DV4 – DATACENTRE

ENERGY STATEMENT

(31 AUGUST 2026)

INTRODUCTION

This Energy Statement is submitted in support of the application for Planning Permission in Principle for the DV4 Data Centre at Chapelhall, North Lanarkshire, within the Lanarkshire AI Growth Zone.

Developed by DataVita on a site adjacent to the existing DV1 and under construction DV3 Data Centre facilities, the former with an established ten-year operating history, DV4 extends a proven operational track-record.

This Energy Statement is sectioned to cover the following:-

- Section 1 assesses DV4 against the criteria the Scottish Government has identified for a green data centre, benchmarked against the most demanding standards recognised across the UK and Europe.

  We include below the Scottish Government criteria and how, at a high level, DV4 meets those, with the full detail included within the various sections of this Energy Statement:-

GREEN DATA CENTRE CRITERIA (Scot Gov)	DV4 PROVISION
Extent to which the data centre is powered from renewable energy sources	All electricity used at DV4 will come from 100% renewable sources, with provision for future direct wire renewables.
Makes use of energy efficient technologies;	DV4 design will incorporate industry best practice strategies and equipment to maximise energy efficiency, harnessing Scotlands cool climate. By adopting this approach the DV4 facility will meet and exceed industry benchmarks.
Seeks to minimise water consumption	As deployed in the DV1 and DV3 facilities, DV4 will also adopt closed loop water systems to minimise water usage. Closed loop systems only require an initial fill and minimal top-up over their lifecycle to provide the cooling required for the facility.
Supports the re-use of excess heat.	DataVita is in active discussion with both Monklands Replacement Hospital and BioCity to develop a scheme that would allow the reuse of the rejected heat from DV4.

- Section 2 sets out the energy strategy and the resulting energy and carbon position.
- Section 3 addresses the digital infrastructure case under National Planning Framework 4 Policy 24 and National Development 12, together with the site selection evidence for the Chapelhall location.
- Section 4 sets out the heat and power plan, including active heat-reuse discussions.
- Section 5 sets out the utilities and electrical capacity position, including the grid connection and enabling infrastructure.
- Section 6 sets out the standby generation and emissions control strategy that protects continuity of service without compromising local air quality.

Consistent with the evidence-led approach adopted throughout, every claim is supported either by measured performance at DataVita's existing sites, a named technical assessment, or an explicit commitment to be confirmed following the required detailed design.

1. Green Data Centre Assessment

Measured against the highest standards in the UK

NPF4 does not prescribe numerical thresholds for a green data centre, and the Scottish Government has confirmed that planning authorities apply the concept case by case, using criteria such as renewable power, energy efficiency, water minimisation and heat reuse. This section assesses DV4 against those four criteria and against the most demanding data centre benchmarks recognised across the UK and Europe.

The DV4 design will exceed those benchmarks, evidenced by measured performance at DataVita's operating sites rather than by assertion. The classification below is not a set of aspirations: every measure is either already delivered and independently verified at DataVita's existing data centres, or committed by design based on existing data centres design principles. Where a recognised standard exists it is named, so the comparison can be checked.

