



Kirkby Battery Storage Facility

Land off Coopers Lane, Kirkby,
Knowsley

Planning Statement

Prepared for



Pelagic Energy

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1.0 INTRODUCTION AND BACKGROUND

1.1 Introduction

- 1.1.1 This Planning Statement ('PS') has been prepared in support of a planning application made by HD001KIR Limited (hereafter referred to as 'the Applicant' or 'Pelagic Energy') to install and operate a battery storage facility ('BSF') and ancillary infrastructure on land to the south of National Grid's 275/400kV substation, off Coopers Lane (A5208), Kirkby, Knowsley (hereafter referred to as 'the Site').
- 1.1.2 The location of the Site is illustrated on Planning Drawing 2569-02-001 and the planning application boundary is shown on Planning Drawing 2569-02-002.
- 1.1.3 This application is being made to Knowsley Metropolitan Borough Council (hereafter referred to as 'KMBC' or 'the Council') as the local planning authority.

1.2 Background

- 1.2.1 This application follows a planning permission for a scheme on the same site footprint by the Applicant for the installation of a gas peaking plant facility (under planning ref: 19/00147). The scheme (hereafter referred to as the 'Approved Gas Plant Scheme') was granted on 6th May 2019.
- 1.2.2 The Approved Gas Peaking Plant Scheme has not been built, but the permission has been implemented and secured in perpetuity via a material start to the development being made following the discharge of conditions precedent (i.e. the foundations of a gas kiosk have been constructed). Accordingly, the Approved Gas Plant Scheme is a material consideration in the determination of this application.

1.3 Scheme Overview

- 1.3.1 The Proposed Development would comprise the following elements:
- i) 58 no. containers housing Battery Energy Storage Systems ('BESS'). The containers include ventilation units for cooling and would be arranged in twin blocks on the Site.
 - ii) The containers would be supported by ancillary infrastructure including: 15 no. inverter/transformer stations, 1 no. external switchgear unit, 1 no. auxiliary transformer compound and 1 no. control room.



- iii) The containers and ancillary infrastructure would be located within a secure compound surrounded by a 2.4m high weldmesh fence with 6m high lighting / CCTV columns.
- 1.3.2 The layout of the Proposed Development is shown on Planning Drawing 2569-02-003 Rev A and elevations are provided on Planning Drawings 2569-02-005 Rev A, 2569-02-006 Rev A, 2569-02-007, 2569-02-008, and 2569-02-009.
- 1.3.3 The Site would be accessed via an existing access point off Coopers Lane to the west of the Site. This is the same access as consented for the Approved Gas Plant Scheme. Construction traffic would use the same access route.
- 1.3.4 The point of connection for the BSF to the electricity grid would be at the adjacent National Grid Substation to the northeast of the Site. The connection would be installed below ground by an Independent Connection Provider (ICP) contractor / statutory undertaker under permitted development rights. Accordingly, planning permission is not being sought for this element of the scheme.
- 1.3.5 The Proposed Development would be capable of importing (storing) electricity from the grid at times of excess supply in the system and exporting it back to the grid at times of high demand / reduced generation capacity. The Proposed Development is referred to by National Grid as a ‘balancing service’¹. It would assist in balancing grid frequency and voltage at times of system stress.
- 1.3.6 The Proposed Development would provide a flexible back-up power source to the grid and can respond rapidly to variations that result from local and national energy demand, alongside increasing fluctuations in generation resulting from an ever-greater use of intermittent renewable energy sources². Accordingly, the Proposed Development would contribute towards ensuring that there is a reliable and constant supply of electricity across National Grid’s transmission network.

¹<https://www.nationalgrideso.com/balancing-services>

²<http://www.telegraph.co.uk/business/2017/06/07/uk-sets-new-renewable-energy-record-wind-solar-surge/> a peak in renewables output occurred on 7th June 2017 as wind turbines and solar panels helped to meet more than half of the UK’s electricity demand. In addition, <https://www.renewableuk.com/news/431383/New-wind-generation-peak-rounds-off-record-breaking-year-for-renewables.htm> which reports a number of key milestones in 2018.

1.4 The Applicant

- 1.4.1 The Applicant for the Proposed Development is Pelagic Energy (formerly Harbour Energy). Pelagic Energy is one of the largest developers of energy storage projects, flexible generation and solar farms in the UK. Pelagic Energy have projects across the UK from the South Coast to Glasgow and have secured a number of development opportunities adjacent to National Grid's Super Grid Transformer Substations across the UK.
- 1.4.2 National Grid's Super Grid Transformer Substations are strategically important infrastructure, required to maintain power supplies across the UK. Co-location of BSFs with Super Grid Transformer Substations ensures that transmission losses are minimised and that appropriate grid capacity is available for the strategic scale of development required to address the current shortfall in required energy storage capacity across the UK. In addition, the BSF compound and adjacent substation compound will contain visually compatible infrastructure, and this will assist in minimising any landscape and visual impacts.
- 1.4.3 Pelagic Energy have carried out a site screening exercise for National Grid's Super Grid Transformer Substations. Of the two hundred and ninety-eight (298) National Grid Super Grid Transformer Substations in the UK, only one hundred and sixty-eight (168) have capacity to accommodate a grid scale BSF. A significant number of these sites are constrained due to the close proximity of housing or other environmental constraints and, as a consequence, there are only a limited number of sites suitable for battery storage projects.
- 1.4.4 The proposed location at National Grid's 275/400kV Kirkby Substation is one of Pelagic Energy's leading sites due to the availability of suitable grid connection, its physical and visual separation from residential property (both existing and proposed), and screening vegetation.

1.5 Scope of the Planning Application

- 1.5.1 The application is contained within this PS, the Appendices, the planning application forms and certificates, and the planning drawings.
- 1.5.2 This PS is divided into seven main sections. Following on from this introduction, the sections are set out as follows:



- i) **Section 2.0** provides a description of the application site, its surroundings and its planning history;
- ii) **Section 3.0** provides a detailed description of the Proposed Development;
- iii) **Section 4.0** addresses the need for and benefits associated with the Proposed Development;
- iv) **Section 5.0** summarises the findings of the supporting technical assessments on the issues of noise, landscape and visual effects, drainage, ecology and nature conservation, and trees;
- v) **Section 6.0** sets out the planning policy context and provides an associated appraisal; and
- vi) **Section 7.0** provides a summary and draws concise conclusions regarding the acceptability of the Proposed Development in planning terms.

Need for EIA

- 1.5.3 BSFs are not specifically defined in the Town and Country Planning (Environment Impact Assessment) Regulations 2017³ (hereafter referred to as the 'EIA Regulations'). However, it is commonly accepted that they are a subset of energy generation in the planning system. As such, from an EIA perspective BSFs are generally defined under Schedule 2, Part 3 'Energy Industry' Section (a) '*Industrial installations for the production of electricity, steam and hot water*' to which the specified threshold is: "*the area of development exceeds 0.5 hectares.*" even though this relates to '*generation / production*' rather than '*storage*'.
- 1.5.4 The development area (the land within the red line shown on Planning Drawing 2569-02-002) covers a total area of 4,906m² (0.49ha). As such, the Proposed Development falls outside of the threshold to be considered as EIA.

Validation Requirements and Determination Period

- 1.5.5 The Proposed Development would occupy an area of 0.49ha and as such it would be below the site area threshold for classification as a 'Major' development in the Development Management Procedure (England) Order 2015.

³ <http://www.legislation.gov.uk/ukxi/2017/571/contents/made>



- 1.5.6 The only 'buildings' on the Site would be the Control Room and the Switchgear Building. The combined floor space of these elements would be approximately 60m² and as such this would be significantly below the 1,000m² floor space threshold for classification as a 'Major' development in the Development Management Procedure (England) Order 2015.
- 1.5.7 Accordingly, the application falls under 'Minor' development in respect of national validation requirements and the statutory determination period is 8 weeks beginning the day following which this application has been received.



2.0 THE SITE, ITS CONTEXT AND PLANNING HISTORY

2.1 Introduction

- 2.1.1 This section sets out the details of the proposal site and its wider context. Relevant planning applications made on the Site and in the adjacent area are then discussed.

2.2 The Site and its Surroundings

- 2.2.1 The Site is located to the south of National Grid's Substation on land off Coopers Lane, Kirkby, Knowsley. The location of the Site is shown on Drawing 2569-02-01 and the existing site layout is shown on 2569-02-04.

- 2.2.2 The Site covers an area of approximately 0.49ha and largely comprises grassed land with some limited scrub / self-sown trees. There is an existing concreted access road running from Coopers Lane. The topography of the Site is typically flat. A review of historic Ordnance Survey (OS) maps and aerial photography has established that the Site has not been previously developed. The Substation itself was first established in the 1960's.

- 2.2.3 To the west of the Site is the Brintonwood Trading Estate industrial estate. This is an extensive area of commercial and industrial uses on the east side of Kirkby. To the south and east of the Site there is a large expanse of woodland / scrubland with Knowsley Brook running through this area. Further south runs the A580.

- 2.2.4 To the northeast of the Site is the National Grid Substation which is the terminus for several overhead and underground power lines of strategic importance. The overhead power lines, pylons and substation apparatus dominate the local landscape setting, whilst industrial development is the character further afield.

- 2.2.5 The nearest residential properties to the Site are isolated homes off Hewitt's Lane (approx. 280m east), Perimeter Road (approx. 300m north), and Knowsley Lane (approx. 370m south). Existing vegetation surrounding the Site, along with the substation infrastructure, provide effective screening to these receptors.

2.3 Planning History

- 2.3.1 A review of KMBC's public access website has identified a single application on the site (that of the Approved Gas Plant Scheme) and is set out in the table below. Extensive energy infrastructure has been granted at the adjacent National Grid



Substation. Several of these applications have been included for reference in Table 1.1.

Table 1.1 – Planning History

Planning Application Ref:	Description	Status
19/00147/FUL	Installation of 11 no. 4.5MW gas engines with associated 33kV transformer, 11kV transformer, Switchgear Housing, Lubrication Tanks, Site Office, Metering and Gas Kiosks and Associated CCTV, Car Parking, Hardstanding and Fencing	Granted (10/10/2019)
93/00098/APP	Construction of Two Equipment Accommodation Modules and Erection of 2.5m High Steel Palisade Fencing (National Grid Substation)	Granted (05/11/1993)
00/00373/FUL	Siting of 1 No. Telecom Module in Freestanding Cabinet Together with Realignment of Existing Palisade and Electric Fencing (National Grid Substation)	Granted (14/09/2000)
07/00728/FUL	Erection of Extension to Kirkby 275kv Substation Comprising Super Grid Transformer and Related Electrical Plant (National Grid Substation)	Granted (18/10/2007)
12/00095/FUL	Extension to Sub-Station to Provide a 400kv Gas Insulated Sub-Station with Associated Supergrid Transformers, Switchgear, Control/Amenity Building and Access Road/Car Park (National Grid Substation)	Granted (07/09/2012)

2.4 Summary

2.4.1 In summary, there is an existing planning permission for a gas peaking plant development on the Site (the Approved Gas Plant Scheme). This has been implemented through a material start to the development.

2.4.2 Extensive planning applications associated with National Grid's strategic responsibilities have been granted for other energy-lead development at the adjacent Kirkby National Grid Substation.



3.0 THE PROPOSED DEVELOPMENT

3.1 Introduction

3.1.1 This section provides a description of the Proposed Development, together with details regarding its construction and operation.

