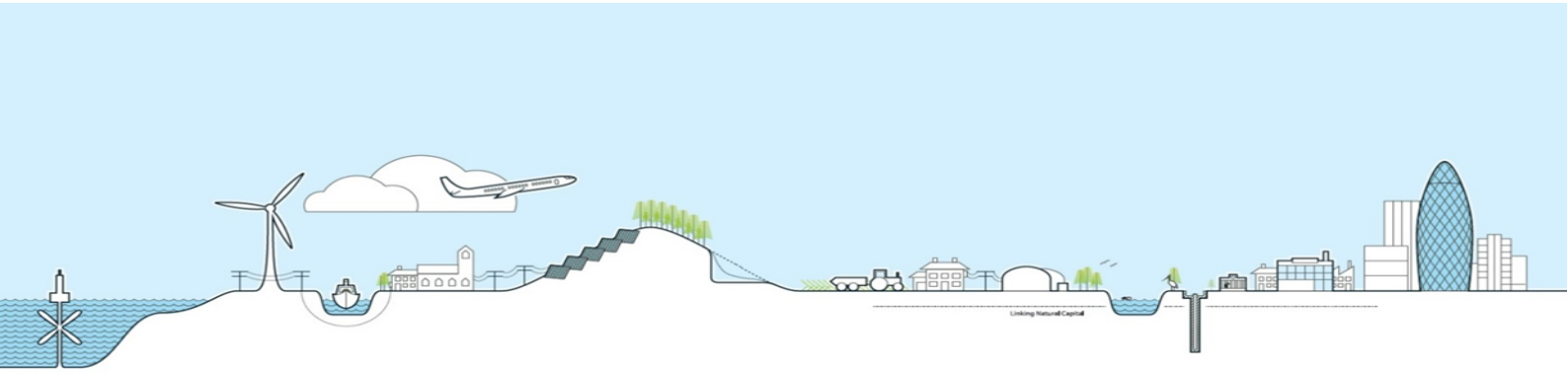
DESIGN & ACCESS STATEMENT

HAGSHAW LONG DURATION ELECTRICITY STORAGE SCHEME ON LAND AT THE M74 HEAT AND POWER PARK (NOW KNOWN AS CONEXUS WEST), WEST OF JUNCTION 11 OF THE M74, COALBURN, LANARK, ML11 0RL

May 2025

Prepared By

aardvark
environment matters



Project Quality Control Sheet

ORIGINAL	Author	Checked by	Approved by
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Company	Aardvark EM Ltd	Aardvark EM Ltd	Aardvark EM Ltd

Location: Land at Conexus West, Coalburn, Lanark, ML11 0RL

Grid Co-ordinate: X 282936 Y 632476

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1 Introduction

1. This Design and Access Statement (DAS) has been prepared on behalf of Hagshaw LDES Ltd (the Applicant), part of the 3R Energy group of companies, to accompany a full planning application for the installation and operation of a Long Duration Electricity Storage (LDES) scheme and associated ancillary infrastructure at land at the M74 Heat and Power Park (now known as Conexus West), west of junction 11 of the M74, Coalburn, Lanark, ML11 0RL.
2. This Planning Application is submitted under Section 36 of the Electricity Act 1989 (as amended) to the Energy Consents Unit of the Scottish Government and is within the administrative boundary of South Lanarkshire Council (SLC).
3. This DAS explains the thought process behind the design and indicates how, through good design, the Proposed Development can be delivered in a sustainable manner ensuring social, economic, and environmental considerations have all been taken into account.
4. Whilst the DAS is set out to be read as a standalone document, it should be read in the context of the entire submission documentation in order to fully understand the Proposed Development, its potential impacts, and planning merits.
5. The submission documentation is explained in the Planning Statement (Document Ref: R002).

2 The Application

6. The application is for the following Proposed Development:

> *"The installation of a Long Duration Electricity Storage ('LDES') scheme, with a storage capacity of up to 6 Gigawatt hours (GWh), a substation, underground cabling, access tracks, landscaping, biodiversity enhancements and ancillary infrastructure".*

7. In accordance with the validation criteria checklist, the following documents have been prepared and submitted with the planning application.

