

# SYD 1 Stage 2

Hazards and Risks

**GreenSquareDC**

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# 1 Preface

## 1.1 Executive Summary

Aurecon has prepared a Hazards and Risks report on behalf of Project Garden 1 Pty Ltd as trustee for the Norwest Property Trust (the applicant). The Hazards and Risks report has been prepared to accompany a detailed State Significant Development Application (SSDA) for the proposed GreenSquareDC SYD 1 Stage 2 data centre development (the Project) at 3 Brookhollow Avenue, in Norwest, Sydney, within the Hills Local Government Area (LGA). The Project seeks development consent for the construction and operation of a data centre, with a total power consumption of approximately 96 Megawatts (MW). The proposal will form part of a state-of-the-art data centre campus operated by GreenSquareDC, equipped to cater for growing data storage needs within Australia and the emergence of artificial intelligence (AI).

The report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) dated 8 April 2025, issued for the SSDA (SSD-81928961). There is an existing data centre, SYDGPU1 (Stage 1), on the site, which is under a separate development application approval (1382/2019/JP). Stages 1 and 2 will be operated as one site, and therefore the cumulative hazard and risk of all dangerous goods and hazardous chemicals (across both stages) have been considered in the screening assessment for the Environmental Impact Statement (EIS) for Stage 2.

This report concludes that the proposed data centre does not trigger the requirements for a preliminary hazard analysis (PHA) under *State Environmental Planning Policy (SEPP) (Resilience and Hazards) 2021*, based on Dangerous Goods assessed using the *Applying SEPP 33 Guideline*. Also, this report includes the Project Standards Compliance and Best Practice Review, which was conducted to address the additional requirements of the SEARs for the following relevant standards.

- *The FM Global Property Loss Prevention Data Sheet 5-32 – Data Centres and Related Facilities*
- *AS/NZS 4681 – Storage and handling of Class 9 (miscellaneous) dangerous goods and articles*
- *AS IEC 62619- Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for secondary lithium cells and batteries*
- *AS 1940 – Storage and handling of flammable and combustible liquids.*

The review concluded that the intent of the appropriate clauses of the standards is demonstrated. It is recommended that, in lieu of AS IEC 62619, the manufacturer ensure that lithium batteries and the Battery Management System comply with the testing requirements of UL 9540A.

The Hazards and Risks Report concluded the following recommendations should be implemented before the commissioning of Stage 2:

- The placard quantity thresholds for diesel/HVO as set out by Schedule 11 of the *WHS Regulation* are exceeded. Placards in accordance with Schedule 13 of the *WHS Regulation* shall be displayed.
- The manifest quantity thresholds for diesel/HVO as set out by Schedule 11 of the *WHS Regulation* are exceeded. A manifest of all Schedule 11 chemicals must be prepared.
- The criteria for an environment protection licence for chemical and petroleum product storage under the PoEO Act is not exceeded and so an environment protection licence is not required for chemical storage.
- An emergency plan shall be prepared for the Site and provided to the Fire and Rescue NSW as per the requirements of Regulation 361 of the *WHS Regulation*.

The Project does not require a Pipeline Hazard Analysis to support the SSDA as no pipeline is identified near the Project. Jemena has been contacted for dial before you dig information in relation to a gas main, located to the northeast of the Project, confirming the location of the Project does not impact the gas main. However, consultation with Jemena will be required to confirm that the Project's construction methodology does not impact the Jemena gas main, located to the northeast of the Project.

The Hazards and Risks report concludes that this development meets the legislative requirements under *SEPP (Resilience and Hazards) 2021* and the intent of the relevant standards.

## 1.2 Abbreviations and Glossary

| Abbreviation    | Definition                                                   |
|-----------------|--------------------------------------------------------------|
| ADGC            | Australian Dangerous Goods Code                              |
| AI              | Artificial intelligence                                      |
| BCA             | Building Code of Australia                                   |
| BC Act          | Biodiversity Conservation Act 2016                           |
| BYDA            | Before You Dig Australia                                     |
| BMS             | Batley management system                                     |
| CDC             | Complying Development Certificate                            |
| CO <sub>2</sub> | Carbon dioxide                                               |
| DA              | Development Application                                      |
| DG              | Dangerous Good                                               |
| EIS             | Environmental Impact Statement                               |
| FRNSW           | Fire and Rescue New South Wales                              |
| ft              | foot                                                         |
| GRA             | Gross Floor Area                                             |
| HAL             | High-level alarm                                             |
| HIPAP           | Hazardous Industry Planning Advisory Paper                   |
| HV              | High voltage                                                 |
| HVAC            | Heating, ventilation and air conditioning                    |
| HVO             | Hydrotreated vegetable oil                                   |
| LEL             | Lower explosive limit                                        |
| LV              | Low voltage                                                  |
| L/m             | Litre per minute                                             |
| MASD            | Multi-aspirated smoke detector                               |
| MEWICIE         | Main emergency warning intercom control indicating equipment |
| MFDCIE          | Main fire detection control indicating equipment             |
| MMR             | Meet me room                                                 |
| MW              | Megawatt                                                     |
| N/A             | Not applicable                                               |
| NCC             | National Construction Code                                   |
| NSW             | New South Wales                                              |
| PHA             | Preliminary Hazard Assessment                                |
| PTU             | Power train unit                                             |