3.1.2 The key components of the Proposed Development are as follows:

- i) 58 no. containers housing Battery Energy Storage Systems (BESS) sited on concrete plinths;
- ii) 15 no. battery inverter / transformer stations;
- iii) 1 no. client control room;
- iv) 1 no. switchgear unit;
- v) 1 no. auxiliary transformer;
- vi) 2.4m high steel palisade security fencing surrounding the entire BSF facility;
- vii) 6m high lighting / CCTV column points;
- viii) Gated entrance to the Site; and
- ix) Hardstanding access road

3.2 Description of Proposed Development

Battery Storage Facility, Ancillary Infrastructure and Compound

BESS Containers

3.2.1 The Proposed Development include 58 BESS containers, as illustrated on Planning Drawing 2569-02-003. Each BESS container would be situated on top of c. 0.4m long, 2.1m wide and 0.4m high concrete sleepers. The containers are c. 9.3m long, 1.78m wide and 2.6m high with ventilation and cooling units at either end, as illustrated on Planning Drawing 2569-02-005.

3.2.2 The BESS containers would be arranged in blocks to maximise the space of the Site. Each container would be finished in white and would be prefabricated off-site.

3.2.3 Two battery containers would be connected to each inverter/transformer station. Each inverter/transformer station would comprise inverters and a transformer, as illustrated on Planning Drawing 2569-02-006. The inverter would convert the supply between the direct current (DC) from the battery and alternating current (AC) from



the national grid and the transformer would step-up or step-down the voltage of the supply as required for transmission/storage.

- 3.2.4 The BESS units are able to import and store surplus electricity from the grid via the adjacent substation and export it back to the grid as and when required. The batteries are likely to be lithium-ion based, similar to those used in many modern electronics. To maintain internal operating conditions, each container would include heating, ventilation and air conditioning ('HVAC') end units.

Control Room

- 3.2.5 The Proposed Development includes a single Control Room, as illustrated on Planning Drawing 2569-02-008. The control room measures 9.73m long, 4.3m wide and 4.33m high.

MV Switch Room

- 3.2.6 As illustrated on Planning Drawing 2569-02-007, a Switchgear Container is included within the Site. This measures 12.3m long, 5.0m wide and 3.4m high.

Grid Connection

- 3.2.7 The Proposed Development would be connected to the National Grid substation and the local distribution network via underground cables.
- 3.2.8 It is anticipated that the grid connection between the Site and the adjacent National Grid Substation would be undertaken by an ICP (Independent Connection Provider), in accordance with the National Grid design requirements, under Permitted Development Rights. As such, these works do not form part of this planning application and are not included within the planning application boundary. However, the Applicant reserves the right to submit a standalone application to obtain planning permission for the grid connection, should it become necessary during the detailed design phase of the scheme.

Fencing, Security and Safety

- 3.2.9 Energy storage facilities are best located, as in this case, near to electricity substations or overhead lines and in industrial areas away from residential properties.



- 3.2.10 As the facility would store and supply electricity to the local power grid, safety and security is paramount. There is no public access to the Site and entry to the National Grid substation is security controlled.
- 3.2.11 The Proposed Development would be sited behind a 2.4m high security fence with a controlled vehicle access gate. Appropriate signage to adhere to HSE regulations would be clearly displayed.
- 3.2.12 An Alarm Receiving Company would be appointed to ensure that no one enters the Site when the facility is not occupied, and they will monitor the Site 24/7 and raise any necessary alarms with site management staff or the local police. The security system will include a Closed-Circuit TV (CCTV) system, motion sensors, tannoy system and security lights. It is anticipated that CCTV cameras would be fitted to the lighting columns (discussed below).

Lighting

- 3.2.13 To reduce light pollution and running costs, lighting at the Site would be kept to a minimum and it would only be used when maintenance staff are present on site to allow them to safely move around the Site. Lighting would be directional LED lighting with shrouds to prevent upwards light spillage. Lighting would be fitted to 6m high lighting columns around the BESS compound, as shown on the General Arrangement.

Access, Surfacing & Parking

- 3.2.14 Access to the Site would utilise an existing site entrance and access track off Coopers Lane. Based on preliminary swept path analysis of the largest delivery vehicle during construction, the Site entrance may require the slight realignment of one of the highway radius kerbs. This work would be undertaken under a Section 278 Agreement.
- 3.2.15 The Proposed Development would be surfaced with compacted stone to provide an even surface for vehicle movements and to provide a stable base for installation and maintenance cranes (when required). The BESS containers, switchgear units, auxiliary transformer compound, transformers, inverters, and control room would be positioned on concrete foundations. These areas would have a low permeability and have been treated as impermeable in the drainage strategy provided at Appendix D.



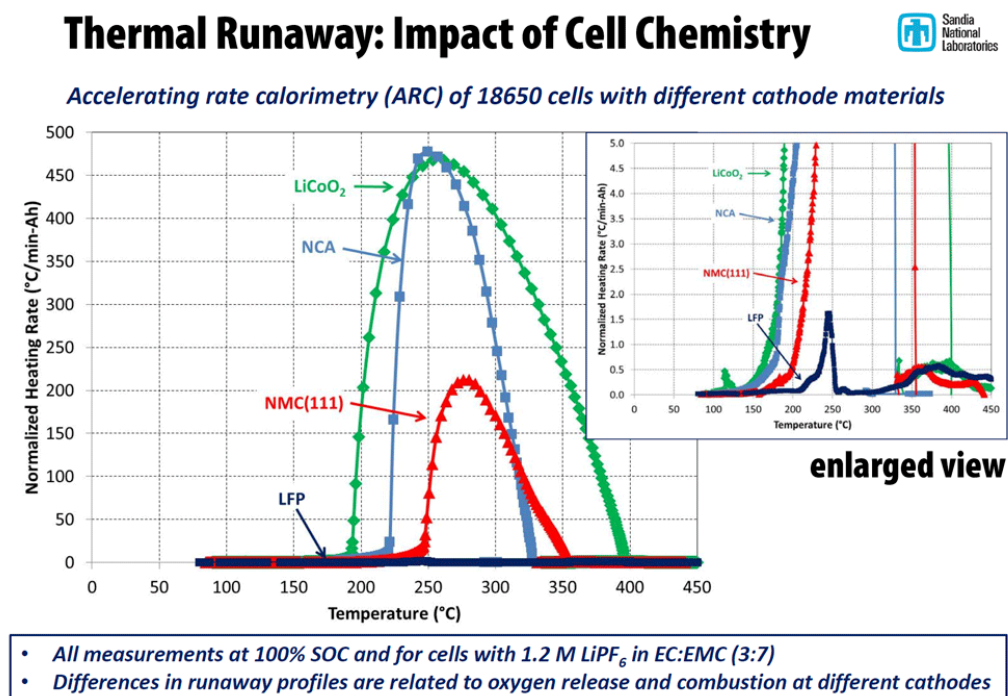
The remaining areas within the compound would be surfaced with free draining stone to allow infiltration to ground water, again in accordance with the drainage strategy and summarised below.

- 3.2.16 The areas of hardstanding on the Site would provide sufficient space for the occasional maintenance engineer vehicle to park while carrying out activities within the compound.

Fire Risk Management

- 3.2.17 In addition to the fire suppression safety measures and international safety standard for battery energy storage systems (BESS) modern battery systems utilise different lithium-ion chemistry to those batteries that have historically suffered from thermal runaway. Modern BESS containers utilise lithium iron phosphate (LFP) rather than Lithium Nickel Manganese Cobalt Oxide (NMC). The LFP chemistry is more thermal runaway resistant than the chemical compositions of other batteries, as illustrated on Figure 3.1 below.

Figure 3.1 Thermal Runaway of Battery Cells



- 3.2.18 LFP technology is not subject to thermal runaway phenomena to the same degree as other chemistries, with a temperature rise of barely 1.5°C per minute. With this very low level of energy released, the thermal runaway of the Lithium Iron Phosphate

technology is intrinsically impossible in normal operation, and even almost impossible to artificially trigger.

- 3.2.19 In addition, to the battery chemistry fire risk within the BESS is managed in a number of ways, including software and hardware fail safes and fire suppression systems. Temperature within each cell of each battery module is monitored by the BESS container monitoring system on a 1/10th second basis and any temperature variation within an individual module outside optimum operating conditions would trigger a response from the air conditioning units. If temperature increase continues or there is a failure of the air-conditioning units, the BESS container would automatically partially or fully shutdown to mitigate against the risk of thermal runaway and fire. The equipment installed will be specified to meet the highest international safety standards, namely NFPA 855 (National Fire Protection Association) and UL9540A.
- 3.2.20 In the very unlikely event of a battery fire in one of the modules a fire suppression system would be triggered automatically. The fire suppression system would comprise FM200 gas or similar. This is a waterless fire protection system and as such there is no risk to soils or ground water as a result of operation. FM200 would be discharged into the fire risk area and would suppress any fire immediately. FM200 is a synthetic/chemical fire suppression gas and extinguishes a fire by removing the free radicals or heat elements from the fire triangle. (Oxygen, Heat and Fuel). FM200 systems are widely used for confined spaces and reach extinguishing levels in 10 seconds or less, stopping fires before they cause significant damage. FM200 extinguishes the fire quickly, which means less damage to adjacent battery modules and lower repair costs. FM200 fire suppression is found as an active compound as a propellant in medical inhalers as such it is extremely safe with the correct fire suppression design. The Applicant will work with local fire and rescue department to ensure emergency response plans are consulted on and agreed ahead of operations. Compliance with best practice for industry standards such as those published by the National Fire Chiefs Council and Energy Safety Response Group would be ensured.



Drainage

Foul Drainage

- 3.2.21 As the site would not be permanently manned there is a very limited requirement for foul drainage to serve the welfare facilities and this would be provided by a septic tank or cesspit tank.

Surface Water

- 3.2.22 The Site is not currently surfaced and the Proposed Development would introduce areas of impermeable surfacing that could potentially increase surface water run-off rates from the Site. To mitigate this potential effect, a Sustainable Urban Drainage System (SuDS) would be used as set out in the drainage strategy provided at Appendix D. A review of geological, hydrogeological and soils data indicates that a SuDS infiltration system is likely to be suitable for the Site. As such, impermeable areas would drain to the areas of free draining stone that would be designed to allow infiltration to ground.
- 3.2.23 In the unlikely event that percolation testing indicates unsuitability for infiltration, the drainage strategy also considers on site attenuation and discharge to existing surface water features. If required, this would be subject to separate approvals.

Staff

- 3.2.24 The Proposed Development would not be permanently manned. However, a team of maintenance engineers would visit the Site on routine monthly maintenance visits. The Site would also be constantly monitored by staff remote from the Site throughout the day.
- 3.2.25 The Proposed Development is part of a wider business strategy to develop additional storage facilities elsewhere in the UK and additional staff opportunities would be created for overall management of the business and the trading of energy with the National Grid.

Traffic

- 3.2.26 During site operations, very limited traffic would be generated by the Proposed Development. This would be limited to visits by maintenance engineers using a van. There may be occasions where more major maintenance would be required that



might require a crane to be brought to the Site. However, this would be an infrequent event. As such the operational phase of the project would not generate any significant traffic impacts.

- 3.2.27 During construction, the maximum number of vehicles accessing the Site during the peak construction phase would be 4 low loaders and approximately 15 light vehicles per day.

Construction Phase

- 3.2.28 The construction phase is expected to last circa 6-8 months.

Operational Phase

- 3.2.29 During the operational phase, the Proposed Development would be controlled remotely as the facility is fully automated.

3.3 Comparison with Approved Gas Plant Scheme

- 3.3.1 The Proposed Development would sit on the same site footprint as that of the Approved Gas Plant Scheme. It would also utilise the same existing access off Coopers Lane. Whilst battery storage technology is different from a gas peaking plant, the function is similar in that they both provide grid balancing services.
- 3.3.2 The key benefit of battery storage over gas peaking plants (other than not producing aerial pollutants) is that, as well as being capable of providing power to the grid at times of need, it can also store surplus energy from the grid. This means that battery storage can harness surplus energy generated from renewables, such as wind or solar. Therefore, battery storage it is considered to be fully supportive of net zero targets.
- 3.3.3 In terms of the visual appearance of the two developments, the Proposed Development would have a significantly lower maximum development height (20m high exhaust stacks of the Approved Gas Plant Scheme versus 3m high BESS containers on the Proposed Development. The layouts of the development would be similar.
- 3.3.4 To illustrate the differing appearance of the two schemes, a 'Current and Proposed Elevations' comparison drawing has been provided at Figure 3.2 (included at the end of this PS).