Document	Author	Reference
Planning Application Drawing Pack	CADmando Ltd	R001
Planning Statement	Aardvark EM Ltd	R002
Design and Access Statement (this document)	Aardvark EM Ltd	R003
Pre Application Consultation Report	Alpaca Communications Ltd	R004
Ecological Impact Assessment	Western Ecology	R005
Biodiversity Net Gain Strategy	Western Ecology	R006
Noise Assessment	Inacoustic Ltd	R007
Flood Risk Assessment (FRA) Drainage Strategy	RMA Environmental Tumu Consulting	R008
Transport Statement and Construction Traffic Management Plan (CTMP)	Transport Planning Associates	R009
Landscape & Visual Impact Assessment	Landscape Visual Ltd	R010
Battery Safety Management Plan (BSMP)	Aardvark EM Ltd	R011
Contaminated Land Statement	DRM Consulting Engineers	R012
Socio Economic Report	Biggar Economics	R013

Table 2.1: Documents Comprising the Planning Application

2.1 Application Plans and Drawings

8. The following plans and drawings are submitted with the application (submitted as document R001).

Drawing Number	Drawing Title
R001 SP 01 05	Site Location Plan
R001 SP 02 01	Site Location Plan (Ariel view)
R001 PL 00 05	Existing Site Plan
R001 PL 01 10	Indicative Site Layout Plan

Drawing Number	Drawing Title
R001 SD 01 03	400kV Substation (Plan)
R001 SD 02 03	400kV Substation (Elevation)
R001 SD 04 03	Customer Switchgear Building
R001 SD 03 04	LDES Triple Stacked Container (Scale Comparison)
R001 SD 05 03	PCS Inverter Double
R001 SD 06 03	PCS Inverter Single
R001 SD 07 03	String Control Unit
R001 SD 08 03	Indicative DC Combiner
R001 SD 09 03	Indicative AV Distribution Panel
R001 SD 10 03	20ft Energy Management System
R001 SD 11 03	40ft Spare Parts Container
R001 SD 12 03	40ft Welfare Container
R001 SD 13 03	120,000L Water Tank
R001 SD 14 03	240,000L Water Tank
R001 SD 15 03	CCTV Security Pole
R001 SD 16 03	Palisade Fence & Gate
R001 SD 17 03	Access Track
R001 1986 TUM PL XXX 0200 Rev B	Overall Drainage Strategy
R001 1363/7	Landscape Proposals
R001 SD 18 01	Triple Stacked Flow Battery Units
R001 2412-021 dated 26.03.25	Construction Vehicle Route (contained within outline CEMP)
R001 EL 05 01	Contextual Elevation AA
R001 EL 06 01	Contextual Elevation BB
R001 EL 07 01	Contextual Elevation CC
R001 EL 08 01	Contextual Elevation DD

Table 1.2: Planning Application Drawings

3 Site and Location

3.1 Site Location

9. The Application Site is located to the southwest of junction 11 of the M74, approximately 1.5km to the south of Coalburn and approximately 1.5km to the north of Douglas.
10. The Red Line Boundary extends to approximately 46.6 hectares of restored land which was part of the former Dalquhandy Opencast Coal Site. The area was not subject to coal extraction but principally used for coal stocking and associated coal dispatch operations.
11. The Site now forms part of the Hagshaw Energy Cluster, an established strategic location for large scale renewable energy projects.
12. The Site sits wholly within the South Lanarkshire Council administrative area ('the Planning Authority') and within the Douglas Community Council area, close to the boundary with Coalburn Community Council.
13. The boundary of the Site is shown edged with a red line on Plan SP 01 Site Location Plan (R001 Drawing Pack).