| Abbreviation                    | Definition                                                                                                                                                                                                                                                                                                                             |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SDS                             | Safety Data Sheet                                                                                                                                                                                                                                                                                                                      |
| SEARs                           | Secretary's Environmental Assessment Requirements                                                                                                                                                                                                                                                                                      |
| SEPP                            | State Environmental Planning Policy                                                                                                                                                                                                                                                                                                    |
| SF <sub>6</sub>                 | Sulphur hexafluoride                                                                                                                                                                                                                                                                                                                   |
| sqm                             | Square meter                                                                                                                                                                                                                                                                                                                           |
| SSD                             | State Significant Development                                                                                                                                                                                                                                                                                                          |
| SSDA                            | State Significant Development Application                                                                                                                                                                                                                                                                                              |
| RL                              | Reduced Level                                                                                                                                                                                                                                                                                                                          |
| The Site                        | The existing SYDGPU1 and proposed SYD 1 Stage 2 data centre at 3 Brookhollow Avenue, Norwest (Lot 2021 DP 831173) within the Hills Shire local government area, New South Wales (NSW).                                                                                                                                                 |
| The PoEO Act                    | NSW Protection of Environment Operations Act 1997                                                                                                                                                                                                                                                                                      |
| The Project                     | The proposed SYD 1 Stage 2 data centre development at 3 Brookhollow Avenue, Norwest (Lot 2021 DP 831173).                                                                                                                                                                                                                              |
| The Proponent                   | GreenSquareDC                                                                                                                                                                                                                                                                                                                          |
| The Resilience and Hazards SEPP | NSW State Environmental Planning Policy (Resilience and Hazards) 2021<br>An NSW planning policy that integrates risk management and resilience considerations into land use planning. It addresses natural and human-made hazards, including flooding, bushfires, and hazardous industries, to ensure safe and sustainable development |
| The WHS Regulation              | NSW Work Health and Safety Regulation 2025                                                                                                                                                                                                                                                                                             |
| UN                              | United Nations                                                                                                                                                                                                                                                                                                                         |
| UPS                             | Uninterrupted power supply                                                                                                                                                                                                                                                                                                             |
| VADs                            | Visual alarm devices                                                                                                                                                                                                                                                                                                                   |
| WHS                             | Work Health and Safety                                                                                                                                                                                                                                                                                                                 |
| WIP                             | Warden intercom phone                                                                                                                                                                                                                                                                                                                  |

## 2 Introduction

### 2.1 Purpose of this report

Aurecon has prepared this Hazards and Risks report on behalf of Project Garden 1 Pty Ltd as trustee for the Norwest Property Trust (the applicant) in support of a State Significant Development Application (SSDA) submitted to the Department of Planning, Housing and Infrastructure (DPHI) under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The SSDA seeks development consent for the construction and operation of a data centre, with a total power consumption of approximately 96 MW. The proposal will form part of a state-of-the-art data centre campus operated by Green Square Data Centres (Green Square DC), equipped to cater for growing data storage needs within Australia and the emergence of artificial intelligence (AI). The proposed GreenSquareDC SYD 1 Stage 2 data centre development (the Project) is located at 3 Brookhollow Avenue, in Norwest, Sydney. There is an existing data centre, SYDGPU1 (Stage 1), on the site, which is under a separate approval. Eventually, SYDGPU1 and SYD 1 Stage 2 will operate as one campus.

This Hazards and Risks report has been prepared in response to the hazard and risk requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) dated 8 April 2025 issued for the SSDA (SSD- 81928961) [1]. Table 1 presents the response to the issued requirements.

### 2.2 Scope

The scope of the Hazards and Risks report includes the following key project infrastructure elements, which may pose a hazard through the use, handling and storage of dangerous goods and hazardous materials:

- Lithium-ion batteries as an uninterrupted power supply (UPS) located across the buildings
- Bulk diesel / HVO storage fuel tanks on the lowest level (blue hashed boxes in Figure 4)
- Day tanks (indoor diesel/HVO generator tanks) located across the buildings
- Switchgears in low voltage (LV) / high voltage (HV) rooms
- Gas mains located to the north of the Site.

### 2.3 Exclusions and Limitations

The onsite 132/33 kilovolt (kV) substation is excluded from the assessment as it is under a separate development application.

**Table 1: Industry-specific SEARs and additional requirements**

| Item                          | Description of Requirements                                                                                                                                                                                                                                                                                                                         | Section Reference in the screening assessment |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| SEARs - Hazards and Risks     | <ul style="list-style-type: none"> <li>Where there are dangerous goods and hazardous materials associated with the development, provide a preliminary risk screening in accordance with Chapter 3 of State Environmental Planning Policy (SEPP) (Resilience and Hazards) 2021.</li> </ul>                                                           | Section 5                                     |
|                               | <ul style="list-style-type: none"> <li>Where required by SEPP (Resilience and Hazards) 2021, provide a Preliminary Hazard Analysis (PHA) prepared in accordance with Hazardous Industry Planning Advisory Paper (HIPAP) No. 6 Hazard Analysis and NSW Department of Planning &amp; Infrastructure Multi-Level Risk Assessment guideline.</li> </ul> | Section 5.2                                   |
|                               | <ul style="list-style-type: none"> <li>If the development is adjacent to, or on, land in a pipeline corridor, report on consultation outcomes with the operator of the pipeline and prepare a hazard analysis.</li> </ul>                                                                                                                           | Section 8.2                                   |
| SEARs Additional Requirements | <ul style="list-style-type: none"> <li>Demonstrate the relevant aspects of the FM Global Property Loss Prevention Data Sheet 5-32 – Data Centres and Related Facilities have been considered and could be implemented as part of the development.</li> </ul>                                                                                        | Section 6.1                                   |
|                               | <ul style="list-style-type: none"> <li>Demonstrate the development would comply with the relevant aspects of AS/NZS 4681 – Storage and handling of Class 9 (miscellaneous) dangerous goods and articles</li> </ul>                                                                                                                                  | Section 6.2                                   |
|                               | <ul style="list-style-type: none"> <li>Demonstrate the development would comply with the relevant aspects of AS IEC 62619 – Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for secondary lithium cells and batteries, for use in industrial applications</li> </ul>                         | Section 6.3                                   |
|                               | <ul style="list-style-type: none"> <li>Demonstrate the development would comply with the relevant aspects of AS 1940 – Storage and handling of flammable and combustible liquids.</li> </ul>                                                                                                                                                        | Section 6.4                                   |

