion to low carbon alternatives, including electrification, hydrogen, and biomass.

3.44. The strategy describes that to deliver net zero a minimum of 20TWh of fossil fuel use will need to be replaced by low carbon alternatives in 2030.

3.45. The scale and pace of decarbonisation required to achieve this target is therefore urgent.

3.46. The modelling contained within the report indicates that electrification of industry could reduce emissions by between 5 MtCO2e and 12.3 MtCO2e per annum by 2050 and describes that as new technologies emerge and renewable electricity prices continue to drop, electrification will become a more attractive option for industry. The role of smart technologies, such as storage and demand side response, are emphasised in relation to facilitating this transition and the report highlights at page 31 that "smart technologies, such as storage and demand-side response, can also provide flexibility to the electricity system, helping industrial consumers use energy when it is cheapest and cleanest".

3.47. The report makes clear that electricity networks will need to accommodate significant increased demand from the electrification of industrial processes and will therefore need to be fit for purpose to achieve this to achieve net zero. Increasing the flexibility of the electricity system will make a positive contribution towards achieving this objective.

Smart Systems and Flexibility Plan- Transitioning to a Net Zero Energy System, BEIS (July 2021)

3.48. The Smart Systems and Flexibility Plan sets out a vision, analysis and suite of policies to drive a net zero energy system and replaces the previously published 2017 plan.

3.49. The Ministerial Foreword to the Smart Systems and Flexibility Plan, 2021 makes clear that:

> *"The government is committed to leading the way in the transformation of our energy system. A smarter, more flexible system will utilise technologies such as energy storage and flexible demand to integrate high volumes of low carbon power, heat and transport and reach a carbon neutral future. A smart and flexible energy system can deliver significant benefits for consumers, the system and the wider economy whilst lowering carbon emissions."*

3.50. The Executive Summary emphasises the need to deliver system flexibility quickly:

> *"It will be very difficult to achieve the deep power sector decarbonisation needed to achieve the sixth Carbon Budget without significantly higher levels of system flexibility. The need for flexibility will rapidly increase as variable renewable power replaces fossil fuel sources, and we electrify heat and transport. The illustrative scenarios in our analysis indicate the scale of deployment that could be needed. Around 30GW of total low carbon flexible capacity in 2030, and 60GW in 2050, may be needed to maintain energy security and cost-effectively integrate high levels of renewable generation."*

3.51. The report highlights that this represents a significant increase in deployment needed relative to the 10GW of low carbon flexibility currently on the system and emphasises that failure to achieve the targets cited risks the need to have to build more fossil fuel generation instead to maintain energy security in the 2030s.

3.52. The report provides further breakdown and analysis of the various forms of technology which increase flexibility, including battery storage. Lithium-ion battery storage currently comprises approximately 1GW of the 4GW of electricity storage currently operation in Great Britain (the remaining 3GW provided by pumped hydro storage). Whilst the battery storage pipeline is highlighted as growing there is a need to significantly increase the deployment of battery storage to approximately 18GW by 2050.

National Grid Future Energy Scenario Report (FES), National Grid (July 2023)

3.53. The National Grid Future Energy Scenario (FES) report outlines how the energy system may need to transform to meet the target for net zero emissions by 2050. The FES illustrates four different, credible pathways for the future of energy between now and 2050: Falling Short; Customer Transformation; System Transformation; Leading the Way. Customer Transformation and System Transformation scenarios achieve net zero by 2050, with Leading the Way achieving it by 2046. The Falling Short Scenario doesn't get to Net Zero by 2050, diverging from carbon budgets around 2025, resulting in 179 Mt of residual annual emissions by 2050. The heat and road transport sectors are largely decarbonised by 2050 across all scenarios except Falling Short. However, even for the Net Zero scenarios, some sectors such as waste and aviation do not reach zero emissions by 2050, so the energy sector, particularly the power sector, must reach net negative emissions to balance this out.

3.54. Across all the four scenarios within National Grid's FES July 2023, the need for the rapid deployment of Solar PV generating development and increased energy storage capacity is emphasised. However, it is currently estimated that the targeted delivery of up to 70GW of Solar PV generation required under the British Energy Security Strategy by 2035, will only be met under two scenarios, with Leading the Way achieving this target by 2040 and Consumer Transformation achieving this target prior to 2050.