DV4 against the criteria and leading benchmarks

Measure	Prevailing UK / European standard	The DataVita standard (DV4)
Energy and carbon		
Energy efficiency (PUE)	Industry average 1.56 (Uptime Institute, 2024). Climate Neutral Data Centre Pact target 1.3 for cool climates.	**DV4 design will build and improve upon the DV3 design PUE of 1.26 with a target of <1.25 to achieve industry best-in-class. The DV1 facility currently operates at <1.3 on older cooling technologies.**
Renewable electricity	Climate Neutral Data Centre Pact: 75% by 2025, 100% by 2030. No UK requirement.	**100% renewable today**, REGO-backed, Renewable Energy Factor 1.0, independently verified. Meets the 2030 target now.
Grid carbon intensity (location)	UK average around 104 gCO2/kWh (2025).	Sited in the South Scotland region at around **19 to 25 gCO2/kWh**, one of the lowest-carbon grid regions in Great Britain.
Future renewable supply	No standard.	**Private-wire enabled:** switchgear designed from day one to accept a future direct renewable connection from any supplier. Enabling provision only; the development is fully grid-served and does not depend on it.
Whole-life carbon	Emerging (RICS, PAS 2080); NPF4 Policy 2 expects lifecycle minimisation.	Whole-life carbon assessment, covering embodied and operational carbon, will be provided as part of a full application (detailed design will seek to minimise carbon and will follow the principles of **PAS 2080**).
Water		
Water efficiency (WUE)	Industry typical around 1.8 L/kWh. Climate Neutral Data Centre Pact target 0.4 in water-stressed areas.	DV4 will be designed with a closed-loop chilled-water system rejecting heat through dry coolers, which ASHRAE describes as using "virtually zero water" for cooling. Best-in-class target WUE of ~0.00–0.05 L/kWh IT. This target accounts for minor top-up,

Measure	Prevailing UK / European standard	The DataVita standard (DV4)
		maintenance losses, humidification, water treatment, and ancillary building use.
Cooling water source	Frequently evaporative cooling towers or watercourse abstraction.	**Closed-loop** with dry coolers, no abstraction.
Cooling		
Cooling method	Mechanical or mixed cooling.	**Closed-loop**, liquid-led cooling for AI density (approximately 80% liquid cooling), with no evaporative or adiabatic stage in any operating mode.
Refrigerants	Transition away from high-GWP refrigerants under way.	As per DV1 and DV3, chiller refrigerant is R1234ze which has GWP = 7 and zero ozone depletion potential
Heat reuse		
Waste heat reuse	German Energy Efficiency Act mandates 10 to 20% heat reuse; EU Energy Efficiency Directive requires assessment. No UK requirement.	Heat-recovery infrastructure from day one and named district-heating off-takers in active discussion (Section 4).
Resilience and emissions		
Backup fuel	Conventional diesel.	**HVO renewable fuel**, around 90% lifecycle carbon reduction. In use today at DV1 and DV2.
Backup NOx control	Often limited to the engine emission standard.	Best Available Technology (BAT), Selective Catalytic Reduction (SCR) will be deployed to meet SEPA standards
Energy storage safety	Lithium-ion standard.	All energy storage systems designed to promote safety deploying suitable fire detection and suppression. DV3 design will be developed for DV4 which also includes early detection technologies improving prevention
Grid connection	Distribution-level connection.	Transmission-level connection; grid-fed in normal operation, with standby plant running **circa 1% of the hours in a year.**
Air quality	Meet air quality objectives.	Receptor separation, dispersion-led flue design and SCR, modelled honestly including the worst case.
Circular economy		

Measure	Prevailing UK / European standard	The DataVita standard (DV4)
Asset lifecycle and e-waste	WEEE compliance.	**ISO 55000** lifecycle management, modular design, reuse and responsible decommissioning.
Governance and transparency		
Performance reporting	EU Energy Efficiency Directive requires reporting for sites over 500 kW.	All ISO/IEC 30134 KPIs reported, metered every 15 minutes.
Management systems	Optional.	**ISO 50001** (energy) and **ISO 14001** (environment) certified.
Resilience certification	Varies.	**DV4 design will meet the European Data Centre Standard BS EN50600**
Sustainability certification	Optional.	**BREEAM Excellent** (pre-assessment - current standard), EU Code of Conduct, Climate Neutral Data Centre Pact.
Independent verification	Self-declared.	**Independent EU Code of Conduct assessment** of operating sites.
Building Regulations	Compliance / Consent	**Full Compliance / Consent**

Biodiversity is material to the wider application and is addressed in the ecology assessment, so it is not duplicated here.