4.0 NEED AND BENEFITS

4.1 Introduction

- 4.1.1 This section of the PS addresses the benefits of BSFs and the need for such facilities in respect of national policy and energy strategies.

4.2 Benefits of Battery Storage Facilities

- 4.2.1 This chapter of the PS considers the strategic need for the Proposed Development based on a review of Government Policy and Strategy.
- 4.2.2 BSFs provide a means of allowing electricity from the grid to be imported and stored at times of low demand / high generation, which can then be exported back into the grid at times of higher demand / system stress.
- 4.2.3 There is an ever-increasing reliance on renewable forms of energy generation, such as wind and solar, to supply the UK's energy demands. Renewable energy sources are highly variable due to their weather dependency. As a result of the intermittent nature of renewables and the continuous requirement for NG to balance grid frequency (within $\pm 1\%$ of nominal system frequency, which is 50.00Hz) supporting energy balancing solutions need to be incorporated into the UK's energy strategy.
- 4.2.4 System frequency is a continuously changing variable that is determined and controlled by the second-by-second (real time) balance between system demand and total generation. If demand is greater than generation, the frequency falls while if generation is greater than demand, the frequency rises. If the grid network is not maintained within the required frequency tolerance system stress can result in widespread power supply issues and damage to network infrastructure.
- 4.2.5 Battery storage is a key part of this energy strategy and provides NG with balancing services to help accommodate the increasing level of renewable energy generation.
- 4.2.6 Enhanced Frequency Response (EFR) is defined by NG as being: "a dynamic service where the active power changes proportionately in response to changes in system frequency. This service was aimed at improving the management of the



system frequency pre-fault to maintain system frequency closer to 50Hz.”⁴ EFR is borne out of the NG procurement exercise, which allows tenders to be submitted to deliver.

- 4.2.7 ability, batteries offer opportunities to support the intermittent nature of renewables by storing the excess energy they produce and importing it back into the grid when demand requires.
- 4.2.8 During situations when primary power sources (e.g., traditional power stations) are interrupted, BSFs can bridge the gap in production, thus avoiding potential blackouts. It should be noted that the UK electricity network is wholly interconnected and issues in one geographic location can have far reaching implications on the network. Accordingly, BSFs offer additional capacity to deal with system stress and any variations in grid frequency at both a local and national level.
- 4.2.9 As recognised by NG’s System Operability Framework (SOF)⁵ a: *“Faster response is more effective and so less response is needed if speed can be increased.”* BSF are able to respond more rapidly than other types of balancing services, as they have no start-up delays. As such BSF can balance the real-time requirements of the national grid more efficiently.

4.3 National Energy Policy and Strategy Context

- 4.3.1 The UK’s energy sector is currently experiencing a rapid change in response to efforts to address commitments and policies on tackling climate change. The explicit need to introduce a step change in how the country deals with climate change has been recognised by the UK Government. On 1 May 2019, an Environmental and Climate Change Emergency was declared following the finding of the Inter-governmental Panel on Climate Change. In order 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.
- 4.3.2 In June 2019, the UK became the first major economy in the world to pass laws to end its contribution to global warming by 2050. The Climate Change Act 2008 (2050

⁴ <https://www.nationalgrid.co.uk/balancing-services/frequency-response-services/enhanced-frequency-response-efr>

⁵ <http://www2.nationalgrid.com/UK/Industry-information/Future-of-Energy/System-Operability-Framework/>



Target Amendment) Order 2019 sets a legally binding target to bring all greenhouse gas emissions to net zero by 2050, compared with the previous target of at least 80% reduction from 1990 levels. In April 2021, the UK government announced that it intended to speed up the target to cut carbon emissions with a target of 78% cut by 2035.

- 4.3.3 This will inevitably see an increase in the development in renewable energy generation and this will need to be mirrored by similar increases in balancing services, such as the Proposed Development.
- 4.3.4 Two-thirds of existing traditional power stations in the UK are reaching the end of their operational lifespan and are anticipated to close by 2030. This fast-changing energy landscape coupled with an increasing reliance on renewable energy generation equates to a system of high grid frequency volatility. The UK is therefore facing a requirement to address our future energy demands and ensure that a system that is fit for purpose is developed.
- 4.3.5 In response to this requirement, the Government has set out a clear policy framework for the delivery of facilities to meet the UK's future energy demands. This section briefly describes that framework, and subsequently identifies the clear benefits of BSFs and their ability to contribute towards meeting the aims of Government energy policy.

National Policy Statement for Energy (EN-1) (July 2011)

- 4.3.6 In July 2011, the Department of Energy and Climate Change (DECC)⁶ published the overarching National Policy Statement (NPS) for Energy EN-1⁷. NPS EN-1 sets out national policy for energy infrastructure and states that: *"[it] is likely to be a material consideration in decision making on applications that fall under the Town and Country Planning Act 1990 (as amended)."* (paragraph 1.2.1).
- 4.3.7 In terms of energy security, NPS EN-1 states that: *"It is critical that the UK continues to have secure and reliable supplies of energy as we make the transition to a low carbon economy..."* (paragraph 2.2.20) since: *"...energy is vital to economic*

⁶ Now part of the Department for Business, Energy and Industrial Strategy.

⁷ <https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure>



prosperity and social well-being...” (Paragraph 2.2.1). In addition, the NPS recognises that a flexible approach to energy generation is required in order to provide backup supply for renewable energy sources, by stating: *“the more renewable generating capacity we have, the more generation capacity we will require overall, to provide back-up at times when the availability of intermittent renewable sources is low.”* (Paragraph 3.3.11).

- 4.3.8 Paragraph 3.3.11 also states that *“An increase in renewable electricity is essential to [...] help improve our energy security by reducing our dependence on imported fossil fuels, decrease greenhouse gas emissions and provide economic opportunities”*.
- 4.3.9 The NPS identifies that the overall capacity of the grid will require additional resources to meet future demands. This is reinforced by paragraph 3.3.12, which states: *“...we need more total electricity capacity than we have now, with a larger proportion being built only or mainly to perform back-up functions.”*
- 4.3.10 It is clear from a review of NPS EN-1 that the Government expect new balancing services to come forward through the planning system to ensure energy security and to support low carbon electricity generation. As such, the Proposed Development is considered consistent with the aims of NPS EN-1.

Draft National Policy Statements

- 4.3.11 Updates of the National Policy Statements were published for consultation on 30th March 2023.
- 4.3.12 Planning Act 2008 Guidance on the process for carrying out a review of existing NPSs states:

“Where a review is undertaken and a decision is made not to suspend the existing National Policy Statement (in whole or in part), it will continue to have effect for the purposes of the Planning Act. Any emerging draft National Policy Statements are potentially capable of being important and relevant considerations in the decision-making process, but the extent to which they are relevant is a matter for the relevant Secretary of State to consider with regard to the specific circumstances of each Development Consent Order application” (emphasis added).

- 4.3.13 Whilst the Proposed Development is being considered under the TACP Act (As amended), NPSs, and as referenced draft NPSs, can be a material consideration.

Draft National Policy Statement for Energy (EN-1) (March 2023)

- 4.3.14 The Draft NPS EN-1 sets out the government latest national policy for energy infrastructure and states that: *“There are several different types of electricity infrastructure that are needed to deliver our energy objectives. Additional generating plants, electricity storage, interconnectors and electricity networks all have a role, but none of them will enable us to meet these objectives in isolation.”* (paragraph 3.3.4).
- 4.3.15 Paragraph 3.3.6 states that *“storage and interconnection can provide flexibility, meaning that less of the output of a 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”* (emphasis added).
- 4.3.16 Paragraph 3.3.6 goes on, providing that: *“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). 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”* (emphasis added).
- 4.3.17 Paragraphs 3.3.25, 3.3.26 and 3.3.27 state that:
- “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”.*
- “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”.*
- “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” (emphasis added).

Energy Act 2013 (December 2013)

- 4.3.18 The Energy Act 2013 focuses on new incentives for low-carbon and secure electricity generation, needed to achieve the UK’s carbon emissions caps to 2020 and 2025 under carbon budgets.
- 4.3.19 The Energy Act expresses the Government view that the UK is at a critical juncture in the way it generates electricity (both for domestic and non-domestic use). Around a fifth of the capacity (available at 2011) is set to close over this decade, at a time when demand for electricity is expected to double from its current level by 2050. Set against this, the Government considers it is imperative that the right mechanisms are in place to attract the £110 billion investment needed to ensure that the UK can meet its requirements for secure flexible supplies at affordable prices.
- 4.3.20 The Proposed Development represents a significant financial investment and would contribute to meeting the investment requirements and energy security needs set out in the Energy Act.

Clean Growth Strategy (October 2017)

- 4.3.21 The Clean Growth Strategy⁸ was published in October 2017. The strategy outlines the ambition of delivering a: *“diverse electricity system that supplies our homes and businesses with secure, affordable and clean power.”* It goes on to state that this: *“... means upgrading our electricity system so it is smarter (using data to provide greater control), more flexible (providing energy when it is needed) and takes advantage of rapidly developing technologies such as energy storage...”* (page 95, emphasis added).

⁸ <https://www.gov.uk/government/publications/clean-growth-strategy>

4.3.22 Page 96 identifies that one possible clean growth pathway (to 2032): *“could see power emissions fall by 80 per cent compared to today, to around 16 Mt.”* it goes on to identify that: *“This could be achieved by:*

- i) Growing low carbon sources such as renewables and nuclear to over 80 per cent of electricity generation and phasing out unabated coal power.
- ii) Enabling a smarter, more flexible system, unlocking significant expansion of interconnection, electricity storage, and demand side response, the first steps of which are set out in the Smart Systems and Flexibility Plan...” (emphasis added)

4.3.23 A range of policies and proposals are set out within the strategy; those of relevance to the Proposed Development include:

- i) *“The Government, Ofgem and industry will implement the 29 actions set out in the Smart Systems and Flexibility Plan published on 24 July. These will enable technologies such as energy storage and demand side response to compete effectively within the energy market, help integrate more low carbon generation such as solar into our energy system, and deliver secure, smart appliances and smart tariffs to allow consumers to benefit from using energy at times when it is cheaper. Innovations and other steps to increase flexibility could unlock up to £40 billion in energy cost savings up to 2050.”*
- ii) *“We will work with Ofgem to ensure the necessary regulatory and market arrangements evolve to support the development of a clean, smart and flexible energy system as outlined in their strategy for regulating the future energy system.”*
- iii) *“The Government expects to invest around £900 million of public funds between 2015 and 2021 in research and innovation in the power sector.”* For power and smart systems, this includes: *“Ensuring that the power system is smart and resilient to new demands and new sources of supply will be important for energy security, cost and industrial opportunities. The Government, in partnership with the Research Councils and Innovate UK, expects to invest around £265 million in research, development and deployment in this area which will help to reduce the cost of electricity storage, advance innovative demand response technologies and develop new ways of balancing the grid...”* (emphasis added).

- 4.3.24 The Proposed Development would help deliver the flexible energy network and move to a low carbon economy envisaged by the strategy.