## 3 The Site

### 3.1 Site context

The Site is known as 3 Brookhollow Avenue, Norwest, NSW (Lot 2021 DP 831173) and is in the Norwest locality, which forms part of the Hills Local Government Area (LGA). Figure 1 presents the regional context of the Site. Developments surrounding the site comprise a mix of commercial, retail and residential land uses as described below:

- To the north of the Site is Norwest Boulevard, commercial office buildings, an early learning centre, a retirement community and a Country Club Golf Course;
- To the east of the Site is Windsor Road, commercial office buildings, early learning centres, small pockets of residential development and industrial development;
- To the south of the Site is Brookhollow Avenue, commercial developments, a hotel and medium density residential development; and
- To the west of the Site is commercial development, including a shopping centre, various retail offerings, places of worship and the Norwest Metro Station.

The Site is not located adjacent to or on land in a pipeline corridor that contains a pipeline regulated under the Pipeline Act 1967—however, a Jemena 210 kPa medium-pressure gas main crosses near the north-eastern boundary of the Site.

The sensitive receptors, as defined *Applying SEPP 33 Guideline*, Ref [1], are shown in (Figure 2) and include:

- Childcare centres to the south and east, approximately 50 m from the site (or 145 m from the existing data centre SYDGPU1 (Stage 1))
- A college, approximately 50 m from the site to the northeast (or 145 m from the existing data centre SYDGPU1 (Stage 1)), and
- Residential areas are scattered from southeast to southwest of the site at approximately 150 m from the site (or 190 m from the existing data centre SYDGPU1 (Stage 1)).

The Site is in proximity to Strangers Creek and Brookhollow Reserve, located at the Site's southwestern border. Norwest Lake is located approximately 90 m northwest of the site.





SSDA

|                                                                                               |                                                                                                                                 |                                                                                                               |                                                                                                                                                                             |                                                                                                   |                                                                                                                           |                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                        |             |                    |                                                 |
|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------|-------------|--------------------|-------------------------------------------------|
| <br><br>A1 | Issue<br>1                                                                                                                      | Date<br>(01/12/2025)                                                                                          | Description<br>ISSUE FOR SSDA                                                                                                                                               | Key Plan                                                                                          | Project Manager<br><br>A BGIS Company | Client<br><br>HOME OF AI | Notes<br><ul style="list-style-type: none"><li>• Use written dimensions only</li><li>• Do not scale from drawing</li><li>• Contractors shall confirm all dimensions on-site prior to commencing any work or producing any shop drawings</li><li>• All materials to be used in accordance with the manufacturer's specifications and instructions and shall comply with the relevant Australian Standards</li><li>• Copyright of this drawing and design remain the property of Greenbox Architecture Pty Ltd</li><li>• Nominated Architect - Gerard Page NSW reg No 7247, Vic reg No 17664, QLD reg No 4538</li></ul> | Client<br>GreenSquareDC™ | Scale<br>1:1           | Sheet<br>A1 | Scale Bar<br>N.T.S | DRAWING IS NOT TO SCALE<br>DO NOT SCALE DRAWING |
|                                                                                               | Services and Lead Consultant<br><br>AURECON | Structural and Civil<br> | +61 2 8069 8930<br>LEVEL 22<br>86 PITT STREET<br>SYDNEY NSW 2000 AUSTRALIA<br><br>GREENBOX ARCHITECTURE PTY LTD<br>ABN: 75 139 775 098<br>ISO 9001 CERTIFIED QUALITY SYSTEM | Project<br>SYD1 STAGE2 Data Centre Expansion<br><br>3 Brookhollow Avenue<br>Baulkham Hills<br>NSW | Checked By<br>EX                                                                                                          | Drawing Title<br>LOCALITY & CONTEXT PLAN                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Job Number<br>230062     | Drawing Number<br>A010 | Issue<br>1  |                    |                                                 |

Figure 1: Site context



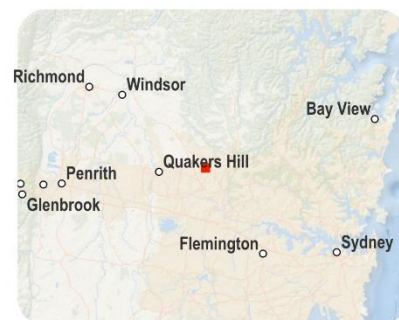
C:\Users\Adrian.Pinto\OneDrive - Aurecon Group\529297 - SYDGPU2 - 5 Working Files\10 - Acoustics\01 SSDA\10 GIS\250817\_Greensquare Datacentre SYD1 S2.qgz



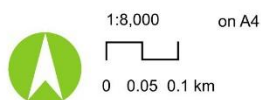
Project No. P529297 Map Author: Adrian Pinto 09/10/2025 Revision 0