Verified, not claimed

The difference between this classification and a list of aspirations is evidence. DataVita's operating sites, DV1 in Airdrie and DV2 in Glasgow, were independently assessed in 2025 against the EU Code of Conduct for Data Centre Energy Efficiency, ISO/IEC 30134 and EN 50600, and found to be among the most operationally mature and environmentally aligned commercial data centres in the UK. DV1 is the only Uptime Institute Tier III Constructed Facility certified site in Scotland. The energy efficiency figures above are measured, not modelled. DV4's water performance is committed by design: the cooling system is entirely closed-loop, a different architecture from DataVita's existing sites, so DV4's water figures are stated on their own design basis and will be metered from commissioning. DV4 carries that proven operational standard into a new, purpose-built, AI-ready facility.

The four government criteria

For completeness, the four qualities the Scottish Government has named (in the Minister's answer to parliamentary question S6W-41362, 28 October 2025) map onto this classification directly: renewable power (Section 2 and the energy and carbon rows above), energy efficiency (PUE <1.25), water (WUE 0.05 or lower, no evaporative cooling towers), and heat reuse (Section 4). DV4 meets each, and as the table shows, exceeds the recognised standard for each.

Community benefit

DataVita commits to a long-term Community Investment Fund for DV4 of approximately £5 million a year, £75 million over the 15-year operational term. This is part of the wider AI Growth Zone community fund of up to £543 million over the same period. It is a genuine commitment to the communities around the site, made as a responsible operator and offered independently of the planning merits of the application. The fund's governance, eligibility and delivery mechanism are set out in the Economic Impact Assessment and will be secured through the appropriate legal agreement.

Conclusion

On the measures above, DV4 meets or exceeds the strictest data centre efficiency standards currently in force in the UK, and does so on the basis of performance proven in operation rather than promised. It also extends into areas the existing standards do not reach, including backup emissions control and energy storage safety. DV4 is designed to show that major-scale digital infrastructure can be delivered to the highest sustainability standards in Scotland.

2. Energy Strategy

Energy hierarchy

DV4 follows a reduce, then use efficiently, then supply low-carbon hierarchy.

Reduce demand. The building fabric, electrical topology and cooling system will be designed to minimise losses, with high-efficiency transformers, UPS and switchgear, and a cooling design that avoids mechanical refrigeration for the majority of the year. Where refrigerant cycles are necessary to aid cooling loads, low-GWP refrigerants will be used as per latest F-Gas regulations and guidance and in line with the DV1 and DV3 facilities.

Use energy efficiently. The PUE target of <1.25 and the free-cooling-led, largely liquid-cooled design minimise the energy used to support each unit of compute. Real-time metering and ISO 50001 energy management drive continuous optimisation, as already practised at DV1 and DV2.

Low-carbon supply. Set out below.

Electrical demand

DV4 grid connection design enables a site capacity of 120 MVA. The facility supports large-scale AI and high-performance computing workloads. As an experienced data centre operator and AI provider, DataVita has direct operational experience of such deployments, and on that basis average IT utilisation in operation is expected to be in the order of 60% of capacity. The final demand profile will be established at detailed design.

Energy and carbon in context

A facility of this scale uses a significant absolute quantity of electricity, which is addressed directly here rather than left to inference. Two figures are given for transparency: the design demand the facility is built to, and the expected average consumption in operation.

The design capacity of 120 MVA equates to ~1.05 TWh a year at continuous full load. That is the maximum operating envelope. In practice, based on DataVita's experience of large-scale AI workloads, average utilisation is in the order of 60% of that demand, giving an expected annual consumption of approximately 0.63 TWh.

On the expected operational basis, the resulting operational carbon depends on how it is counted:

Basis	Indicative annual operational emissions
Location-based (South Scotland grid intensity, 19.3 gCO2/kWh (2025))	approximately 12,159 tCO2e
At the GB average grid intensity (around 110.1 gCO2/kWh (2025))	approximately 69,363 tCO2e
Market-based (100% REGO-backed , emissions factor = 0 gCO2/kWh)	effectively zero

Locating the facility in South Scotland rather than at the GB average avoids in the order of 57,000 tCO2e a year, around 0.86 million tonnes over the 15-year contract term. These figures are indicative and will be refined with the confirmed load profile. Embodied and lifecycle carbon are addressed separately through the whole-life carbon assessment which will be completed once detailed design is determined (which will seek to minimise carbon) and will be submitted as part of the detailed Planning Consent.