Single Department Plan (June 2019)

- 4.3.25 In June 2019, the Department for BEIS published ‘The Single Department Plan’⁹. The plan identifies five overarching objectives, including ensuring that: *“the UK has a reliable, low cost and clean energy system”*. This objective is broken down into the following sub-objectives:

- i) *“Set out a vision for the energy system consistent with the Government’s 2050 climate goals, with concrete actions that the Government will take up to 2030” – to be achieved by (amongst others): “delivering an ambitious Energy White Paper addressing the transformation of the GB electricity system, including proposed legislation where appropriate”; and “further developing carbon capture, use and storage deployment, to support decarbonisation and meet our legally binding carbon budgets, including potential ‘net zero’ by 2050.”*
- ii) *“Support clean growth and promote global action to tackle climate change” – to be achieved by (amongst others): “working with business...to deliver the Clean Growth Strategy, our legally binding greenhouse gas emissions reductions targets...”; “becoming the first major economy to legislate for net zero. Maintain the UK’s position as a global leader in cutting emissions while growing the economy, and develop world leading sectors to drive clean growth across the UK”; and “continuing to decarbonise the power sector by running the next Contracts for Difference allocation round to secure new renewable capacity.”*
- iii) *“Ensure our energy system is reliable and secure” – to be achieved by (amongst other): “ensuring reliable supplies of electricity and gas, including for example through...industry to reinstate the capacity market and undertaking a statutory 5-year review of the capacity market.”*
- iv) *“Deliver affordable energy for households and businesses” – to be achieved by: “continuing to implement the Government and Ofgem’s ‘Smart Systems and Flexibility Plan’ by 2022, removing barriers to smart technologies, enabling smart homes and businesses, and improving access to markets for new technologies and business models.”*

⁹ <https://www.gov.uk/government/publications/department-for-business-energy-and-industrial-strategy-single-departmental-plan>



Energy White Paper – Powering our Net Zero Future (December 2020)

- 4.3.26 In December 2020, the Department for BEIS published the Energy White Paper ‘Powering our Net Zero Future’¹⁰. This Paper addresses the transformation of our energy system and how the UK will clean up its energy system and reach net zero emissions by 2050.
- 4.3.27 The Paper’s ‘Ten Point Plan’ sets out, *inter alia*, the aim to quadruple offshore wind capacity by 2030, targeting 40GW of offshore wind by this date. This is a significant investment in the renewable energy industry. Supporting infrastructure on land (such as storage facilities) will be even more vital to maximise the potential to harness this energy across UK shores for use in homes and industry.
- 4.3.28 a storage facilities) will be even more vital to maximise the potential to harness this energy across UK shores for use in homes and industry.
- 4.3.29 The Paper sets out that “By 2050, we expect low-carbon options, such as clean hydrogen and long-duration storage, to satisfy the need for peaking capacity and ensure security of supply at low cost, likely eliminating the reliance on generation from unabated gas.” (emphasis added). It is clear from this that the UK Government sees storage as the way forward for peaking facilities and to ensure energy security.

IEA Net Zero by 2050 (May 2021)

- 4.3.30 The International Energy Agency (IEA) published their ‘Net Zero by 2050 – A Roadmap for the Global Energy Sector’¹¹ in May 2021. The report sets out clear milestones (more than 400 in total, spanning all sectors and technologies) for what needs to happen, and when, to transform the global economy from one dominated by fossil fuels into one powered predominantly by renewable energy.
- 4.3.31 The report sets out that: *“The rapid electrification of all sectors makes electricity even more central to energy security around the world that it is today – electricity system flexibility – needs to balance wind and solar with evolving demand patterns ... The*

¹⁰ <https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future>

¹¹ <https://www.iea.org/reports/net-zero-by-2050>



transition calls for major increases in all sources of flexibility [including batteries] ... supported by smarter and more digital electricity networks” (page 23).

- 4.3.32 The priority action box at the bottom of page 23 states that: *“The focus of energy security will evolve as reliance on renewable electricity grows and the role of oil and gas diminishes. Potential vulnerabilities from the increasing importance of electricity include the variability of supply and cybersecurity risks. Governments need to create markets for investment in batteries, digital solutions and electricity grids that reward flexibility and enable adequate and reliable supplies of electricity.”*
- 4.3.33 Section 2.5 sets out the key pillars of decarbonisation and states (on page 74) that: *“The rise in electricity demand also calls for extensive efforts to ensure the stability and flexibility of electricity supply through demand-side management, the operation of flexible low-emissions sources of generation including hydropower and bioenergy, and battery storage.”* The report also identified on page 94 identifies that: *“The additional electricity that would be needed could be produced using renewables, which would require an additional 1,700 GW of wind and solar PV capacity and almost 350 GW of additional battery capacity in 2050.”*
- 4.3.34 It is clear from the report that the rapid electrification of all sectors makes electricity even more central to energy security. As reliance on renewable electricity grows, the stability and flexibility of electricity supply through demand-side management (including battery storage) will also be necessary.

Net Zero Strategy: Build Back Greener

- 4.3.35 The Government published the ‘Net-Zero Strategy: Build Back Greener’ in October 2021¹². The Strategy sets out policies and proposals for decarbonising all sectors of the UK economy to meet the net-zero target and keep us on track for future carbon budgets.
- 4.3.36 In terms of policies and proposals for power, Chapter 3i ‘Reducing Emissions across the Economy - Power’ sets out on pages 94 and 95 that, subject to security of supply, government’s commitment to a fully decarbonised power system will be brought

¹² https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1033990/net-zero-strategy-beis.pdf (CD34)



forward to 2035. It also seeks to accelerate deployment of low-cost renewable generation, such as wind and solar, and to ensure that the planning system supports the deployment of low carbon energy infrastructure.

- 4.3.37 Decarbonising the power sector forms the foundation of a productive net zero economy and needs to meet a 40-60% increase in demand by 2035. The strategy also identifies that this will regenerate communities and create new employment opportunities right around the UK (paragraph 20, page 99)
- 4.3.38 The strategy recognises that decarbonising gas heating is likely to take longer than decarbonising the electricity system and as such heat pumps and a high electrification scenario, as per National Grid's future energy scenarios (FES), is the most likely to 2035.
- 4.3.39 The Net Zero Strategy sets out on Page 78 that *"this means increased investment in the grid network, electricity storage solutions and flexible grid management, to ensure decarbonisation without risking security of supply"* (emphasis added).
- 4.3.40 In terms of economic development, the strategy suggests that *"increased deployment of storage and demand side flexibility could support up to 7,000 jobs, levelling up the power sector across Great Britain"*. (page 99)
- 4.3.41 The Proposed Development would deliver the electricity storage solutions envisaged by the Net Zero Strategy.

Upgrading our Energy System: Transitioning to a Net Zero Energy System: Smart Systems and Flexibility Plan (2021)

- 4.3.42 In July 2021 the Department for Business Energy and Industrial Strategy (BEIS) published the 'Smart Systems and Flexibility Plan 2021'¹³ in conjunction with Ofgem. The plan sets out a vision, analysis and work programme aimed toward delivering flexible electricity systems that will underpin energy security and the transition to a net zero 2050. The plan is broken down into five sections. Notably, *"Chapter 2: Removing barriers to flexibility on the grid: electricity storage and interconnection"*

¹³ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1003778/smart-systems-and-flexibility-plan-2021.pdf (CD35)



which sets out methods for addressing policy and regulatory barriers to electricity storage.

- 4.3.43 Page 37 of the plan states energy battery storage is targeted to provide *“significant flexibility to the system...and helping to address many of the challenges presented by a low carbon system, including maintaining energy security”* by 2030. It continues; *“It [electricity storage] is essential to a net zero system as it can store electricity when it is abundant (e.g. when it is windy or sunny) for periods when it is scarce (e.g. when demand is higher).”*
- 4.3.44 Page 5 of the plan notes that BEIS and Ofgem analysis shows around 30GW of carbon flexible capacity could be needed as early as 2030, and 60GW by 2050. There is a clear need for increased electricity storage to achieve these targets as page 40 notes a total of 4GW of electricity storage was operational in Great Britain as of the publication date, of which just 1GW was made up of lithium-ion battery storage.
- 4.3.45 The Proposed Development would help deliver the flexible energy network envisaged by the plan.

British Energy Security Strategy (April 2022)

- 4.3.46 The British Energy Security Strategy was published in April 2022. Under the sub-heading of ‘Networks, storage and flexibility’ the strategy sets out that: *“accelerating our domestic supply of clean and affordable electricity also requires accelerating the connecting network of infrastructure to support it. Within this decade, our modern system will prioritise two key features: anticipating need because planning ahead minimises cost and public disruption; and hyper-flexibility in matching supply and demand so that minimal energy is wasted. This more efficient, locally-responsive system could bring down costs by up to £10 billion a year by 2050.”* (page 24).
- 4.3.47 The strategy sets out that the Government will ensure a more flexible, efficient system for both generators and users by (amongst others): *“Encouraging all forms of flexibility with sufficient large-scale, long-duration electricity storage to balance the overall system by developing appropriate policy to enable investment”* and *“Smartening up the system with more flexible pricing, through Time of Use tariffs and battery storage through Electric Vehicles”* (pages 24 and 25).



National Grid Predicted Future Requirements

- 4.3.48 National Grid ESO publishes a suite of documents on the future of energy needs in the UK annually. Those considered to be of most relevance to the Proposed Development are the latest Future Energy Scenarios¹⁴ and System Operability Framework¹⁵ documents, both of which are considered in turn below.

Future Energy Scenarios

- 4.3.49 The latest publication of the UK-wide Future Energy Scenarios (FES) was published in July 2023¹⁶. The document sets out in the foreword that: *“The FES sets out credible ways that the UK can achieve Net Zero by 2050, as well as the UK Government’s commitment to a decarbonised electricity system by 2035...Our 2023 Future Energy Scenarios highlight one key overall theme – we must act now to achieve a clean, secure and fir energy system for all. If we don’t, a once in a lifetime opportunity will pass us by.”*
- 4.3.50 The FES outlines four different credible pathways (or ‘scenarios’), based around two drivers: the speed of decarbonisation and the level of decentralisation, for future energy between now and 2050. Each considers how much energy might needed and where it would come from.
- 4.3.51 The four scenarios are: (1) Leading the Way; (2) Consumer Transformation; (3) System Transformation; and (4) Falling Short. The latter was the ‘Steady Progression’ scenario in previous versions of the FES but was renamed to reinforce how this scenario does not meet the Net Zero target by 2050. They are illustrated in Figure 4.1 below.

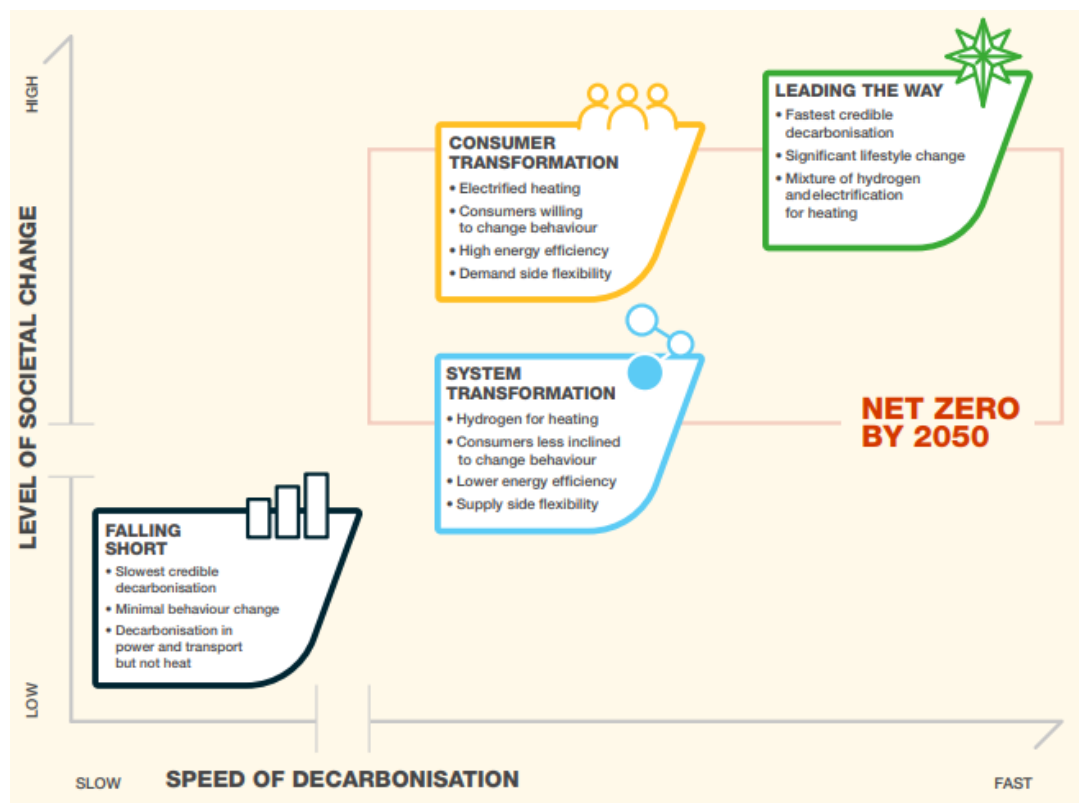
¹⁴ <http://fes.nationalgrid.com/>

¹⁵ <https://www.nationalgrideso.com/research-and-publications/system-operability-framework-sof>