### Legend

- Site Boundary
- Study Area
- Sensitive receivers**
  - Commercial
  - Education
- Buildings with land zoning**
  - R3 - Medium Density Residential
  - R4 - High Density Residential
  - RE2 - Private Recreation
  - SP4 - Special Activities
  - E1 - Local Centre
- Hotel
- Childcare
- Place of Worship



Source: Aurecon, NSW Spatial Services, ESRI, Open street maps



Projection: GDA2020 / MGA zone 56 ( EPSG:7856)

### Greensquare Datacentre SYD1 GPU2 Hazards and Risk

Sensitive receivers

Figure 2: Sensitive Receivers

## 3.2 Site description

The Site is legally described as Lot 2021 of Deposited Plan (DP) 831173. The Site can be described as irregularly shaped and has a total land area of approximately 51,867 square meters (sqm). A portion of the Site has a historic consent, approved under D93/318, dated 21 June 1993. SYDGPU1 (Stage 1) is under a Development Approval (DA) by the Hills Shire Council, referenced 1382/2025/JP.

The Site is bound by Brookhollow Avenue to the south and east, Brookhollow Reserve and the Hills Corporate Centre to the west and Norwest Boulevard to the North. The primary frontage of the site is to Brookhollow Avenue, where vehicular access is provided.

Based on a review of topographical mapping, the Site appears to fall from east to west from a maximum height of Reduced Level (RL) 104 m in the northeastern corner of the Site to RL82 m along the western portion of the Site.

The Site is located approximately 500 m to the east of the Norwest Metro station, with the metro line running under the Site's north/northwest boundary.

The Site is heavily vegetated; however, none of the vegetation is mapped on the biodiversity values mapping prepared under the *Biodiversity Conservation Act 2016* (BC Act).

## 3.3 Relevant approvals

There are several development approvals of relevance to the SSDA including:

- Complying Development Certificate (CDC): Certificate No. 25/250218-01 which provided consent for partial demolition of the existing data centre. The CDC was issued on 9 September 2025.
- Development Application for alterations and additions to existing data centre campus (1382/2025/JP) was approved by Council on 4 September 2025.
- Development Application for substation and bulk earthworks currently being prepared for submission to Council and expected for approval by June 2026.

## 3.4 CDC (certificate no. 25/250218-01) – demolition of existing internal structures

On 9 September 2025, a CDC, Certificate No. 25/250218-01, Council Reference 239/2026/PC was issued by Certatude, which provided consent for the partial demolition of the existing data centre. Specifically, the proposed works included the demolition of internal walls, access floors, slabs and roof, across Levels 1 to 4 of the existing data centre. The demolition works were required in order to facilitate the future Stage 1 development (1382/2025/JP).

The works have since been completed.

## 3.5 Stage 1 development application

Stage 1 approval was obtained from the Regional Planning Panel on 4 September 2025 under DA1382/2025/JP.

Stage 1 involves significant upgrades and refurbishment of an existing data centre facility that occupies the site previously operated by IBM. The works enable the repositioning of the existing dilapidated facility to be fit-for purpose and responsive to the evolving data storage demands of the market.

## 3.6 Substation and early works development application

A planning application is currently being prepared, which will seek approval for on-site power infrastructure, including a substation that will transform utility power supplied via a high voltage (132 kilovolts) line to

medium voltage (33 kilovolts). The substation will comprise two main structures, a control building and two power transformers.

The substation is proposed to service Stage 1 (SYD01), with the intent to expand to Stage 2. Ahead of the construction of the substation, the intent is to connect Stage 1 to the 11 kv power supply before creating a new point of connection from the proposed substation, which will be established once constructed.

Supply infrastructure will be provided from an Endeavour substation located nearby and will be delivered to the site under Part 5 powers held by Endeavour as an Electricity Supply Authority.

### 3.7 Project Summary

This SSDA seeks development consent for the construction and operation of a data centre, with a total power consumption of approximately 96MW (IT load). The proposal will form part of a broader state-of-the-art data centre campus, equipped to cater for growing data storage needs within Australia and the emergence of artificial intelligence (AI).

In summary, approval for the following is sought:

- Minor excavation works beyond earthworks intended to be undertake under the separate Substation Development Application under assessment by The Hills Shire Council;
- Civil earthworks and the installation of relevant servicing infrastructure and utilities;
- Construction of a four (4) storey data centre with roof top plant, equating to an RL 130 and Gross Floor Area (GFA) of 16,191m<sup>2</sup>;
- Installation of 77 x diesel fuel generators and associated storage
- Provision of on-site car parking for approximately 25 spaces; and
- Landscaping, tree removal and offset tree planting.