3.2 The Development Site

14. The Site is accessed from the M74 motorway which joins the B7078 (Carlisle Road) roundabout at Junction 11 (Poniel). Access to the Site is gained directly from the Junction 11 roundabout via an existing circa 2km long private road which continues through the Proposed Development Site providing access to the wind farms and forestry plantations beyond.
15. A biomass Combined Heat and Power (CHP) facility operated by 3R Energy is located to the west of the access road and will be retained within the Development footprint.
16. There are two Development areas split by the access road; the total developable area is approximately 17 hectares.
17. The northern area undulates from approximately 224.5mAOD in the northwest to 234.5mAOD in the southwest, dropping to approximately 231mAOD along the access road which runs along its southern boundary.
18. The southern area ranges from approximately 254mAOD in the south to 239mAOD in the northeast dropping to approximately 231mAOD along access road which runs along its northern boundary.
19. The land includes a combination of hardstanding, along with restored land associated with the Dalquhandy Opencast Coal Mine which is currently rough grassland.
20. The Site currently (during 2025) includes temporary construction compounds for the surrounding wind farms which are under construction/repowering.
21. A dismantled railway line runs along the southeastern section of the Site, this is within an escarpment to the south and raised approximately 244mAOD to the north. The bund includes a number of bridges and arches which allow water to flow into the Site.
22. Overhead powerlines run north south along the Site's eastern boundary and across the access road to the north.
23. There are a number of Paths on the Site and wider area as follows:
    - Core Path CL/5735 crosses the northern part of the Site, grant-aided upgrades to the route have recently started (some of these within the Site).

- Aspirational Core Path CL/5728 follows the existing wind farm access road through the Site.
- Aspirational Core Path CL/5729 follows the disused railway line within the Site.
- Core Path CL/3457 runs north-west from Douglas West to Arkney Hill and the conifer plantation to the north of Burnt Rig outside the Site.
- Wider Network Path CL/5171 runs north from towards West Toun and then Nethertown outside the Site.

24. As part of the extant planning permission for the Site (SLC ref: P/20/0772 extending the time of consent CL/17/0157), ACP CL/5729 would be diverted from the disused railway line to follow the edge of the woodland along the eastern and south-eastern edge of the Site. CP CL/5735 would be partly realigned towards the northern boundary of the Site. ACP CL/5728 would be retained on the existing alignment, following the existing wind farm access road.
25. The Site includes a number of small, isolated areas of surface water ponding located at the Site entrance and within centre of the developable area. A larger pond is located to the southwest of the Site.
26. The existing drainage arrangements on Site were in place to serve the previous opencast use. This drainage arrangement includes the collection of water in a perimeter channel which is then routed to the west (two culverts are present under the existing access road). The channel is then connected to a tributary of the Poniel Water which runs northwards to meet the Poniel Water at the northern redline boundary.
27. The Site comprises a number of different habitats, including those created by previous mineworking and associated with existing and ongoing developments. The semi-natural habitats include:
    - Small watercourses and a pond (as identified above);
    - A strip of immature birch woodland along a raised bank;
    - Marshy grassland; and,
    - Rush pasture.
28. In addition to the overhead power lines as referenced in paragraph 22 of this DAS, the Site includes a number of underground utilities which include:
    - Unground electricity lines which transfer electricity from the nearby windfarms which will be diverted if necessary;
    - A SPT power cable which runs north south through the Site and has been protected in the Proposed Developments Layout.
    - A water pipe to the north of the Site (this does not extend into the developable area).

3.3 The Surrounding Environment

29. The surrounding area's topography is undulating and characterised by drains, hardstanding and rough grassland from the restored mine workings.
30. To the north, a number of small woodland blocks of coniferous trees are located along the minor road which runs from Nethertown of Poniel to Craigend surrounded by semi-improved grassland which is generally used for grazing.

31. The western boundary is made up of the Douglas West Windfarm which is currently operational and the Douglas West Windfarm Extension which is under construction.
32. To the east and southeast is the Long Plantation which is a designated ancient woodland.
33. The wider area has been subject to a number of large-scale renewable energy projects which form part of the Hagshaw Energy Cluster.