¹⁶ <https://www.nationalgrideso.com/future-energy/future-energy-scenarios/documents>



Figure 4.1: Future Energy Scenarios: Scenario Matrix



4.3.52 All four scenarios have net zero at their core and explore different pathways to achieving this. One of the headline messages is that reaching net zero carbon emissions by 2050 is achievable. However, this requires immediate action across all key technologies and policy areas, and full engagement across society and end consumers. The ‘Consumer Transformation’ and ‘System Transformation’ scenarios both hit the target of zero emissions in 2050, and ‘Leading the Way’ achieves the target slightly earlier in 2046. ‘Falling Short’ would not achieve net zero.

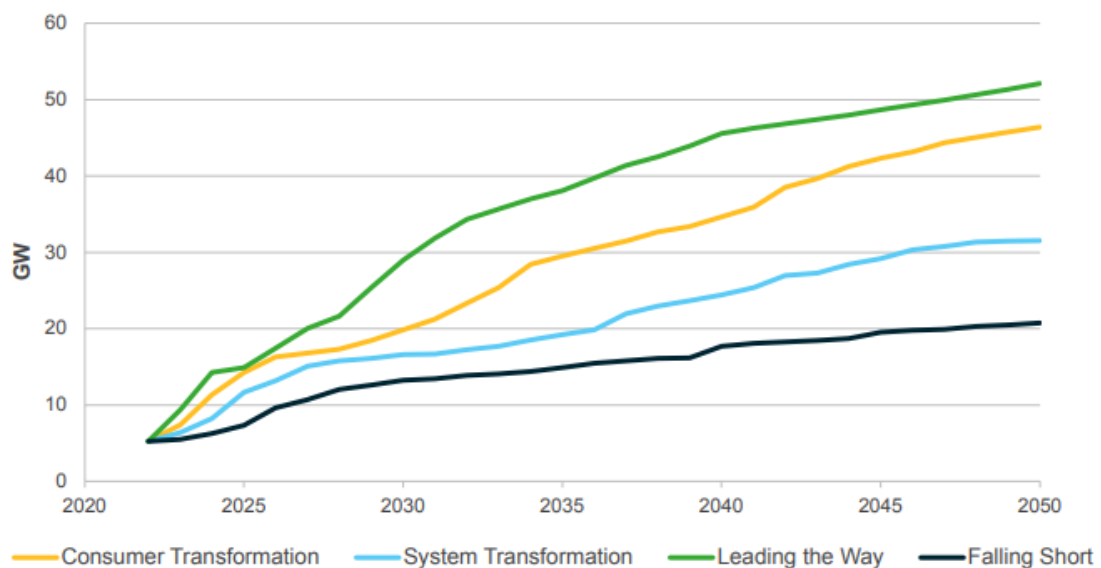
4.3.53 The FES sets out several key messages including Key Message 3 ‘Markets and Flexibility’ (page 10) which identifies that:

- *“Improved market signals and new distributed flexibility solutions are key to managing a secure, net zero energy system at lowest cost to the consumer.”*
- *“47 GW of electricity storage is operating by 2050 in Consumer Transition, with 18 GW connected at distribution level.”*
- *“The growth of distributed flexibility (such as storage) ... is a key enabler of net zero. A market-wide strategy, including government targets, policy*

support and market reform is required to facilitate the significant growth in distributed flexibility.”

4.3.54 The key statistics set on page 13 of the FES illustrates that electricity annual demand is anticipated to increase from 286 TWh in 2023 to between 570 and 726 TWh (depending upon scenario) in 2050. In terms of total storage capacity this increases from 29 GWh in 2022 to between 62 and 166 GWh (depending upon scenario) in 2050. It is clear that storage capacity will need to increase two-fold to get close to reaching the net zero target. Under all scenarios considered in the FES increased electricity storage is predicted, as illustrated by Figure ES.E:26 from page 146, reproduced in Figure 4.2 below.

Figure 4.2: Figure ES.26 Electricity Storage Capacity



4.3.55 Page 146 of the FES specifically relates to electricity storage capacity and identifies that: *“Electricity storage is needed to reinforce security of supply and efficiently manage supply and demand. Installed capacity and volume need to increase significantly to support the decarbonisation of our electricity system as we transform to net zero.”* This is continued on page 196 which states: *“Overall, the policy, regulatory and market environment for storage will need change to bring forward the levels of energy storage we expect to need on the system. This could involve changes to how storage is treated by electricity codes, removal of planning*

permission barriers and market change to allow greater revenue stacking of different services to improve the business case for storage projects.”

- 4.3.56 A further important aspect of electricity storage identified in the FES is that: *“At times of high renewable generation and low demand, oversupply also needs to be carefully managed with the need for additional energy to be consumed (either by increasing demand or using energy storage) to prevent the need to curtail generation...”* (page 117). Page 180 identifies that: *“Electricity storage at both transmission and distribution level is an efficient way to manage supply and demand by reducing the amount of generation and network investment needed to decarbonise...”* Both quotes demonstrate how NG ESO believe that storage plays an important role in managing the security of supply and demand.

System Operability Framework

- 4.3.57 The System Operability Framework (SOF) takes a holistic view of the changing energy landscape to assess the future operational requirements of the electricity network. It combines insight from the FES report with a programme of technical assessments to identify medium- and long-term requirements for operability.
- 4.3.58 The latest Operability Strategy Report (December 2022) outlines the future challenges and actions in maintaining an operable electricity system. It sets out what needs to be done to reach NG’s zero carbon 2025 ambition and highlights how stakeholders can engage to assist in the achievement of these challenges.
- 4.3.59 The Report states that; *“we have delivered, and are delivering, innovative systems, products and services. These will transform how we operate Great Britain’s electricity system, and mean we are ready to operate a zero-carbon network in 2025. This means a fundamental change in how our system is operated – integrating newer technologies right across the system – from large scale off-shore wind to domestic scale solar panels and increased demand side participation.”* To support the integration of these technologies, storage will be key component of future operating systems.

4.4 Summary

- 4.4.1 It can be seen from the above review that the national policy message on energy security is strong and unambiguous. There is a clear need to ensure security of



supply through the development of a diverse energy generation system to support the increased deployment of renewable energy, increased peak demands and the move to electric vehicles.

- 4.4.2 BSFs are considered to be a key component of the future energy mix in the UK under all scenarios considered in the FES. The existing storage provision will need to increase significantly by 2030 to be on track to achieve net zero by 2050.
- 4.4.3 The Proposed Development would provide the type of significant capital investment that the Government envisaged would come forward through the mechanisms promoted through Energy Market Reforms. The BSF would provide a flexible modular energy storage system which could instantly deliver or store power in response to system stress events on the National Grid transmission network.



5.0 ENVIRONMENTAL MATTERS

5.1 Introduction

5.1.1 This section of the PDAS considers the environmental matters of the Proposed Development. A set of technical assessments were previously submitted for the Approved Gas Plant Scheme. Where necessary, these have been updated to both reflect the contemporary baseline position and the different development technologies. The findings of these assessments are summarised in this section.

5.2 Noise

5.2.1 Inacoustic were commissioned to undertake a Noise Impact Assessment (NIA) for the Proposed Development. The NIA undertook an updated baseline survey for some monitoring points, as well as using data from the previous noise report for the Approved Gas Plant Scheme. The report is provided at Appendix B, with a brief summary set out below.

5.2.2 The assessment identified that the Proposed Development would give rise to rating sound levels that do not exceed the measured background sound level in the area, thus giving rise to a 'Low Impact', within the range of NOAEL of the NPPG England guidance.

5.2.3 The Assessment concluded that, since the Proposed Development conforms to British Standard and National Planning Policy requirements, noise should not be a considered as a constraint to the approval of this Planning Application.

5.3 Landscape and Visual Effects

5.3.1 A Landscape and Visual Impact (LVIA) is provided at Appendix C to this PS. A summary of the findings is provided below.

5.3.2 The LVIA finds that the introduction of Proposed Development would not result in significant landscape and visual effects. It would be located adjacent to the far more extensive National Grid Super Transformer Substation, which already exerts a strong influence upon its surroundings, and would be largely enclosed by vegetation cover, greatly limiting its visibility.



- 5.3.3 From outside of the Substation compound, the influence of the Proposed Development upon the surrounding area would be virtually nil, with only occasional and very localised glimpsed views of the proposed new structures available.
- 5.3.4 It should also be noted that the area surrounding the Site has been allocated by KMBC as a SUE (with employment as the primary use), and that therefore the appearance and character of the area, and views across it are likely to undergo major change irrespective of the presence of the Proposed Development.
- 5.3.5 In addition, the Proposed Development would have a significantly reduced visual impact over the Approved Gas Plant Scheme due to the lower development maximum height (i.e., 3m high battery storage units versus 20m high gas engine exhaust stacks).

5.4 Drainage and Flood Risk

- 5.4.1 KRS were commissioned to undertake a Surface Water Drainage Assessment (SWDA) for the Proposed Development. The SWDA is provided at Appendix D to this PS, and a summary is set out below.
- 5.4.2 The SWDA finds that the Proposed Development could be operated with minimal risk from flooding, would not increase flood risk elsewhere and is compliant with the NPPF, as it is to be situated on existing hardstanding, and should not therefore be precluded on the grounds of flood risk or drainage.
- 5.4.3 The drainage strategy for the Proposed Development is set out in an outline sustainable urban drainage system (SuDS) strategy. This would take the form of:
- i) Permeable surfaces (crushed stone);
 - ii) Filler trenches;
 - iii) Underground crate soakaways; and
 - iv) If required, attenuation crate storage with restricted discharge into the drainage ditch of the Knowsley Brook.
- 5.4.4 The SuDS strategy would reduce peak flows, the volume of runoff, and slow down flows. The adoption of a SuDS strategy represents an enhancement from the current conditions. In adopting these principles, the Proposed Development would not



increase the risk of flooding to adjacent properties and development further downstream.

- 5.4.5 If, after further investigations, the ground conditions at the site prevent the use of infiltration, the SWDA suggests that other SuDS methods could be considered (for example, the use of underground storage tanks to provide the required attenuation storage).