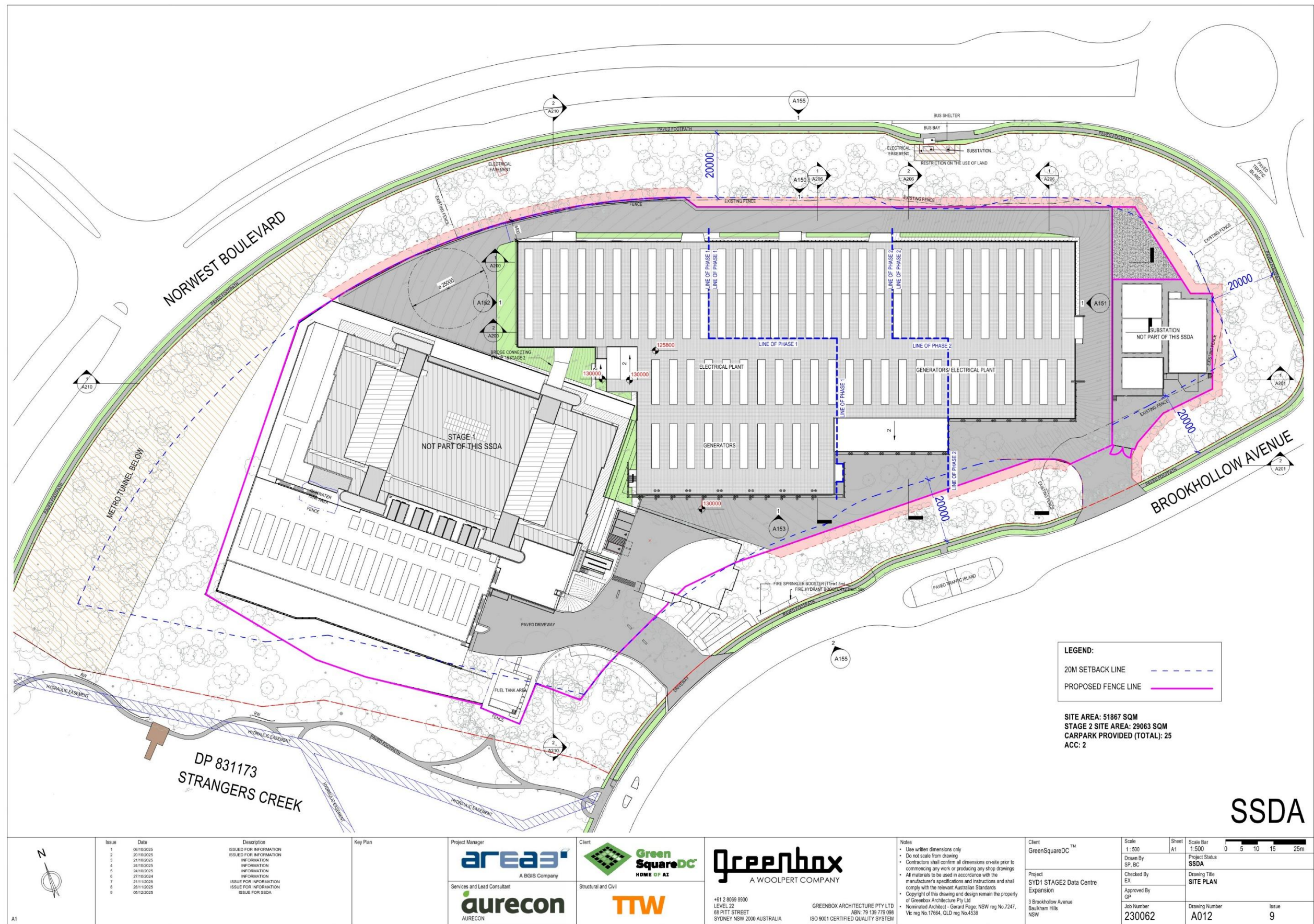


Figure 3: Site plan





## 4 Methodology

This section outlines the methodology for the preliminary risk screening. The preliminary screening is confined to the areas within the Site boundary, defined as on-site. Areas outside of the site boundary have been defined as off-site for this study. SYDGPU1 has gone through its own hazard and risk screening and fire strategy report. However, given that SYDGPU1 (Stage 1) and SYD 1 Stage 2 will operate under a single entity within a single site boundary, this screening accounts for the cumulative hazardous materials and dangerous goods.

### 4.1 Resilience and Hazards SEPP

The objective of the preliminary risk screening is to determine whether the proposed development is considered as 'potentially hazardous' in the context of the *Resilience and Hazards SEPP*.

#### **Potentially Hazardous Industry:**

The *Resilience and Hazards SEPP* defines potentially hazardous industry as follows:

*'Potentially hazardous industry' means a development for the purposes of any industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would pose a significant risk in relation to the locality:*

*(a) to human health, life or property, or*

*(b) to the biophysical environment,*

*and includes a hazardous industry and a hazardous storage establishment.*

To determine whether a proposed development is potentially hazardous, the NSW Department of Planning, Housing and Infrastructure (DPHI) *Applying SEPP 33 Guideline*, Ref [1], is used to undertake the risk screening process in which hazardous materials are defined as substances falling within the classification of the *Australian Code for Transportation of Dangerous Goods by Road and Rail* (ADG Code) [2].

The information required to undertake the assessment includes:

- All dangerous goods and otherwise hazardous materials involved in the proposed development - include raw materials, intermediates, and products;
- Dangerous goods classifications (including all subsidiary classes) for all dangerous goods held on site;
- Quantities of dangerous goods and otherwise hazardous materials involved in the proposed development;
- If developing an existing site, all existing dangerous goods and otherwise hazardous materials and their quantities;
- Distance from the boundary for each hazardous substance;
- Weekly and annual number of deliveries (and the quantities) of dangerous goods and otherwise hazardous materials to and from the site;
- Site layout plan showing proposed development and any existing development on site;
- Local layout plan showing immediate neighbours and their activities; and
- A locality plan showing the nearest residential property.

#### **Potentially Offensive Industry**

Additionally, a Project is considered to be a "potentially offensive industry" as consistent with guidance provided in the *SEPP 33 Guideline 2011* [1], which states that:

*“In deciding if a proposal is ‘potentially offensive industry’ consent authorities need to determine whether, in the absence of safeguards, the proposal would emit a polluting discharge which would cause a significant level of offence.”*

This potential for offence during construction and operation is being assessed through the Noise and Vibration Impact Assessment. The assessment considers results from noise monitoring and recommends noise mitigation design measures, such as noise barriers, where required.