Renewable and low-carbon energy strategy

DV4's low-carbon supply rests on three points, from the most immediate to the most forward-looking.

Market-based renewable supply. DataVita's operational facilities are supplied with 100% renewable electricity, matched by Renewable Energy Guarantees of Origin (REGO) certificates, giving a Renewable Energy Factor of 1.0. This was independently verified in the 2025 EU Code of Conduct assessment of DataVita's existing sites. DV4 will be supplied on the same basis.

Location-based grid carbon intensity. DV4 sits in one of the lowest-carbon grid regions in Great Britain. NESO's regional carbon intensity model, a consumption-based estimate published across 14 distribution regions, records the South Scotland region, in which DV4 is located, at an annual average of approximately 19 to 25 gCO2/kWh in 2024 to 2025, against a Great Britain average of around 104 over the same period, and below 50 in every month since September 2022. This describes the carbon intensity of grid electricity consumed in the region, not a dedicated supply to the site, but it means the grid DV4 draws on is among the cleanest in the country.

Private-wire enabled, on an open basis. DV4's high-voltage infrastructure is designed from day one to accept a future private-wire connection from renewable generation or energy storage. The design is deliberately open: it is not tied to any particular generator, technology, site or development, and any supplier able to meet the connection specification could connect. This is an enabling provision only. DV4 is fully served by its transmission-level grid connection, does not require or depend on any private-wire supply, and no private-wire connection forms part of this application. Any future private-wire scheme would be separately promoted, separately consented and determined on its own merits at the time. The approach mirrors the heat strategy in Section 4: the capability is built in now because retrofitting it later is disproportionately costly, but the development neither waits for it nor relies on it.

Together these mean DV4's claim to low-carbon power does not rest on certificates alone: the grid serving the site is genuinely low-carbon today and the supply is 100% REGO-backed. The private-wire enablement sits beyond that position as design foresight; no part of the low-carbon case depends on it.

3. Digital Infrastructure & Site Selection

This section addresses NPF4 Policy 24 (Digital Infrastructure) and National Development 12 (Digital Fibre Network) and summarises the site selection evidence for the Chapelhall location.

Site selection

DataVita selected Chapelhall for its first Scottish data centre ten years ago, following a structured site selection exercise against the criteria used across the data centre industry: power, connectivity, physical risk and access. Those fundamentals have not changed, and they apply with equal force to DV4, which sits within the same strategic location as the operating DV1 and DV3 facilities, but with further enhanced connectivity over the last 10 years.

Fibre connectivity

The M8 corridor is Scotland's principal digital artery. The main national fibre providers run east to west trunk routes alongside or close to the motorway, linking Glasgow and Edinburgh and onward to the rest of the UK. The site therefore has access to multiple, diverse, high-capacity fibre routes from competing providers: route diversity removes single points of failure, carrier competition keeps services commercially viable, and trunk capacity scales with demand. Ten years of operation at DV1, now extended by DV3, has also built a concentration of live digital infrastructure around the campus, including diverse fibre entries, established carrier services and interconnection between facilities together with LINX Scotland - a neutral internet exchange connecting the wider Scottish network and keeping internet traffic within Scotland, removing dependency on routing through London. Co-locating DV4 in this location connects into this established infrastructure, which could not be replicated at an alternative site without significant expenditure and long delivery timescales.

International connectivity

In February 2026, Midgard Infra connected the North Lanarkshire AI Growth Zone directly to the NO-UK subsea cable, a 700 km fibre system linking Norway and the UK, with scalable 100G and 400G services live and 7 millisecond latency to the Nordics. This is current, verifiable evidence that the location already functions as a point of national and international digital connectivity.