5.5 Ecology and Nature Conservation

- 5.5.1 Notwithstanding the fact that KMBC have previously considered the Site would not have unacceptable impacts on ecology, an updated Ecological Assessment has been undertaken for the Site to reflect the contemporary baseline. An Ecological Assessment Report (EAR) for the Proposed Development is provided at Appendix E to this PS, the findings of which are summarised below.
- 5.5.2 The Site is not located within or adjacent to any nationally or internationally designated site. The Site is not located within a Site of Special Scientific Interest (SSSI) Impact Risk Zone (IRZ) whereby the Local Authority would be required to consult with Natural England. The nearest locally designated site is Acornfield Plantation Local Nature Reserve (LNR), approximately 0.4km to the north, however, due to the separation distances, there would be no impact on the LNR as a result of the Proposed Development.
- 5.5.3 Habitats within the Site comprise neutral grassland with scattered scrub and a limited number of self-sown trees, which is considered to have moderate ecological value. Boundary features include scrub, deciduous woodland and tall ruderal species. Knowsley Brook is located 50m south of the Site.
- 5.5.4 In terms of protected and notable species, the EAR findings demonstrate that:
- i) No effects on roosting bats would result from the Proposed Development. No structures or trees on-Site are suitable for bat roosting purposes.
 - ii) No evidence of badger activity was found during the extended habitat survey. Due to the highly mobile nature of badgers, a pre-construction badger check is recommended.
 - iii) Due to the small footprint and nature of the Proposed Development, as well as the lack of potential amphibian breeding ponds within 250m of the Site, the

implementation of a series of Reasonable Avoidance Measures (RAMs) is likely to be sufficient to avoid impacts on individual great crested newts and maintain a favourable conservation status for the local population of this species in the wider environment.

- iv) RAMs will be also sufficient to avoid adverse effects on individual reptiles.
- v) No notable or protected plant species will be impacted by the habitat replacement associated with the Proposed Development.
- vi) It is unlikely that the works proposed will negatively affect brown hare or hedgehog species distribution and conservation status in the wider environment.
- vii) The Proposed Development will unlikely impact invertebrate species potentially present.

5.5.5 The EAR sets out recommendations within Table 5.1 to protect / mitigate against harm to ecological receptors at the Site.

5.6 Arboriculture

5.6.1 An Arboricultural Impact Assessment (AIA) has been carried out for the Proposed Development and, along with the Tree Protection Plan (TPP), and Arboricultural Method Statement (AMS), can be viewed at Appendix F to this PS. The AIA has been informed by a Tree Survey undertaken for the Site.

5.6.2 The AIA identifies that the Proposed Development would require the removal of four category C trees and one group category C group of self-seeded saplings, as well as the partial removal two category C groups of trees/shrubs. All these species are considered to be 'low quality' and therefore do not have a significant arboricultural value.

5.6.3 These trees / groups would be required to be removed under the Approved Gas Plant Scheme and therefore no greater impacts would occur as a result of the Proposed Development.

5.6.4 The AMS and TPP prescribes protective measures for retained trees surrounding the Site. These measures, which include the erection of fencing, are to be installed immediately following the completion of the tree works, and are to be sited and aligned in accordance with the TPP (Drawing TPP 01 of the AIA) prior to the commencement of any works or the introduction of any machinery or material to site.



5.7 Summary

- 5.7.1 A set of technical assessments have been prepared in support of the Proposed Development. The conclusions of these technical assessments do not identify that there would be any significant impacts which would preclude the Proposed Development from being awarded planning permission.



6.0 PLANNING POLICY CONTEXT AND APPRAISAL

6.1 Introduction

- 6.1.1 This section undertakes an appraisal of the Proposed Development in the context of the current and emerging planning policy framework.

Local Development Plan

- 6.1.2 Section 38(6) of the Planning and Compulsory Purchase Act 2004 (PCPA) requires applications to be determined in accordance with the Development Plan unless material considerations indicate otherwise. At the time of drafting, the adopted Development Plan, relevant to the Proposed Development comprises:

- i) Knowsley Local Plan: Core Strategy 2016 (Adopted January 2016); and
- ii) Saved policies from the Knowsley Replacement Unitary Development Plan 2006 (Adopted June 2006).

Material Considerations

- 6.1.3 There is no strict definition of what constitutes a ‘material consideration’ in planning legislation, although case law indicates that any consideration, which relates to the use or development of land is capable of being a material consideration in the determination of a planning application.
- 6.1.4 Such considerations can include the National Planning Policy Framework (‘NPPF’), emerging planning policies, government policy & strategy and Supplementary Planning Documents (SPDs).
- 6.1.5 KMBC are not currently preparing a new Local Plan. KMBC has adopted several SPDs, and those of relevance to the Proposed Development are discussed in this section.

6.2 Planning Policy Appraisal

- 6.2.1 The following appraisal considers the policies and guidance which are considered directly material to the determination of the proposal for which planning permission is being sought. These key policies are considered below.



Knowsley Local Plan: Core Strategy (January 2016)

*Policy SUE1: Sustainable Urban Extensions and Safeguarded Land & Policy SUE2
Sustainable Urban Extensions – Development Principles*

- 6.2.2 The Site is allocated within the Proposals Map as a ‘Sustainable Urban Extension’ (SUE) site. Policy SUE 1 sets out that nine SUE sites have been purposely removed from the Green Belt and allocated to provide additional land to meet development requirements up to 2028 and beyond. The Proposed Development and existing substation are both located within the ‘East of Knowsley Industrial and Business Parks, Kirkby SUE’. This SUE has been identified for employment uses.
- 6.2.3 The principle of energy-lead development at the Site (and by consequence, the principle of doing so within this allocated SUE) has been established through the Approved Gas Plant Scheme. Notwithstanding this, commercial uses are significant consumers of electricity, and the Proposed Development would benefit those by providing security/resilience of supply for the local distribution network.
- 6.2.4 Policy SUE 2 sets out design principles for new development within SUEs. The first principle is to deliver sustainable development, which as discussed previously, the Proposed Development would deliver on. In terms of other design principles, the function of the Proposed Development is to provide balancing services to the grid, and therefore has been designed to maximise the delivery of this function.
- 6.2.5 Accordingly, the principle and design of Proposed Development within the SUE allocation is considered to be acceptable.

Policy SD1: Sustainable Development

- 6.2.6 Policy SD1 reflects the NPPF’s presumption in favour of sustainable development and that planning applications that accord with the policies of the development plan should be approved, unless material considerations dictate otherwise. This is discussed in greater detail under the appraisal of the NPPF.
- 6.2.7 As demonstrated within this section, the Proposed Development is consistent with the policies of the Local Plan and should be considered sustainable development in the context of Policy SD1 and the NPPF.



Policy CS1: Spatial Strategy for Knowsley

- 6.2.8 Policy CS1 sets out that there will be a focus on new development within existing urban areas and introduces SUEs as a means to address the need for additional housing and employment areas.
- 6.2.9 As discussed under policies SUE 1 and SUE 2, the Proposed Development is sited within an SUE and sits adjacent to the existing urban edge. As such, the location of the Proposed Development is consistent with the spatial strategy for Knowsley.

Policy CS2: Development Principles

- 6.2.10 Policy CS2 sets out five principles which new development in Knowsley should follow. These are:
- i) Principle 1: Promote sustainable economic development, tackle the causes of deprivation and disadvantage and narrow the gap between the richest and poorest neighbourhoods;*
 - ii) Principle 2: Reduce carbon emissions and adapt to the effects of climate change;*
 - iii) Principle 3: Reduce the need to travel and increase accessibility;*
 - iv) Principle 4: Recognise environmental limits, protect and enhance environmental assets, enhance local character and promote quality of place; and*
 - v) Principle 5: Make the most efficient use of available resources and infrastructure by prioritising locations consistent with the spatial strategy.*
- 6.2.11 The Proposed Development is discussed in context of each of these Principles below.
- 6.2.12 Principles 1 and 2: The very nature of the Proposed Development is sustainably lead development through the energy security and climate change benefits it would provide. Carbon emissions would ultimately be reduced by the Proposed Development through its support of renewable energy development.
- 6.2.13 Principle 3: The Proposed Development would not be permanently manned and travel to the Site during operation would typically be limited to an occasional maintenance engineer visit, who would likely travel via a van (necessary to carry their equipment). Public transport options are available along the A5208, should construction workers find this a suitable means to travel to the Site.

- 6.2.14 Principle 4: Appropriate environmental assessments have been carried out and are submitted in support of the Proposed Development. These assessments demonstrate that all relevant environmental matters have been considered and the conclusions identify no reason why the Proposed Development should be precluded.
- 6.2.15 Principle 5: BSFs have locational requirements in that it is necessary to site them in close proximity to suitable substations to reduce electrical transmission losses. The Site is also allocated as a SUE and is therefore the Proposed Development is considered consistent with the Spatial Strategy. In addition, the existing site access would be used during construction and operation, further limiting the need for additional infrastructure / material use.
- 6.2.16 Considering the points above, the Proposed Development is consistent with all five principles of Policy CS2.

Policy CS8: Green Infrastructure

- 6.2.17 Policy CS8 seeks to maintain and enhance Knowsley's existing green infrastructure.
- 6.2.18 The Site does not sit within an area of biological, or environmental interest and is not designated as such. The EAR demonstrates that no significant environmental harm would occur as a result of the Proposed Development.
- 6.2.19 The Proposed Development would sit within the same site footprint as that of the Approved Gas Plant Scheme and would have no greater impact on existing green infrastructure than the development already approved at the Site.
- 6.2.20 Furthermore, the Proposed Development would not cause emission pollutants (unlike the Approved Gas Plant Scheme) and therefore the overall impacts on the environment would be less.

Policy CS11: Principal Regeneration Area – Knowsley Industrial and Business Parks

- 6.2.21 Policy CS11 supports regeneration new development within Regeneration of Knowsley Industrial and Business Parks, encouraging a mix of new high-quality employment development. Knowsley Industrial Park is specifically identified as a 'Priority Zone' for the production of renewable, low carbon and decentralised energy developments, in accordance with Policy CS22: Sustainable and Low Carbon



Development and Policy CS23: Renewable and Low Carbon Infrastructure, both discussed further on within this Statement.

6.2.22 The Site of the Proposed Development itself is not situated within a Principal Regeneration Area but is explicitly noted within the policy as a 'Gateway Location' to be developed in order to complement the regeneration of the remainder of the Industrial and Business Parks. The Approved Gas Plant Scheme has set a precedent for Site in that the development of an energy-lead scheme has previously been consented.

6.2.23 Accordingly, the Proposed Development is considered to conform with Policy CS11.

Policy CS19: Design Quality and Accessibility in New Developments

6.2.24 Policy CS19 seeks to promote the attractive design of buildings and spaces to enhance local distinctiveness. Whilst this policy is mostly targeted at development that is accessible to the public and buildings, Parts 2 & 3 are of some relevance to the Proposed Development. Part 2 seeks to protect the amenity of existing and future occupants of land and buildings. Policy CS11 states that development within Gateway Locations (such as the Proposed Development, see discussion of Policy CS11 for further details) should have regard for the requirements of Policy CS19.

6.2.25 As demonstrated through the technical assessments submitted in support of this application, the Proposed Development would have no unacceptable amenity impacts in respect of noise or visual impacts. Part 3 of this policy seeks to address the challenges of climate change through sustainable design principles. The Proposed Development is considered to represent sustainable development, being a low carbon energy development that seeks to avoid effects on biodiversity and is not at risk of flooding.

6.2.26 As such, the Proposed Development is considered consistent with the overarching aims of Policy CS19 where these are relevant to the scheme.

Policy CS20: Managing the Borough's Historic Environment

6.2.27 Policy C20 seeks to preserve or enhance the borough's historic and architectural assets. The Proposed Development is not located in close proximity to any listed buildings, conservation areas, scheduled ancient monuments, battlefields or historic parks and gardens. The closest such assets are the northern boundary of the

extensive Knowsley Park and the Knowsley Village Conservation areas, which is are both in excess of 900m from the Proposed Development. The ZTV and photographs provided with the LVIA (Appendix C) illustrate that there would be negligible visibility from these heritage assets, due to the screening effects of existing vegetation and buildings.

6.2.28 As such, the Proposed Development would not have any significant effects on heritage assets and thus would not conflict with Policy CS20.