#### **4.1.1 Other Risk Factors Screening**

Appendix 2 of the Applying SEPP 33 Guidelines outlines other risk factors for consideration to identify hazards outside the scope of the risk screening method such as:

- Storage or transport of incompatible materials (i.e. hazardous and non-hazardous). Hazardous materials will be stored in dedicated areas and storage protocols in accordance with standards and guidelines will be followed.
- Generation of hazardous waste.
- Possible generation of dusts within confined areas.
- Activities, other than storage, involving hazardous materials with potential to cause significant off-site impacts (i.e. multiple fatalities off-site).
- Incompatible, reactive or unstable materials and process conditions that could lead to uncontrolled reaction or decomposition.
- Storage or processing operations involving high (or extremely low) temperature and/or pressures.
- Hazardous materials and processes with known past incidents (or near misses) that resulted in significant off-site impacts at similar data centre developments.

An overview of the SEPP process is presented in Figure 4.



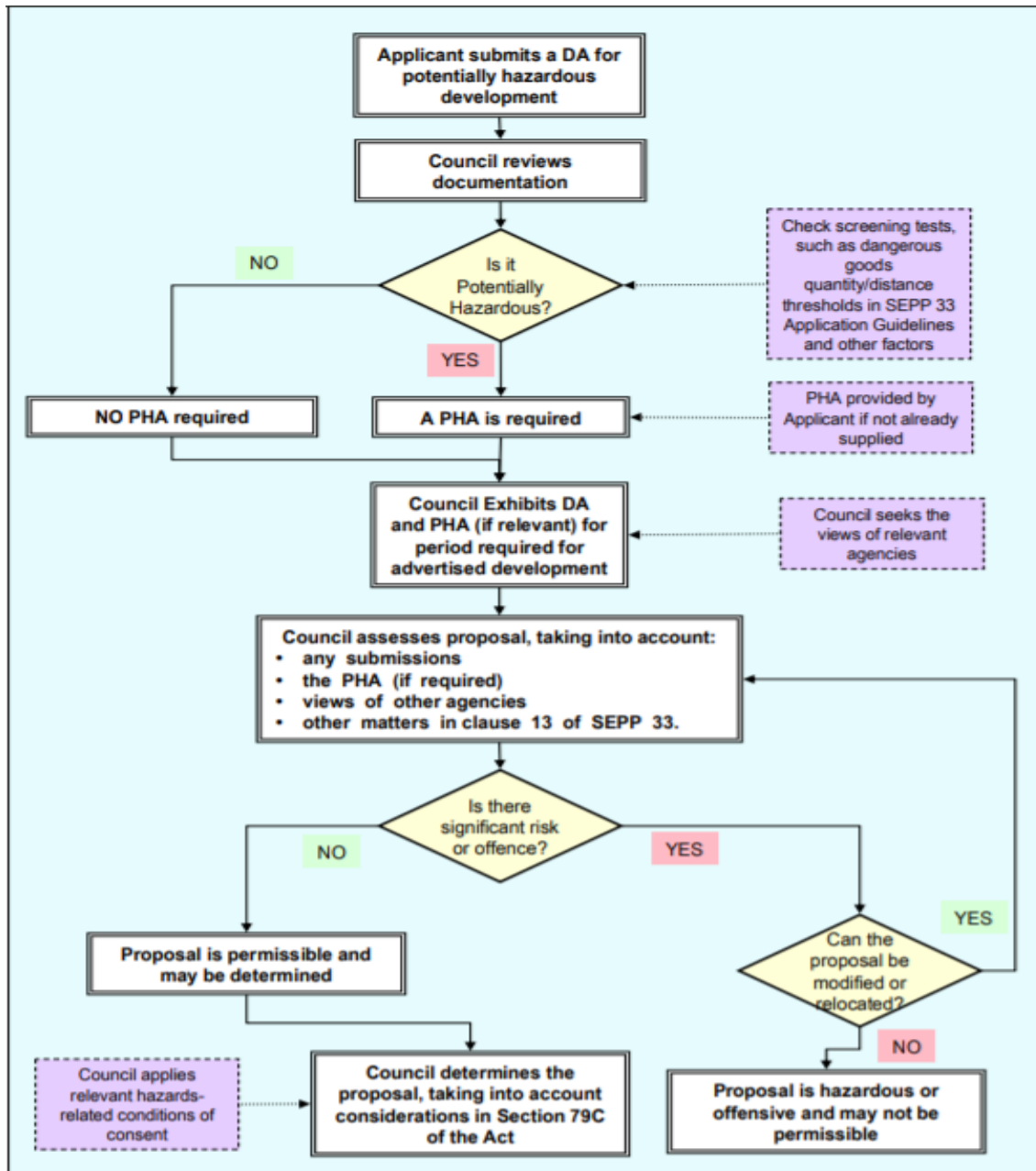


Figure 5: SEPP Process [3]

## 4.2 Multi-Level Risk Assessment

The Multi-Level Risk Assessment (MLRA) approach shown in Figure 5 is a framework that sets out three levels of risk analysis (i.e. qualitative, semi-quantitative, full quantitative) that may be appropriate for a PHA should it be required. The development boundary is used to define and determine off-site impact (i.e. impact extending outside of the Site (i.e. site boundary including Stage 1 and Stage 2). The criteria for determining the appropriate level of analysis are as follows [4]:

- Level 1 (qualitative): the activity does not pose a significant off-site risk.
- Level 2 (semi-quantitative): the likelihood of risk contributors resulting in off-site consequences is low, and risk contributors can be quantified to demonstrate that the risk criteria will not be exceeded.
- Level 3 (quantitative): There are significant off-site risk contributors, and a Level 2 analysis is insufficient to demonstrate that the risk criteria will be met.