Power, physical risk and access

The site is close to the Newarthill Grid Supply Point on the Scottish transmission network; the grid connection is set out in Section 6. The physical risk profile is strong: no major hazardous industrial installations nearby, no airport approach or departure paths overhead, no adjacent railway, and low fluvial flood risk, with surface water addressed through the site-specific Flood Risk Assessment and Drainage Strategy accompanying the application. Access is directly off the M8 at the centre of Scotland's central belt, giving fast engineering and emergency response at any hour and access to the central belt workforce.

Planning status

The site is allocated in the North Lanarkshire Local Development Plan as a Specialised Business Site (NLC00532) and benefits from an extant planning permission in principle for mixed use development (18/00266/PPP). It sits within the AI Growth Zone and the proposal falls within National Development 12 under NPF4.

4. Heat & Power Plan

Heat generation and recovery

A data centre rejects a large and continuous flow of low-grade heat. DV4 is designed to capture that heat rather than waste it. The cooling system incorporates heat-recovery provision, with plate heat exchangers on the cooling circuits able to transfer recovered heat to heat network operator who will supplement and transform the heat to a useful temperature for export. This on-site infrastructure is enabled from day one rather than left as a future possibility.

Heat reuse assessment

The development is in active discussions with the NHS Monklands Replacement Hospital, a major local heat off-taker, regarding the supply of recovered heat via a district heating network connecting to the off-taker. The off-taker's own development was programmed over a similar timeframe to DV4 albeit this has been delayed as the project is under review, but it remains a genuine opportunity to deliver excess heat export rather than to safeguard for it in principle only. In addition, early discussions have commenced with the adjacent site, BioCity, regarding a more local supply of recovered heat. Further detail, including the heat supply agreement and the connection design, will be developed as both projects progress.

Following a number of suggestions raised at the various DV4 Community Consultation Events, a feasibility study is also underway in relation to a proposed Chapelhall Community Garden, to be fully funded and provided for via the DV4 Community Investment Fund / HFD Charitable Foundation, to provide both open and covered (greenhouse) growing space to be owned and operated by the local community. The Greenhouse would utilise surplus heat from DV4 to provide a year-round community greenhouse and growing space - growing fresh food, teaching space, restoring wildlife and bringing the Chapelhall community together.

Where heat export is not immediately taken up, the site layout and energy centre will safeguard the route so that connection can be made when demand is available. This accords with NPF4 Policy 19, under which national and major developments generating surplus heat in areas of heat demand should set out how recovered heat will be used.

Power infrastructure strategy

The power infrastructure supporting heat recovery and the wider facility is set out in Section 6. In summary, DV4 takes a direct transmission-level grid supply with on-site UPS stored energy and standby generation behind it, and is enabled, on an open basis, to accept a future private-wire renewable connection (Section 2). That capability is not relied on, the facility is fully served by its grid connection.

Rising temperatures / extreme heat resilience

The cooling systems serving the technical spaces shall typically be designed to ASHRAE 20-year extreme temperature conditions for the most appropriate local site at time of detailed design. For Glasgow this is currently 30.4° C ambient summer conditions. Temperatures above 30° C are exceptional and occur only during the most intense UK heatwaves, with 5no. notable occasions since early 2000s. The average summer maximum is more typically around the high teens to low 20s °C.

5. Utilities & Electrical Capacity Statement

Electricity supply

DV4 will connect directly at transmission level at the Newarthill Grid Supply Point. Connecting at transmission level provides a robust primary supply that powers the facility in normal operation, by-passing the distribution network increasing the site resilience.

The grid connection is programmed to be available at the point the facility is ready for service. The facility is powered from the grid at all times in normal operation (see section 6 below for standby generation arrangements).