3.4 Environmental Designations

34. The Site does not lie within any National or Local Designations, the nearest designations are identified below:

- **National Park:** The Loch Lomond and Trossachs National Park is located approximately 65km to the north- west of the Site.
- **Special Landscape Areas:** The Douglas Valley SLA adjoins the southern boundary of the Site.
- **Scheduled Ancient Monument**: St. Bride's Chapel in Douglas, is located approximately 1.5km to the south of the Site and Thorril Castle is located approximately 3.6km to the southeast of the Site.
- **Registered Parks and Gardens/Country Parks**: There are no Registered Parks and Gardens or Country Parks within 5km of the Site.
- **Conservation Areas**: Douglas is located approximately 1.5 km to the south of the Site.
- **Listed Buildings**: The majority of the listed buildings are associated with Douglas to the south and Millbank and Uddington to the east. The nearest listed building is associated with West Town Statue, at West Toun, approximately 600m to the north of the Site.
- **Special Protected Areas (SPA):** Muirkirk and North Lowther Uplands Special Protected Area is located approximately 6.8km to the southwest of the Site.
- **Special Area of Conservation (SAC)** Coalburn Moss Special Area of Conservation is located approximately 2.7km to the north of the Site.
- **SSSI:** Coalburn Moss SSSI is located approximately 2.7km to the north and Millers Wood SSSI is located approximately 3.2km to the southwest of the Site.
- **Local Nature Reserve**: Clyde Valley Woodland NNR is located approximately 9.8km to the northeast of the Site.

3.5 Residential Receptors

35. The closest settlements are Coalburn and Douglas approximately 1.5km to the north and south respectively.
36. There are scattered isolated dwellings within proximity to the Site, the nearest includes:

- Westerhouse - Approx Distance to Development infrastructure: 500m.
- Gardens House - Approx Distance to Development infrastructure: 950m.
- Douglas Estate - Approx Distance to Development infrastructure: 1,400m.
- Edgewood - Approx Distance to Development infrastructure: 1,150m.
- Station House - Approx Distance to Development infrastructure: 1,300.

3.6 Planning History

37. The Site and its wider surroundings were part of the Dalquhandy opencast coal site which operated between 1988 and 2004 and has since been restored. The Site itself was not mined but used for coal washing, stocking and transportation.
38. More recently, planning permission (CL/15/0273) was granted for 15 wind turbines and a wood fuel drying facility (CHP). A further application, CL/16/0157 was granted permission in 2016 for the CHP and varied in 2024 (P/24/0067/V) to operate as a standalone facility and it is now operational.
39. In June 2017 online planning permission for a mixed-use development of Class 4 (Business), Class 5 (General Industrial) and Class 6 (Storage and Distribution) uses with associated landscaping and infrastructure such as SuDS, parking and internal roadways was granted (CL/17/0157).
40. This application was resubmitted in 2020 (P/20/0772) to allow a further 5-year period to submit matters specified by conditions attached to planning permission CL/17/0157. This was granted in November 2020 and is now the extant planning consent for the Proposed Development Site.
41. The extant consent permits the development of the 28ha site comprising 140,000sqm of commercial floorspace up to a height of 15m, the approved plans are provided in Appendix 6 of the PS (R002).

3.7 Cumulative Development

42. The Application includes a cumulative assessment of the Proposed Development and identified surrounding schemes. These include nearby large-scale energy storage developments and the Hagshaw Energy Cluster wind farms (where relevant).
43. The nearby energy storage projects within approximately 5km of the Proposed Development Site which have been considered as part of the cumulative assessment are identified in Table 3.1 below:

ECU Ref	Name	Location	Description
Nationally Significant: ECU Applications			
00006063	High Netherfauld I BESS	Land 390M NNW Of High Netherfauld House Farm Tower Road, Douglas	Battery Energy Storage System (BESS) (502.5MW) **Screening Request**
00004608	Coalburn II Energy Storage Facility	Land at Broken Cross Open Cast Mine, Tower Road, Douglas, ML11 9PB	BESS scheme 1GW **Consented Development**
00000348	Coalburn 1 BESS	Land north of Birkhill, Cairnhouses Road, Douglas, MLL 0RS	BESS scheme 500 MW **Under Construction**

00004799	Carlisle Road Battery Energy Storage System	B7078 south of Coalburn Substation ML11 0JU	Battery Energy Storage System Development (50 – 200 MW) **Consideration**
00005122	Redshaw Battery Energy Storage System	B7078, 4km southeast of Douglas	500MW Battery Energy Storage System **Consideration**
Local Applications: South Lanarkshire Council			
To be submitted to SLC in May 2025	Glentaggart BESS	4km southeast of Douglas	42MW Battery Storage Facility. **Forthcoming Application**

Table 3.1: Cumulative Energy Storage Schemes

44. The location of these schemes is provided within R010 Landscape and Visual Impact Assessment Plan 1363/8 LVIA Cumulative Assessment Schemes.