The PHA is to be carried out in accordance with the requirements of HIPAP No. 6 *Hazard Analysis*, [5], and includes the following steps:

1. **Hazard Identification** and development of representative hazardous scenarios. This involves the systematic identification of possible hazards. Since there are usually numerous ways in which a hazardous incident may be initiated, it is necessary to define discrete failure scenarios which can be used to represent the range of possible initiating events. Having defined the representative initiating incidents to be analysed, it is then necessary to methodically consider the various ways in which incidents may develop, and to identify the possible final outcomes.
2. **Consequence Assessment.** This involves the analysis and quantification of the effect of the various incident outcomes.
3. **Frequency Assessment.** The frequency (i.e. likelihood per year of occurrence) of each of the release events is estimated.
4. **Risk Assessment and Evaluation.** This risk assessment is performed by combining the potential consequences for each hazardous event with the event frequency.

Where a PHA is not required and the Site is not potentially hazardous, then compliance with applicable codes and standards is appropriate as per Figure 5.

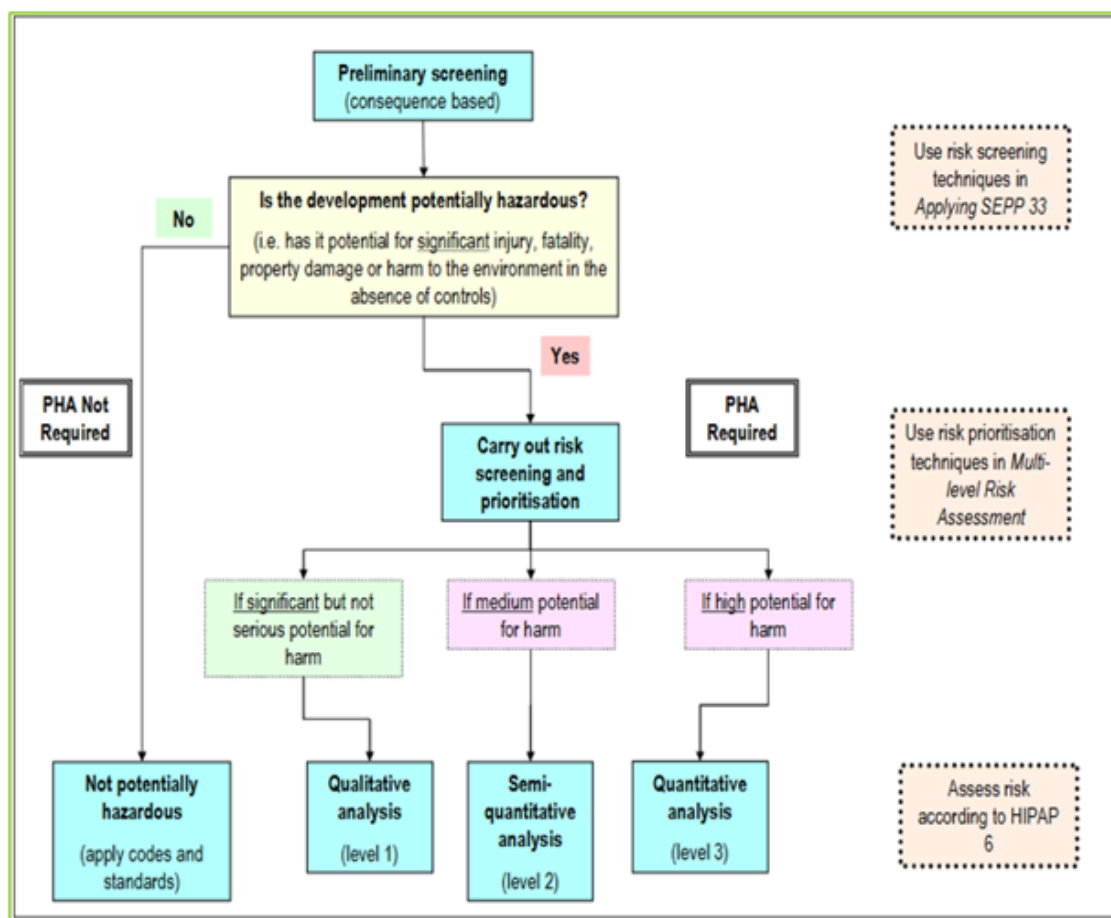


Figure 6: Multi-Level Risk Assessment Approach [4]

## 4.3 Applicable Legislation

The following Acts and Regulations will be consulted to determine the recommendations necessary for dangerous goods and hazardous materials stored on or near the site in line with the SEARs:

- *SEPP (Resilience and Hazards) 2021* ("the *Resilience and Hazards SEPP*").
- *Work Health and Safety (WHS) Regulation 2025* [6]. Part 7.1 of the WHS Regulation is applicable to the use, handling and storage of hazardous chemicals at a workplace.

- *Protection of Environment Operations Act 1997 (PoEO Act 1997)* which describes the environmental protection licences.
- *Pipeline Act 1967* regulates pipelines in NSW.

## 4.4 List of Relevant Documentation & Guidelines

Where a PHA is not required, appropriate codes and standards apply to demonstrate that the relevant aspects have been considered and could be implemented as part of the development. For the purpose of this study, and in line with the SEARs, the industry-specific guidelines, codes and standards are listed below.