4. Digest of United Kingdom Energy Statistics (July 2023 Edition)

4.1. The Digest of United Kingdom Energy Statistics (DUKES) is the annual energy statistics publication produced by the Department for BEIS. It provides a detailed and comprehensive picture on the production and consumption of individual fuels and of energy as a whole. The digest is published annually, and the latest edition was published in July 2023. The salient points of the report are:

- Energy production rose by 3.1 per cent compared to the record low level of 2021. Oil production fell to a record low level and remains down by 28 per cent on pre-pandemic (2019) levels. Gas output rose by 16 per cent, nuclear output rose by 4.6 per cent despite reduced operational capacity, but coal reached another record low. Wind, solar and hydro output rose to a record high level due to increased capacity and more favourable weather conditions.

- Energy consumption in 2022 remained low, down 0.9 per cent on 2021 and down 11 per cent on 2019. Consumption levels in 2022 fell for all sectors except for transport due to warmer weather as well as the impact of higher prices towards the end of the year; industrial sector consumption fell by 3.8 per cent to a record low level.

- Net imports fell by 2.6 per cent. Imports increased by 11 per cent with gas imports at a record high level, and exports increased by 24 per cent with gas and electricity exports at record high levels, with the UK a net exporter of electricity for the first time in over 40 years. The UK has played a key role in supplying gas to Europe as it looks to move away from Russian gas. The UK's net import dependency stood at 37.3 per cent.

- The bulk of the UK's energy imports, over 90 per cent, comprise oil and gas and Norway is the UK's primary supplier of energy imports. The largest share of oil imports arrives from the US, whilst Norway provides the largest share of gas imports. Russian imports of oil and gas reduced significantly in 2022 and ceased by the end of the year and accounted for 2.6 per cent of total imports down from 9.6 per cent in 2021.

- Consumption of coal for electricity generation fell 15 per cent to 2.3 million tonnes in 2022. Wind generation was up 25 per cent due to higher-than-average wind speeds. Total renewable generation was up by 13 per cent in 2022, while gas and nuclear energy were also up (see Energy Trends table 5.4). Just four coal plants remained operational in the UK throughout 2022. Drax and West Burton had planned to close in Spring 2022 but remained available to ensure security of supply if needed over the winter. Coal use for

- electricity generation is expected to cease completely by October 2024.

- Oil formed 38 per cent of total energy demand in 2022. Following the upward trend since lows in 2020, demand for petroleum products increased by 10 per cent in 2022 compared to 2021. Much of this growth came from the transport sector, with road fuels accounting for a fifth of all UK energy demand in 2022.

- Natural gas made up 38 per cent of total energy demand and close to two thirds of domestic demand in 2022 and continues to play an important role in the UK energy mix. UK gas demand decreased by 7.9 per cent in 2022 compared with 2021, due to the warmest year on record, higher prices impacting on consumer behaviour, and record renewable output.

- Electricity demand decreased in 2022 to 320.7 TWh, down by 3.8 per cent from 2021. This is a larger year-on-year fall than in most recent years, driven by higher prices and the record high annual average temperature.

- Rising energy and other prices and higher average temperatures led to a record low domestic consumption, with industrial and commercial consumption also decreasing. Domestic consumption fell 10 per cent to 96.2 TWh while industrial consumption was down 2.7 per cent and consumption by other users (primarily commercial users) was down 0.7 per cent.

- Electricity generation rose in 2022 despite the low UK demand, as demand from Europe saw the UK switch to being a net exporter of electricity for the first time in over 40 years. Electricity generation rose to 325.3 TWh, 5.3 per cent higher than in 2021. Total imports fell to 15.5 TWh, half of 2021 levels. Meanwhile total exports increased fivefold compared to 2021, reaching 20.8 TWh, giving net exports of 5.3 TWh.

- Renewable generation reached record high levels in 2022, rising 10 per cent to 135.0 TWh, due to high output from wind and solar generators. This was driven by substantial increases in wind generation capacity and more favourable weather conditions compared to 2021. Bioenergy was the only renewable technology where generation decreased, as outages continued at key bioenergy sites.

- Fossil fuel generation increased 0.9 per cent in 2022 to 132.8 TWh, with more generation from gas. Coal generation continued to fall, down to the second lowest value on the published data series.

- The share of generation coming from low carbon sources rose to 56.2 per cent in 2022, the second highest value on the published data series. This came as the share of generation from renewable sources (41.5 per cent) exceeded the share from fossil fuels (40.8 per cent) for the second time.