6.2.29 Furthermore, the visual impacts of the Proposed Development would be significantly less than those of the Approved Gas Plant Scheme at the Site due to lower development height (i.e., 20m high exhaust stacks on for the gas plant versus 3m high BESS containers).

Policy CS21: Greenspaces and Trees

6.2.30 The majority of Policy C21 is not relevant to the Proposed Development as it relates to more formal public open space. However, Part 10 seeks to encourage the retention of existing trees and woodland which offer positive contributions to the local environment.

6.2.31 Whilst some minor tree loss would be unavoidable for the Proposed Development, the Site already benefits from planning permission through the Approved Gas Plant Scheme. Therefore, the existing trees on the Site would be removed anyway (should this permission be fully built). The Proposed Development would have no greater impact. Notwithstanding this, the AIA has identified that the trees on the Site subject to removal are all of low quality which do not offer significant contributions to the local environment.

6.2.32 The retained trees surrounding the Site would be protected through the use of temporary tree protection fencing.

6.2.33 In light of the above, the Proposed Development is considered neutral against this policy.

Policy CS22: Sustainable and Low Carbon Development

6.2.34 Policy CS22 seeks to ensure that new developments are delivered in a sustainable manner, encouraging provision of appropriate renewable and low carbon energy



- infrastructure, as well as increasing energy efficiency through sustainable construction techniques.
- 6.2.35 Part 1 of this policy is mostly targeted at development that is accessible to the public and buildings, but contains relevant details for new developments that will be required to meet high standards of sustainable design and construction and minimise carbon emissions:
- h) Supplying energy efficiently and incorporating decentralised energy systems, using renewable and low carbon energy where feasible;*
- i) Managing flood risk, including through the use of Sustainable Drainage Systems (SuDS) and flood resilient design for infrastructure and property*
- 6.2.36 Policy CS22 also supports policies for sustainable development and carbon reduction set down in the NPPF as well those within as The Planning Act 2008 which emphasises the need for diversity in the nation's energy supply and the key role to be played in this by generation of renewable and low carbon energy.
- 6.2.37 The Proposed Development by its nature as a BESS supplies renewable energy in an efficient manner; further detail is provided in Section 4.0 of this PS. Flood risk is addressed below in the context of Policy CS24 and within Appendix D, which demonstrate compliance with this part of Policy CS22.
- 6.2.38 Part 2 of the Policy identifies Knowsley Industrial Park as a 'Priority Zone' where the Council and its partners will facilitate renewable and low carbon infrastructure by (subject to feasibility) requiring new development to:
- a) Make provision for connection to an existing or planned decentralised energy network; and*
- b) Be designed to enable future connectivity in terms of proposed site layout, infrastructure and heating provision, including consideration of connections at a later date or phase.*
- 6.2.39 Further discussion on Knowsley Industrial Park is made under the appraisal of Policy CS11.
- 6.2.40 Policy CS22 supports the aspirations of The Liverpool City Region to reduce carbon emissions and recognise the economic opportunities presented by the transition



toward a low carbon economy, as demonstrated by the commitment of the Local Enterprise Partnership (LEP) which highlights developing a low carbon economy as a key element of achieving sustained economic growth.

- 6.2.41 As such, the Proposed Development is in high accordance with Policy CS22, as well as the national policy and strategy which it supports.

Policy CS23: Renewable and Low Carbon Infrastructure

- 6.2.42 Policy CS23 outlines the Council's support for proposals that produce and distribute decentralised, low carbon and renewable energy in the region. This is provided that they do not incur significant harm to:

- a) *Natural resources, biodiversity, geodiversity, water and air quality and, landscape character;*
- b) *Aviation and transport safety;*
- c) *Historical and cultural assets;*
- d) *Public amenity and living conditions; or*
- e) *Openness and amenity of the Green Belt, except in very special circumstances.*

- 6.2.43 Sections 4.0 and 5.0 of this PS demonstrate that the Proposal Development supports the deployment of renewable and low carbon infrastructure whilst not incurring unacceptable impacts on the natural environment, the surrounding landscape, or local amenity. This extends to transport impacts, with construction works utilising the existing access off Coopers Lane and the Proposed Development being fully automated once operational, resulting in negligible transport impacts (i.e., an occasional maintenance engineer visit).

- 6.2.44 As discussed under the appraisal of Policy CS20 and elsewhere within this PS, there are no features of historic or cultural value located near the Site, with further evidence provided in LVIA (Appendix C). The Site lies within an SUE and therefore has been removed from the Green Belt.

- 6.2.45 As such, the Proposed Development would not have result in any harm to the outlined features and thus would not conflict with Policy CS23.



Policy CS24: Managing Flood Risk

- 6.2.46 Policy CS24 seeks to avoid development in areas at risk of flooding and/or which would cause flooding elsewhere. The policy promotes the use of SuDS for development proposals.
- 6.2.47 The Proposed Development is located within Flood Zone 1 (low probability of flooding) and has a site area significantly less than the 1 hectare threshold to require a Flood Risk Assessment (FRA).
- 6.2.48 Appendix D to this PS provides a drainage strategy for the Proposed Development and sets out a SuDS strategy.
- 6.2.49 Accordingly, the Proposed Development complies with Policy CS24 in respect of FRA requirements and use of SuDS.

Knowsley Replacement Unitary Development Plan (UDP) 2006 – Saved Policies

- 6.2.50 Saved policies from the UDP that are relevant to the Proposed Development are discussed below.

DQ2: Security in the Built Environment

- 6.2.51 This policy requires new developments to have good levels of personal and property security. The BESS compound would be sited behind a 2.4m high weldmesh security fence with a controlled vehicle access gate.
- 6.2.52 An Alarm Receiving Company would be appointed to ensure that no one enters the Site when the facility is not occupied. They will monitor the Site 24/7 and raise any necessary alarms with site management staff or the local police. The security system will include a Closed-Circuit TV (CCTV) system, motion sensors, tannoy system and security lights.
- 6.2.53 Accordingly, the Proposed Development is considered to accord with this policy.

DQ4: Trees and Development

- 6.2.54 This policy seeks to retain trees within new developments where they make a positive contribution to amenity. As set out above for Policy CS21, the BESS layout



ensures that the young plantation woodland surrounding the Site is retained and will continue to provide screening benefits.

6.2.55 The AIA (Appendix F) identifies that a limited number of self-sown trees would need to be removed from the Site, however these are all low quality (category C) and as such, do not contribute positively to local amenity.

6.2.56 Prior to commencement of development temporary tree protection fencing would be erected as shown on Planning Drawing Arbtech TPP 01 to prevent unauthorised or accidental damage to adjacent trees.

ENV2: Noise and Vibration

6.2.57 Policy ENV2 seeks to ensure that unacceptable increases in noise and vibration do not occur as a result of development proposals. The Noise Assessment at Appendix B demonstrates that the Proposed Development would not give rise to levels that exceed background sound levels. Noise and vibrations during construction works would only be temporary. As such, the Proposed Development would not conflict with Policy ENV2.

ENV3: Light Pollution

6.2.58 Policy ENV3 requires lightings schemes to be the minimum required for security and working requirements. This is consistent with the design philosophy for the Proposed Development which would only require lighting when maintenance engineers are on site during the hours of darkness and for security purposes. Lighting would be directional LED lighting with shrouds to prevent upwards light spillage.

6.2.59 As such it is considered that the Proposed Development complies with the requirements of Policy ENV2.

Material Considerations

Knowsley Council Climate Emergency

6.2.60 In January 2020, Knowsley Council declared a Climate Emergency and made a commitment to develop an action plan with the aim of achieving net zero carbon emissions from the Council's estate and services by 2040.



- 6.2.61 The Proposed Development would help deliver the Council's carbon neutrality commitments in that would support the delivery of existing and future renewable energy schemes in the county. This would enable more homes and businesses in the county to be powered with renewable energy and reduce the use of fossil fuels, which would ultimately cut down on carbon emissions.

National Planning Policy Framework

- 6.2.62 The NPPF sets out, under Paragraph 7, that the purpose of the planning system is to contribute to the achievement of sustainable development. Paragraph 8 sets out that there are three overarching objectives to achieve this: an economic objective, a social objective and an environmental objective.
- 6.2.63 In respect of the Proposed Development, the three objectives of sustainable development would be delivered as follows:
- i) **Economic objective.** The Proposed Development would provide essential infrastructure necessary for providing balancing services to the National Grid. This would improve the stability of energy supplies and reduce the need for demand side response. A stable and secure energy supply is vital to economic growth and as such it is considered that the Proposed Development would help deliver the economic objective of sustainable development.
 - ii) **Social objective.** As set out in Section 4.0 of this PS, the Proposed Development would help to address flexible energy needs identified in National Grid's Future Energy Scenarios. This will help to ensure stable and secure energy supplies for existing communities and future generations as the UK moves to a low carbon economy, including the anticipated shift to the wider use of electric vehicles.
 - iii) **Environmental objective.** As set out in Section 4.0 of this PS the Proposed Development provides a method of balancing grid frequency, to support the decarbonisation of the electricity system. In addition, the Site itself comprises land which offers little ecological value. Section 5.0 of this PS summarises the findings of the environmental technical reports and identifies that there would be no significant environmental harm as a result of the Proposed Development.
- 6.2.64 Accordingly, the Proposed Development is considered complicit with the three sustainable development objectives of the NPPF.



6.2.65 Paragraph 20 of the NPPF sets out that:

“Strategic policies should set out an overall strategy for the pattern, scale and design quality of places, and make sufficient provision for:

iv) infrastructure for transport, telecommunications, security, waste management, water supply, wastewater, flood risk and coastal change management, and the provision of minerals and energy (including heat)” [emphasis added].

6.2.66 As mentioned elsewhere within this PS, the Proposed Development would provide important supportive infrastructure to the National Grid and to existing and future renewable energy generation schemes in the area. Provision of such development should therefore be supported by Local Planning Authorities through the Development Plans for their areas.

6.2.67 Paragraph 111 of the NPPF states that:

“Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.”

National Policy Statements

6.2.68 As set out within Section 4.0 of this PS, the relevant draft National Policy Statements (NPS) clearly and unambiguously identify the need for energy storage facilities to ensure a flexible and decentralised energy network exists for years to come.

6.2.69 The Proposed Development would assist in stabilising the grid and ensure the UK is able to meet the projected future demands for electricity supply, provide vital support to renewable forms of energy and offer a cleaner, more reliable and faster alternative to energy supply, as existing peaking plants reach the end of their lifetime.

6.2.70 Accordingly, the Proposed Development would clearly support the message set out in the draft NPS for Energy and would make a vital contribution to ensuring that the UK has an energy system that is fit for the future in place.



Supplementary Planning Documents (SPD)

Design Quality in New Development SPD

- 6.2.71 This SPD, adopted in January 2016, is concerned with the appropriateness of design for new developments, covering a wide range of development types. The key elements of the SPD that have informed the design of the Proposed Development relate to sustainability in design through the use of a SuDS scheme and the support that the BESS would give to moving towards a low carbon economy (Principle A7 of the SPD).
- 6.2.72 Additionally, and as referenced above, the Proposed Development would include the security measures envisaged in Principle A8 for industrial and business areas in terms of physical protection and CCTV.
- 6.2.73 Finally, a key principle of the SPD is A14 which requires new development to respond to a sound analysis of:
- a) The character and nature of the surrounding environment and streetscape*
 - b) Existing and historic uses of the site and its surroundings*
 - c) The location and status of existing buildings within and surrounding the site*
 - d) Important views into, across and from the site*
 - e) The economic, social and environmental characteristics of the surrounding area*
 - f) The size, shape, orientation, topography of the site*
 - g) Local building forms and patterns of development including their scale, massing and height.*
- 6.2.74 As set out within this PS and supporting appendices, the scheme has been designed to be complimentary to the adjacent substation which it would serve. The scheme also minimises potential impacts upon ecology, landscape character and views by retaining existing trees that provide screening. The scale of the development is in keeping with the scale of other development within the substation and adjacent industrial areas.