Electrical capacity

Parameter	Value
Grid connection capacity	approximately 120 MVA
Point of connection	Newarthill Grid Supply Point
Connection voltage	Transmission level

Grid connection and substation strategy

The site has been selected and master planned about the availability of strategic transmission infrastructure. The physical connection from the Newarthill Grid Supply Point will be delivered by the network operator under the grid connection offer, consistent with an application for Planning Permission in Principle. The high-voltage design will be configured to accept future behind-the-meter renewable generation and energy storage, consistent with the open private-wire enablement described in Section 2. This is safeguarding within the design only; no generation development forms part of this application and the facility's operation does not depend on any.

Other utilities

Water supply. DV4's cooling system is entirely closed-loop: it is filled once at commissioning and the same treated water recirculates indefinitely. There is no evaporative cooling towers or adiabatic cooling in any operating mode, and no abstraction from any watercourse. The cooling process consumes no water in continuous operation; the only ongoing water demand is an occasional top-up for maintenance and servicing losses, with a design allowance of around 2% of system volume a year, inside the engineering norm of under 5% for a well-maintained sealed system. The estimated top-up is around 25 to 50 m3 a year, and will be validated during detailed design, but is less than the annual domestic use of one person in Scotland (around 65 m3).

The one-off commissioning fill is stated separately with the anticipated water volume for the cooling systems serving DV4 of circa 2,000m3 (subject to final detailed design).

Ancillary demand (welfare, catering and cleaning) on an estimated headcount of around 120 people on a typical day, is 40 litres per person per working day (CIBSE Guide G), which equates to 4.8 m3 a day.

DV4's best-in-class targeted design water usage effectiveness (WUE) of <0.05 L/kWh will minimise any impact on local water infrastructure to less than a typical commercial office development. For context, Scottish Water reports that the 13 data centres operating in Scotland today, have a combined use of about 97 m3 a day, around 0.006% of the water it supplies daily. Supply capacity has been confirmed with Scottish Water, who have confirmed their “preference for closed loop systems to minimise the cooling water required” and that they “can support the water requirements for this project”.

Foul and surface water drainage. Foul flows are limited to welfare and ancillary use. Surface water will be managed through sustainable drainage, with detail design at subsequent stages.

Telecommunications. The site is served by diverse fibre connectivity appropriate to a facility of national digital significance, consistent with NPF4 Policy 24 (Digital Infrastructure) and National Development 12. The digital infrastructure and site selection evidence is set out in Section 3.

---

6. Standby Generation & Emissions Control Strategy

Standby power philosophy

Standby generation exists to protect continuity of service if the grid supply is lost. It is not a source of routine power. DV4 is always powered from the grid in normal operation. Standby plant runs in three circumstances only: during a loss of grid supply; during the short periodic testing that manufacturers and insurers require to prove the plant will start when needed; and, potentially and if so exceptionally, in a daytime-only load support mode when very high IT demand coincides with high ambient temperature, forecast at no more than 80 hours a year. Together, testing and load support operations would account for ~1% of the hours in any year.

DataVita designs power resilience as a hierarchy, with standby generation as the final tier:

1. A direct transmission-level grid supply powers the facility in normal operation.
2. On-site stored energy (UPS and battery) carries the critical load instantly on any interruption and rides through short disturbances without an engine starting.
3. Engine-driven standby plant provides extended resilience for a sustained loss of supply, and is otherwise exercised only for mandatory testing or maintenance (and potentially infrequent daytime-only load support).

Because the first two tiers do the everyday work, the standby plant is off for around 99% of the hours in the year. That is the most effective emission control available, because the cleanest running hour is the one that never happens.

Fuel: Hydrotreated Vegetable Oil (HVO)

Standby plant will run on Hydrotreated Vegetable Oil (HVO), a renewable paraffinic fuel from certified sustainable feedstocks, in place of conventional diesel. HVO delivers lifecycle greenhouse gas reductions of around 90%, supporting NPF4 Policy 2. DataVita already runs HVO across its operational facilities at DV1 and DV2, so this is established practice, not an untested commitment.