4 Design and Access Statement

4.1 The Proposed Development

45. The Red Line Boundary Area is approximately 46.6 hectares, 17 hectares of which forming the developable area.
46. The Proposed Development is as follows.

> "*The installation of a Long Duration Electricity Storage ('LDES') scheme, with a storage capacity of up to 6 Gigawatt hours (GWh), a substation, underground cabling, access tracks, landscaping, biodiversity enhancements and ancillary infrastructure*".

4.2 Layout

47. The Site is split by the existing access road which runs northeast to southwest through the Site, this road will be retained but realigned slightly to maximise the Development footprint.
48. The proposed layout is indicative and will be subject to small adjustments during detailed design, any adjustments will be submitted to the ECU as part of a condition, and will have the capacity to store approximately 500MW of electricity to be utilised over a long duration (up to 12 hours) as and when required.

4.3 Choice of Technology

49. The Proposed Development layout has been based on a candidate flow battery technology (Invinity Endurium) from Invinity Energy Systems (https://invinity.com) who are the leading global manufacturer of modular vanadium flow batteries (VFB) for utility-scale energy storage for businesses, industry and electricity networks in the UK and around the world.
50. VFB store energy in two liquid electrolyte solutions containing vanadium ions in different oxidation states. During charging, energy is used to drive a redox reaction where vanadium ions in the positive electrolyte are reduced, and in the negative electrolyte they are oxidised. During discharging, the process reverses. This flow of ions through a membrane between the two electrolytes generates a flow of electrons, producing electricity.
51. VFB provide a number of important benefits over the standard lithium-ion technology as follows:
    - **Long Lifespan** – VFBs suffer minimal degradation over time.
    - **Scalability** – Their energy storage capacity is easily increased by expanding the electrolyte tanks.
    - **Deep Discharge Capability** – They can be fully discharged without damaging the battery, providing maximum usable energy.
    - **High Efficiency** – They offer round-trip efficiencies of 70-85%, ensuring effective energy use.
    - **Non-Flammable & Safe** – They use a liquid electrolyte that is non-combustible, reducing fire risks compared to lithium-ion batteries.
    - **Supports Renewable Energy Integration** – They store excess solar and wind energy for long-duration discharge, improving grid reliability.

- **Low Maintenance** – They require little upkeep since vanadium does not degrade like other battery chemistries.
- **Environmentally Friendly** – Vanadium electrolyte is reusable and recyclable, making VFBs a sustainable energy storage option.
- **Stable Performance** – They can operate efficiently in a wide range of temperatures without significant performance loss.
- **Fast Response Time** – They quickly charge and discharge, making them suitable for grid balancing and demand response applications.

52. While the Proposed Development has been designed based on utilising candidate battery technology manufactured in Scotland. The final selection of technology will be determined through a full procurement process, with the implementation of the Applicant's Responsible Contracting Policy (refer to Report R013).

4.4 Built Infrastructure

53. The proposed layout is indicative and will be subject to small adjustments during detailed design post Site Investigation works. Any adjustments will be submitted to the ECU for approval as part of the usual discharge of conditions process prior to the commencement of construction.

4.4.1 LDES Compound

54. The substation and ancillary equipment will be located in the southern area of the Site, these include:
    - 400kV substation Compound 92m X 139m X 12.9m (at highest point).
    - 5 Customer Switchgear Containers which are 10m X 3.7 m X 3.2m (H).
    - 2 40 ft Spare Parts Containers which are 12.2m X 2.5m X 2.7m (H).
    - 2 40ft Welfare Containers which are 12.2m X 2.5m X 2.7m (H).
    - A 20ft Energy Management System (EMS) which is 2.4m X 6.1m X 2.6M (H).
55. The remaining infrastructure (northern and southern development areas) will include the following:
    - 13, 608 LDES Triple Stacked Containers which are 6.0m X 2.4m X 7.8m (H) plus an additional 0.15m foundation.
    - 162 PCS Inverters Single/Double which are 11.8m X 2.1m X 2.6m (H).
    - 1141 String Control Units which are 1.1m X 1.1m X 2.4m (H).
    - 350 DC Combiner's which are 1m X 0.4m X 1.8m (H).
    - 175 AC Distribution Panels which are 1m X 0.4m X 1.8m (H).
    - Two 5m Radius Water Tanks (at 2m and 3m in height).
56. The new internal access roads will be constructed using aggregate.
57. Underground cables will be laid between the northern and southern development areas and the substation.
58. Each Battery Compound will be fenced and gravelled.