- Renewable generation increased by 10 per cent in 2022 to a new record of 135.0 TWh. This was just 0.5 per cent higher than the previous record set in 2020 when unusually favourable weather conditions hit the UK. The key driver in 2022 was new capacity and an improvement in weather conditions compared to 2021. Within the technologies, records were set for onshore and offshore wind, solar PV, and anaerobic digestion.

- Renewable capacity increased by 7.7 per cent (3.8 GW), the highest growth rate since 2018 and just below the 3.9 GW installed in that year. This remains lower than

the average annual growth rate between 2012 and 2018 which was 20 per cent. Of the 3.8 GW new capacity in 2022, 2.7 GW was in offshore wind, 0.7 GW in solar PV, and 0.3 GW in onshore wind.

- As a share of gross final consumption, overall renewables accounted for 14 per cent, an increase of 0.8 percentage points in 2021, a combination of increases in renewable electricity generation and use of biofuels in transport, combined with a slight fall in total gross final consumption.

5. International Legislative Context

5.1. This section summarises the following relevant provisions:-

- 1992 United Nations Framework Convention on Climate Change;
- 1997 Kyoto Protocol on Climate Change;
- 2009 Copenhagen Accord;
- United Nations Climate Change Conference, Durban, 2011; and
- Warsaw Conference of the Parties 19 (COP19).

United Nations Framework Convention on Climate Change

5.2. This convention acknowledged the need to protect the global climate. It was opened for signature at the 'Earth Summit' that met in Rio de Janeiro in June 1992, coming into force in March 1994. Recognising that human-induced changes to the atmosphere are affecting the climate, it set out to ensure that atmospheric concentrations of greenhouse gases are stabilised at a safe level.

The Kyoto Protocol

5.3. The Kyoto Protocol to the United Nations Framework Convention on Climate Change (United Nations, 1997) was ratified by the UK in 2002. It sets obligatory targets for committed Annex I countries (including the UK) to take measures aimed at reducing greenhouse gas emissions, such as carbon dioxide (CO2), by an average of 5 % against 1990 levels over the five year period 2008 - 2012. Under the Kyoto Protocol, the UK's commitment is for a reduction in greenhouse gas emissions of 12.5 % from 1990 levels by 2012.

Copenhagen Accord

5.4. The Copenhagen Accord, agreed by leaders representing 49 countries, marks a significant step forward, with countries agreeing to limit global temperature increases to no more than 2°C and making substantial commitments to support developing countries to take action. As a party to the Copenhagen Accord, the United Kingdom has agreed a range of proclamations and objectives, including that:

- climate change is 'one of the greatest challenges of our time', which must be combated 'urgently';

- the ultimate objective is to stabilise greenhouse gas concentration in the atmosphere 'at a level that would prevent dangerous anthropogenic interference with the climate system';
- any increase in global temperature should be 'below 2 degrees Celsius';
- 'deep cuts' in emissions are required;
- emissions should peak 'as soon as possible'; and
- lower emissions are 'indispensable to sustainable development'.

United Nations Climate Change Conference, Durban, 2011

5.5. The Durban conference considered how to cut emissions to limit global temperature rise to below two degrees to avoid dangerous climate change. Over 120 countries formed a coalition behind the EU's proposal of a 'road map' to a global legally binding agreement, to be put in place by 2015, to curb emissions. The talks resulted in a decision to adopt the second commitment period of the Kyoto Protocol. The conference also agreed to establish a green climate fund to assist poorer countries to make the transition to a low carbon economy.

Warsaw COP19

5.6. At the UN Climate Change Conference in Warsaw 2013, governments took further essential decisions to stay on track towards securing a universal climate change agreement in 2015. The objective of the 2015 agreement is twofold: Firstly, to bind nations together into an effective global effort to reduce emissions rapidly enough to chart humanity's longer-term path out of the danger zone of climate change, while building adaptation capacity; Secondly, to stimulate faster and broader action now.

Glasgow COP26

5.7. More recently, Glasgow was host to the 26th UN Climate Change Conference between 31st October and 12th November 2012. The COP26 climate talks have focused on getting countries to strengthen their emissions-cutting targets by the end of next year in a bid to limit global warming to 1.5 degrees above pre- industrial levels. The talks resulted in not only an official agreement but a series of commitments under the Glasgow Pact to various mitigation and conservation efforts, including but not limited to a pledge to halt and reverse deforestation by 2030, an agreement to end overseas financing of oil and gas projects and an agreement to 'phase down' the use of unabated coal as well as the phasing out of inefficient fossil fuel subsidies.

Town & Country Planning Act 1990 (as amended)
Planning and Compulsory Purchase Act 2004

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