Emissions control: nitrogen oxides

HVO does not materially reduce nitrogen oxides (NOx), because NOx is a product of combustion temperature rather than fuel chemistry. NOx is therefore controlled separately and at source. DV4 commits to:

- The standby generator installation shall comply with all requirements of the applicable SEPA Environmental Authorisation and the Industrial Emissions Directive regulatory framework, including demonstration of Best Available Techniques (BAT).
- Selective Catalytic Reduction (SCR), or equivalent best available technique, reducing emissions to achieve or better the performance limits set by SEPA within the EASR Regulations. This is committed as a design principle, not deferred to later study.

Treating carbon and air quality as two separate problems, HVO for carbon and SCR for NOx, is what allows DV4 to protect both the climate objective and local air quality.

Testing regime

Routine testing, rather than real outages, is the dominant source of annual emissions from standby plant. The testing regime is therefore designed to minimise it: a short weekly off-load run, a monthly run of around 30 minutes at part load and an annual full-load test, around 18 hours a year per generator, conducted sequentially rather than simultaneously, during daytime hours only, scheduled outside sensitive periods and supplemented by load-bank testing. Permitted testing hours will be capped and secured through the SEPA environmental permit.

Noise

A PPiP plant noise impact assessment (New Acoustics, July 2026) supports the application, modelled on the worst-case concept layout: all fixed plant plus 48 standby generators. Fixed plant achieves NR30 daytime and NR25 night-time at the worst-affected receptor, meeting North Lanarkshire Council's NR30/NR25 criteria. With the acoustic screening embedded in the design: a solid rooftop parapet, generators on a lowered ground level and landscaped perimeter embankments. The standby generators were assessed separately under BS 4142 covering, daytime load support and routine testing as well as emergency operation. Routine testing modelling demonstrated a rate at or below the prevailing background at all receptors, and the all-48 emergency case indicates an adverse rating only at night, in a scenario that is highly unlikely. There having been no utility outages at DataVita's existing campus in ten years of operation. Generators used for modelling were in line with DV3 design with a noise performance of 70 dB LAeq at 1 m. Final selections will be verified against the Local Authority and SEPA criteria reflective of the developed detailed design.

On-site energy storage

DataVita is evaluating on-site energy storage to strengthen resilience and reduce reliance on combustion-based backup. The evaluation deliberately prioritises non-flammable and lower-fire-risk chemistries, including vanadium redox flow batteries, which offer extended discharge duration and a non-flammable electrolyte. The storage strategy, including chemistry selection and full fire and thermal-runaway safety, will be confirmed at detailed design and assessed through the Building Warrant, with early engagement with the Scottish Fire and Rescue Service.

Generator envelope (anticipated)

The parameters below define the anticipated worst-case standby generation envelope for assessment at Planning Permission in Principle. They are indicative and will be confirmed at detailed design, but are set conservatively so that the supporting air quality assessment and SEPA engagement rest on a robust worst case. Final equipment selection, stack heights and emission rates are fixed at detailed design and secured by condition.

Units and capacity

Parameter	Anticipated envelope
Unit rating	3 MW (3,000 kW) per generator
Load supported	up to approximately 120 MW (full site capacity)
Number of units	up to 48
Total installed standby capacity	up to approximately 144 MW
Redundancy	at least N+1 for the supported load
Fuel	HVO (renewable paraffinic fuel)

Emissions abatement

Each generator is fitted with exhaust after-treatment comprising Selective Catalytic Reduction (SCR) for nitrogen oxides, together with additional exhaust gas scrubbing to further reduce particulates, carbon monoxide and unburnt hydrocarbons. Abatement is fitted to every unit, not a selected subset.