59. Additional design considerations include the following

a) Safety

- Vanadium Flow Batteries' are chemically and thermally robust, and safe even when exposed to external fire. Independent testing to the UL9540A standard has shown that these batteries have no risk of thermal runaway and as such do not represent a risk of fire.
- Safety barriers will be installed around the internal access roads to ensure safety of users.

b) Electro Magnetic Fields (EMFs)

- The proposed LDES is designed to have minimal impact on EMFs. While the facility will involve electrical equipment such as transformers, inverters, and grid connections, the electromagnetic fields generated will be low in intensity and localised within the facility itself. These levels are significantly lower than those produced by high-voltage transmission lines or large electrical substations.
- The equipment used in the scheme will adhere to strict regulatory standards, ensuring that any EMFs produced are well within acceptable limits for public health and safety.

4.5 Appearance

60. The character of the area is predominantly rural but with considerable energy infrastructure, such as the wind farms to the west, the biomass/CHP plant and overhead cables close to the Site, and the Dewars' Whisky Bond closer to the M74 motorway to the east. Therefore, it is considered that the proposed use is acceptable in this location, in line with the local development plan policy, which requires proposed development to respond to the local area context.
61. The battery storage containers are/ will be enclosed by a 2.4m high fencing and landscape planting.
62. Details of materials and colours to be used on the external elevations are set out below, unless otherwise agreed in writing by the ECU/Local Planning Authority prior to the development being commenced.

Item	External finish/materials	Colour
Substation	Brick	Brick
LDES unit	Cordon Steel	RAL7042 (Traffic Grey)
Inverter	Cordon Steel	RAL7042 (Traffic Grey)
String Control, DC Combiners & AC Distribution	Metal (unclad)	n/a
Switchgear	GRP	Holly Green BS4800 14-C-39
Spare Parts	GRP	Holly Green BS4800 14-C-39
EMS	GRP	Holly Green BS4800 14-C-39

Welfare Containers	GRP	Holly Green BS4800 14-C-39
Water Tanks	Metal (unclad)	n/a
Fence and gates	Metal pallisade	Green
Surface finish	Tarmacadam acces and parking with gravel chippings between battery units	n/a

Table 4.1: Proposed materials and finishes

63. The Proposed Site layout and principal elements are shown on the drawings and plans submitted with the planning application and listed above in Table 2.2 above.

4.6 Grid Connection

64. Point of Connection

- The on-site substation compound will include the Network Operator's (SPEN) apparatus and associated step-up transformer.
- The substation will be connected to the National Grid via underground cables to the new Redshaw electricity transmission substation south of Douglas on the B7078. These works will be carried out by the Statutory Undertakers (under a separate consent).

4.7 Security

65. The Proposed Development would need to be secure to prevent theft and criminal damage during both the construction and operational phases of the Proposed Development, and to ensure health and safety.

- The Site will be secured by 2.4m high green palisade fencing with associated access gate.
- The 400kV transformer will be secured by 3m high green palisade fencing with associated access gate.
- CCTV cameras will be mounted along the perimeter fence at a height of 4m.

4.8 Lighting

66. PIR motion sensored lights will be installed in the battery compounds in case of an emergency.
67. Any lighting scheme proposed will be agreed with the determining authority prior to operation, which can be adequately considered within a suitably worded planning condition.

4.9 Surface Water Drainage

68. It is proposed to discharge surface water via gravity, to the existing access chamber and watercourses on the Site.
69. In order to attenuate the surface water flows, a 300mm stone drainage blanket will lay beneath the LDES development, with all flows generated for the Site area stored in the porosity voids within the stones. The discharge from each blanket will be restricted by a flow control device locally, before discharging to the wider system.