- 6.2.75 Therefore, it is considered that the Proposed Development has been designed in accordance with the main requirements of this SPD, that are relevant to the nature of the development.

Trees and Development SPD

- 6.2.76 This SPD is concerned with the retention and planting of new trees in relation to developments. Paragraph 3.7 states that:

‘A tree survey should be submitted alongside a planning application for all sites that contain trees within 15m of the site boundary, all sites in Conservation Areas and where trees are protected by a Tree Preservation Order and must be in accordance with the BS 5837: 2012’

- 6.2.77 However, in respect of woodland or substantial tree groups BS 5837: 2012 paragraph 4.2.4(b) states that:

‘the position of all trees within the site with a stem diameter of 75 mm or more (see Note), measured at 1.5 m above highest adjacent ground level;

- 6.2.78 The trees within the Site are generally immature specimens below this diameter. All trees identified for removal are ‘low’ quality category C trees. Larger trees are located more than 15m from the Proposed Development site, however these would not be affected by the proposal. Furthermore, protect fencing would be installed around these trees during construction works, in accordance with the Tree Protection Plan within the AIA.

6.3 Summary

- 6.3.1 Notwithstanding the Approved Gas Plant Scheme previously consented (and materially implemented) at the Site, it has been demonstrated within this appraisal that the Proposed Development accords with all policies of the statutory Development Plan.
- 6.3.2 Where there is any perceived tension with policies, this is outweighed by the imperative need for these types of development to combat climate change. In addition, an assessment of relevant material considerations has not revealed any justification for determining the application other than in accordance with the statutory Development Plan, rather it reinforces the logic for doing so.



7.0 CONCLUSIONS

- 7.1.1 This Planning Statement has been prepared by Axis, on behalf of Pelagic Energy in support of a full planning application for the development of a battery storage facility and ancillary equipment on Land to the South of National Grid's Kirkby 275/400kV Substation, off Coopers Lane (A5208), Kirkby, Knowsley.
- 7.1.2 This application follows an approval for a gas peaking plant scheme on the same site footprint (ref: 19/00147) in May 2019. The 'Approved Gas Plant Scheme' has been implemented on the Site through a material start to the construction works, and therefore the permission has been secured in perpetuity.
- 7.1.3 The Approved Gas Plant Scheme confirms that KMBC have considered the development of a grid-balancing technology scheme appropriate for the Site. Accordingly, the proposed BSF (which is also a grid-balancing development) should also be considered appropriate. Furthermore, a BSF has several advantages over gas peaking plants, e.g., no air pollutants are produced, they can store electricity as well as export it to the grid, and it has a reduced visual impact through a lower maximum development height (3m high BESS containers versus 20m high gas plant exhaust stacks).
- 7.1.4 The Proposed Development would support the decarbonisation of the electricity system in the UK by 2035. The changing nature of the UK's energy requirements is clearly defined in Government Energy Policy and is supported by the anticipated requirements of the National Grid. These considerations clearly identify an essential requirement for additional grid-balancing capacity to meet demand and support the transition to a low carbon, resilient energy network. The proposed BSF would make an important contribution towards meeting these requirements.
- 7.1.5 The Proposed Development would help deliver KMBC's carbon neutrality commitments in that they would support the delivery of existing and future renewable energy schemes in the county. This enables more homes and businesses in the county to be powered with renewable energy and reduce the use of fossil fuels, which would ultimately cut carbon emissions.
- 7.1.6 As identified in the preceding sections, the Proposed Development would not give rise to any unacceptable impacts in respect of noise, landscape and visual, ecology, flood risk, trees, geology, traffic, heritage, pollution or local residential amenity.

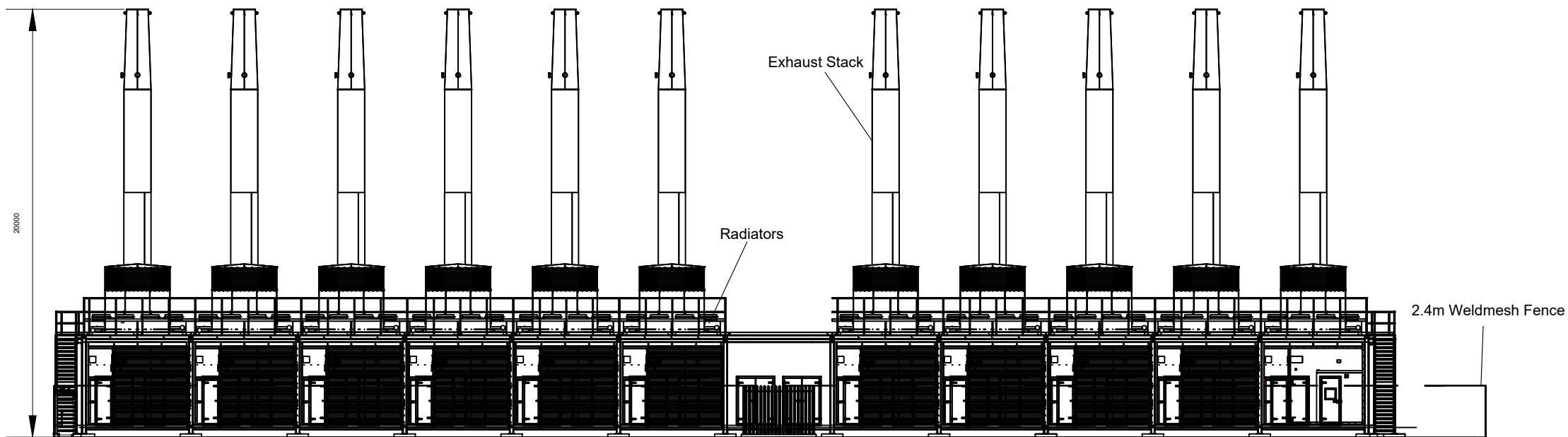


- 7.1.7 No material planning considerations have been identified which would indicate that the planning application should be determined other than in accordance with the development plan, indeed they reinforce the logic for doing so.
- 7.1.8 In conclusion and based on the findings of this PS, granting of planning permission can be justified and the proposed BSF supported.



Figure 3.2 Current and Proposed Elevations

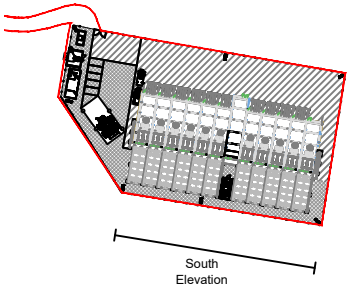




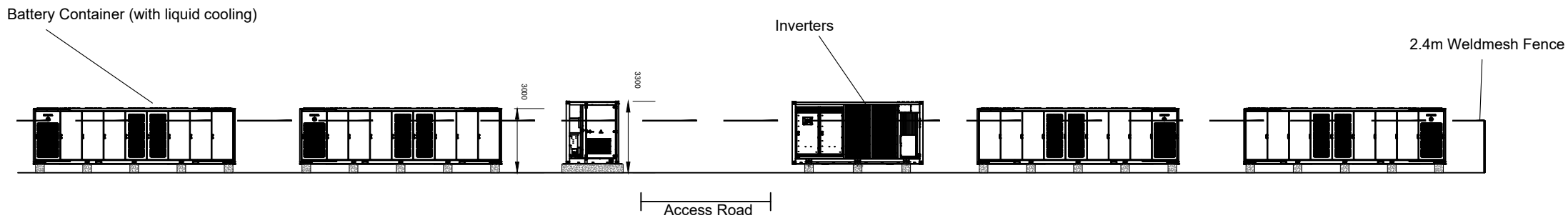
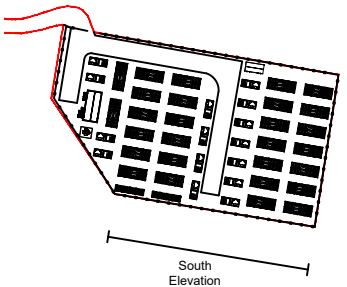
Current Layout South Elevation
Scale 1:250@A3

-- Weldmesh Fence

Current Elevations



Proposed Elevations



Proposed Layout South Elevation
Scale 1:250@A3

0344 8700 007
axis.co.uk



Client

Pelagic Energy

Project

Kirkby BESS

Drawing Title

Current and Proposed Elevations

Scale

1:250 @A3

Date

June 2023

Dwg no

2569-02-011

Status

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Drawn

SK

Checked

PR

Rev

A



Appendix A – Validation Checklist

Validation Requirement	Provided	Comments
National		
Application Fee	✓	
Ownership Certificates	✓	
Notices	✓	
Agricultural Land Declaration	✓	
Design and Access Statement	✗	Not required as not a Major Development
Location Plan	✓	2569-02-001 Site Location Plan / 2569-02-002 Statutory Plan
Site Plans	✓	2569-02-003 Rev A General Arrangement
Other Plans	✓	See submitted Planning Drawings
Existing and Proposed Elevations	✓	See submitted Planning Drawings
Existing and Proposed Site Sections and Finished Floor Levels	✓	See submitted Planning Drawings
Roof Plan	✓	See submitted Planning Drawings
Proposed Landscaping or Restoration Plans	✗	Landscaping / restoration not required
Local		
Existing and Proposed Elevations	✓	See submitted Planning Drawings
Affordable Housing Statement	✗	N/A
Viability Assessment	✗	N/A
Air Quality Assessment	✗	N/A
Archaeological Assessment	✗	N/A
Coal Mining Risk Assessment	✗	N/A
Ecological Assessment	✓	Appendix E: Ecological Assessment Report
Economic Statement	✗	Not required as not a Major Development
Energy and Sustainability Assessment	✗	Not required as not a Major Development
Equality and Diversity Impact Statement	✗	N/A
EIA	✗	N/A; below Schedule 2 threshold
FRA and SUDS	✗/✓	The Site is not located in flood zones 2 or 3 and is less than 1ha in area, as such, a FRA is not required. Surface Water Drainage Assessment provided at Appendix D.
Flues Ventilation and Extraction	✗	N/A
S106 Heads of Terms	✗	N/A
Health Impact Assessment	✗	N/A
Heritage Assessment	✗	N/A – no heritage impacts
Levels Survey Information and Cross Sections	✓	See submitted Planning Drawings
Materials	✗	N/A
Noise and Vibration Assessment	✓	Appendix B: Noise Impact Assessment

Operations Statement and Restoration and Aftercare Plan	✖	N/A
Structural Survey	✖	N/A
Telecommunication Information	✖	N/A
Town Centre/Retail/Leisure Uses Impact Assessment	✖	N/A
Land Contamination Study	✖	No evidence of previous development from historic maps and aerial photography. As such, no contamination anticipated.
External Lighting/Flood Lighting Schemes including Light Pollution Assessment	✖	N/A - See Chapter 3.2
Parking and Access	✖	N/A as public access not possible and site not permanently manned. Parking provided for maintenance staff.
Photographs and Photomontages	✓	Appendix D: Landscape and Visual Assessment.
Planning Statement including Statement of Community Involvement	✓/✖	Planning Statement Provided, but SCI not required as not a Major Development.
Scheme for Site Treatment and Management	✖	N/A as no demolition works are proposed.
Transport Assessment	✖	N/A as not a major traffic generating development.
Travel Plans	✖	N/A as Site is not permanently staffed, but readily accessible by public transport and bicycle.
Tree Survey/Arboricultural Statement	✓	Appendix F: Arboricultural Impact Assessment
Works to Trees	✖	No works proposed to trees subject to a Tree Preservation Order.
Social Value Strategy	✖	Not required as not a Major Development.

Appendix B – Noise Impact Assessment



Appendix C – Landscape and Visual Impact Assessment



Appendix D – Surface Water Drainage Assessment



Appendix E – Ecological Assessment Report



Appendix F – Arboricultural Impact Assessment