Stack and flue parameters

Parameter	Anticipated envelope
Flue arrangement	one individual flue per generator (up to 48), distributed across four generator enclosures
Stack height	approximately 10 to 28 m above ground level; 10 m modelled in the preliminary air quality assessment, final height confirmed by detailed dispersion modelling
Flue internal diameter	approximately 0.6 to 0.8 m
Efflux velocity	approximately 20 to 40 m/s (load dependent)
Exhaust temperature	approximately 430 to 510 C

Emissions per generator (anticipated)

Pollutant	Engine-out at full load (indicative)	After abatement
NOx	in the order of 9 to 15 g/s	reduced to approximately 0.311 g/s with SCR (preliminary air quality assessment modelled basis)
Particulates, CO, hydrocarbons	engine-out	further reduced by additional scrubbing

Final emission rates are established by the air quality assessment using the confirmed equipment, and inform the SEPA permit. Ammonia slip from the SCR system is assessed and controlled.

Fuel storage

Parameter	Anticipated envelope
Fuel	HVO
Day tank	integral base tank per generator
Bulk storage (surface tank directly below the generator container, per generator)	sized to a 72 hour resilience duration (capable of supporting full load)
Indicative fuel use	in the order of 0.66m3 p/h per generator at full load
Containment	integral bunded to 110% of capacity, sited away from drains and watercourses, with spill containment
Deliveries	by road tanker, during extended operation and replenishment only

Based on above indicative envelope, fuel use would result in maximum of 2,304m3 in bulk fuel storage.

Basis and status

All values above are anticipated, and are provided to allow a robust worst-case assessment at PPiP. They will be reviewed and confirmed at detailed design, agreed with the operator and insurer, and secured through planning condition and the SEPA environmental permit. The operating and testing profile is set out in the testing regime above.

Air quality strategy

Following submission of an Environmental Impact Assessment Screening Report, which concluded that the development is unlikely to give rise to significant environmental effects, North Lanarkshire Council has advised that the development does not require an Environmental Impact Assessment. The standby plant is nonetheless designed and assessed with full rigour.

The application is supported by a preliminary air quality assessment of the standby plant (Arthian, July 2026), dispersion modelled in ADMS-6 over five years of meteorological data on a worst-case basis: all 48 generators, each with SCR abatement, assessed for both the routine testing scenario and an extended 72-hour emergency blackout event. Under routine testing, annual mean nitrogen dioxide process contributions are below 1% of the 40 ug/m3 objective at every modelled receptor, which is insignificant under the regulatory (AERA) screening criteria. Under the emergency scenario, total annual mean concentrations remain no more than 32% of the objective at the worst-affected receptor. For the short-term (1-hour) objective, the assessment applies the Environment Agency's specified-generator statistical methodology: an exceedance of the 200 ug/m3 1-hour objective is statistically highly unlikely (less than 1% probability) for up to 86 generator run hours a year and unlikely (less than 5%) for up to 100 run hours a year, comfortably above the forecast operating profile and demonstrating that the engines can run for more than 72 hours continuously in an emergency without unacceptable air quality impact. The nearest sensitive receptor is a dwelling within approximately 15 m of the site boundary. Flue heights and plant locations are set to protect ground-level air quality rather than by visual or layout convenience; a cumulative assessment including DV1, DV3 and ecological receptors has also been completed and confirms compliance.

Standby generation is also independently regulated by the Scottish Environment Protection Agency. The standby generator installation shall comply with all requirements of the applicable SEPA Environmental Authorisation and the Industrial Emissions Directive regulatory framework, including demonstration of Best Available Techniques (BAT).

Engagement with SEPA takes place as part of the PPiP process. The development's air quality position is therefore controlled through the planning permission, a supporting air quality assessment, and a separate statutory environmental permit, even though a formal EIA is not required.

Policy compliance

This strategy accords with NPF4 Policy 2 (minimising lifecycle greenhouse gas emissions, through HVO and a design that minimises engine running), Policy 11 (resilient, future-ready energy infrastructure), Policy 23 and North Lanarkshire LDP policy (protecting air quality and amenity at sensitive receptors), and supports the green data centre expectations set out by the Scottish Government by controlling emissions at source rather than by assertion.