70. A flow control device will be utilised to discharge at a controlled rate equal to the predevelopment greenfield rate.

4.10 Landscaping

71. Landscape and biodiversity mitigation proposals are incorporated into the scheme design and are detailed in the LVIA.
72. Existing landscape features would be protected and strengthened. The landscape and biodiversity proposals include measures that aim to avoid, reduce, or mitigate any adverse impacts on the landscape and ecology of the Site, by ensuring that the scheme has a good fit within the landscape and biodiversity setting.
73. These provisions will allow for an increase of biodiversity across the Site.
74. The Landscape Plan provides details of the proposed landscaping measures which include tree and shrub planting to the north and western boundaries of the Site.
75. Further details are provided within the LVIA (R010) and the EcIA (R005) submitted alongside the planning application.

4.11 Fire Risk Management

76. A Battery Safety Management Plan is submitted to support the planning application (R011), following the guidelines set out in the National Fire Chiefs Council's Grid Scale Battery Energy Storage System planning where relevant.
77. The information is provided to ensure that the relevant persons are aware of the risks posed by the battery storage systems and to outline the measures taken to reduce the risk of fire on the Site and measures to be implemented in the event of any fire incident. The plan has been developed with the safety of the public and emergency responders in mind and based on reducing the risk as far as is reasonably practicable.
78. The Proposed Development includes two fire water tanks, which are designed to 1,900l/s for 2 hours.
79. The LDES compound is separated into two sections by an internal roadway. The southern LDES compound can be entered from three separate entrances all located along the north and north-west boundary of the Site. The northern LDES compound can be entered from four separate entrances all located along the southern boundary of the Site, allowing the fire service to enter the Site safely depending on the location of any fire incident. Once inside the LDES compound an internal roadway loop around the LDES and inverter units. This provides sufficient access for fire tenders in the case of emergency.

4.12 Access

80. All construction and operational/maintenance vehicles will route from the M74 to the north. Construction vehicles will exit the M74 at Junction 11 at the Poniel Interchange, where they will take the second exit at the first roundabout and then the first exit at the second roundabout to reach the Site Access. Upon egressing the Site, vehicles will follow the reverse of the previously described route, returning to the M74.
81. During the construction and operational phases, the Proposed Development will utilise the same construction vehicle route as the existing Wind Farm Developments that are currently under

construction. These construction works are expected to be completed prior to the commencement of the Proposed Development.

82. This has been outlined in full in the Transport Statement and Construction Traffic Management Plan (CTMP) (R009) submitted with this application.
83. The additional Site access roads will be constructed to allow safe access and egress into the Site, these will be signposted in line with the requirements set out within the CTMP.
84. Internal access tracks will be constructed throughout the Site allowing for the movement of construction and maintenance vehicles.
85. Parking
    - The substation will include sufficient parking spaces in accordance with Network Operator requirements.
    - Parking spaces have been provided by each water tank for parking, this has been designed to allow for fire tenders.
    - All other parking will take place within the boundaries of the existing CHP plant with additional temporary parking areas within construction phases as required during the construction period.

4.13 Construction

86. During construction the Site will be secured using a perimeter fence. Heras fencing (or similar) may be required to secure the construction compounds and any other areas of the Site until the perimeter fence is complete.
87. The main period of construction will be over a 18-24 months period It is anticipated that a maximum of 27, 303 deliveries could be made by during the construction of the LDES facility, at an average of approximately 70 deliveries per day (based on an 18-month construction period).
88. Approximately 150 construction workers (working in shifts) are anticipated to be required on Site on an average day. This may increase slightly during peak construction. The location where staff will travel from is unknown at this stage as it will depend on the appointed contractor. However, it is envisaged that the majority of non-local workforce will stay at local accommodation and be transported to the Site by minibuses to minimise the impact on the strategic and local highway network.
89. Normal construction hours are proposed as follows;
    - Monday to Friday – 07:00 to 19:00
    - Saturday - 08:00 to 13:30
    - Sundays and Bank Holidays – no construction or deliveries
90. The construction process will be phased as follows:
    - Site Preparation and Groundwork: Including land clearing and grading. Use of crushed for platforming works, drainage tracks, Suds basin, formation of internal roads.
    - Construction of Key Infrastructure: Installation of foundations and structural work, importation of LDES equipment, electrical equipment and the control and monitoring systems.
    - Integration and Testing: Systems integration and testing.
91. Full details are set out in full within the CTMP (R009) submitted with this application.

4.14 Construction Compound

92. Two construction compounds will be set up within the Site, near to the Site access. The construction compounds will include the following facilities:
    - Appropriate car parking spaces;
    - Welfare facilities, including toilets, a canteen, changing rooms and offices. These will be in the form of temporary mobile units;
    - A storage area for equipment, including storage crates;
    - A refuse and recycle store; and
    - A turning area to ensure vehicles arrive and depart in a forward gear.
93. Internal access tracks will be constructed throughout the Site allowing for the movement of construction and maintenance vehicles.
94. A wheel wash facility will be located near to the exit from the main body of the Site. Excess water from the wheel wash facility will be appropriately disposed of. A visual inspection of vehicles will be undertaken before they depart the Site, to ensure that they are not carrying any residual debris onto the highway.

4.15 Construction Environnemental Management Plan (CEMP)

95. The aim of the Construction Environmental Management Plan (CEMP) is to set out responsibilities with regards to compliance with legislation and to implement any required mitigation measures associated with the proposed scheme.
96. The CEMP forms a framework within which the mitigation measures will be implemented throughout the project. The framework provides project-specific management measures and is a dynamic document which should be reviewed if activities or conditions onsite change that may influence management measures.
97. The document will be developed to avoid, minimise, and mitigate against any construction effects on the environment and surrounding community. It will be considered a living document with reviews being undertaken at set intervals and new information added as appropriate.
98. The CEMP will be secured via condition and will include the following:
    - Regulation Framework;
    - Construction Programme, Methodology and Management (including Construction logistic Plan);
    - Environmental Management and Monitoring;
    - Communication and Neighbourhood Liaison;
    - Monitoring and CEMP review.

4.16 Waste Management

99. The groundworks proposals have been designed with the aim of retaining made ground materials on the Site.
100. The contractor will ensure that all surplus or waste materials from either materials imported to Site or from those generated on Site, are dealt with responsibly. Relevant waste and resource

management procedures will be communicated to all operatives during the initial Site induction.

101. During construction and decommissioning a Site Waste Management Plan (SWMP) will be implemented to reduce construction/demolition waste and maximise the opportunity for materials recovery and recycling to reduce the amount of waste sent to landfill/recovery. This will include details on the appropriate segregation, handling, recycling, reuse, and return methods to be used at all appropriate stages of the project.

102. A specific area will be laid out and labelled to facilitate the separation of materials for potential reuse, recycling, and disposal. Recycling and waste receptacles will be kept clean and will be marked clearly in order to avoid contamination of materials.

103. The contractor will ensure that all waste is collected and disposed of by an appropriately licensed waste contractor, receiving signed receipts for each collection.

104. A SWMP will be provided as part of a condition.

4.17 Maintenance

105. The Proposed Development will require 24-hour maintenance to monitor operations.

4.18 Staff

106. Once completed and operational, the Proposed Development will require 5 shifts of 3 to 4 maintenance engineers, a day manager and an administrative officer to be present on Site.

107. The additional traffic movements associated with the operational phase will be negligible on the local road network (approximately 44 vehicle movements per day).

4.19 Operational Lifespan and Decommissioning.

108. The Proposed Development would be operational for a period of 40 years. Following this, the land will be returned to its current status.

109. At the end of the useful life of the Proposed Development, an appropriate method statement, based on the preferred option for decommissioning will be prepared and submitted to the Council for their consideration and agreement.

110. Should the Site be decommissioned, this would be undertaken within six months of notice given to the Council and is anticipated to follow the construction phases in reverse and take up to a maximum of 2 years. Reinstatement will occur at each stage of the decommissioning and all waste removed from Site to a suitably licensed facility.

111. Vehicle movements are anticipated to be similar to those during the construction phase.