- *AS 1940:2017 -The storage and handling of flammable and combustible liquids.*
- *AS/NZS 4681 – Storage and handling of Class 9 (miscellaneous) dangerous goods and articles.*
- *AS IEC 62619 – Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for secondary lithium cells and batteries, for use in industrial applications.*
- *FM Global Property Loss Prevention Data Sheet 5-32 – Data Centres and Related Facilities.*



## 5 Preliminary Risk Screening

### 5.1 Hazardous Materials

A summary of the expected hazardous materials, including dangerous goods (DG) to be stored and handled on the Site, transport movements and the relevant Resilience and Hazards SEPP screening threshold is presented in Table 2 in Section 5.1.4.

As per Section 3.2.4 of the *Applying SEPP 33 Guidelines*, Ref [1], each hazardous material item in Table 2 contains the DG Class (per the ADG Code) and United Nations (UN) Number – the 4-digit unique code assigned to the substance by the UN Committee of Experts on the Transport of Dangerous Goods. Threshold quantities of each are also specified using the General Screening Threshold quantities described in Appendix 4 of the *Applying SEPP 33 Guidelines*.

In assessing whether the Site is a potentially hazardous industry by using the screening method, some classes of DGs are excluded from the risk screening. These DGs have been assigned 'N/A' for General Screening Thresholds, as shown in Table 2.

Where screening thresholds are exceeded, a Preliminary Hazard Analysis is required.

#### 5.1.1 Lithium-ion Batteries

Lithium-ion batteries are used in the data halls as battery backup units within the racks of the data centre.

Lithium-ion batteries are classified as Class 9 Miscellaneous DGs and are exempt from the *Applying SEPP 33 Guidelines* threshold.

Appendix 3 of the *Applying SEPP 33 Guideline* provides a list of industries that may be potentially hazardous; however, it states the provided list is “illustrative and is not exhaustive” and that “hazard arises from factors other than the presence of dangerous goods”. Although facilities involving Lithium-ion batteries are not included in the list of example potentially hazardous industries, the risk screening identified electrochemical cells as a hazard due to containing DG Class 9 (Miscellaneous) materials in the form of lithium-ion batteries. As stated previously, lithium-ion batteries do not have a screening quantity to demonstrate the potential impact of the material; however, they can pose risks. The *Resilience and Hazards SEPP* deems lithium-ion batteries as not potentially hazardous. However, the potential for thermal runaway may lead to fire and explosion hazards, Ref [7], which does require appropriate controls and mitigations, which has been assessed in Section 6 as part of the Project Standards Compliance and Best Practice Review.

#### 5.1.2 Combustible Liquids

Diesel is stored within fuel storage tanks to supply fuel to the backup generators via fuel supply tanks. The Project has also considered utilising Hydrotreated Vegetable Oil (HVO) instead of diesel in future. It has been assumed that the selected HVO will have a flash point greater than 60°C and is classified as a combustible liquid as required by Federal Legislation *Fuel Quality Standards (Paraffinic Diesel) Determination 2025* [8].

According to the *Applying SEPP 33 Guidelines*, if combustible liquids of class C1, such as diesel/HVO, are present on-site and stored in a separate bund or within a storage area where no flammable materials are stored, they are not considered potentially hazardous. If, however, they are stored with other flammable liquids (that is, DG Class 3 Packing Group (PG) I, II or III), then they are to be treated as a DG Class 3 PG III material. Under these circumstances, they may contribute fuel to a fire. Diesel/HVO is expected to be stored separately with no other flammable materials on-site and, therefore, is not considered as potentially hazardous.

Diesel/HVO is not classified as a DG by the ADG Code. The diesel/HVO will only be used in generators when back-up power is required, and testing is undertaken, so annual transport movements of the fuel will be low.

**Note:** The Project will use dry-type transformers (i.e., no insulating oil for transformers).

### 5.1.3 Sulphur hexafluoride (SF<sub>6</sub>)

SF<sub>6</sub> is an insulating medium which is used within switchgears in ring main units (RMU) and 33 kV switchboards in a sealed pressurised equipment. SF<sub>6</sub> is classified Class 2.2 DG, which is a gas under pressure, non-toxic and non-flammable. According to the Applying SEPP 33 Guidelines, there is no storage/movement threshold quantities allocated to it.

### 5.1.4 Natural Gas

Jemena gas network protection response to Before You Dig Australia (BYDA) dated 18/07/2025, confirms a 210 kPa medium-pressure gas main is crossing along the Site's north-eastern boundary.

Natural gas is not to be stored on-site and is not transported in or out of the site boundary. Hence, the natural gas mains are not identified as a potential hazard based on the *Resilience and Hazards SEPP* risk screening. However, compressed natural gas (DG Class 2.1) from the gas mains can raise potential hazards during the construction of the Site.

A Jemena third-party application form is required. The information on the affected asset provides excavation guidelines.

As outlined in the 'Hazards and Risks' component of the SEARs, if a development is adjacent to, or on, land in a pipeline corridor, it is a requirement that the operator of the pipeline be consulted, and outcomes be reported. Jemena operates the natural gas mains or services (but not a pipeline as defined under the *Pipeline Act*) adjacent to the Site. This identifies them as a key stakeholder for the Project; however, as the Project is not on or near a pipeline corridor, there is no requirement to prepare a pipeline hazard analysis in accordance with AS 2885.6 – *Pipelines: Gas and Liquid Petroleum – Part 6 Pipeline safety management*.

5.1.5 Storage Details of Hazardous Goods

Table 2:Threshold Quantities for Hazardous Materials

| Stage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Material                                                       | UN Number | DG Class                                                                        | Category                                  | Packing Group | Project Storage Quantities and Transport Movements                                                                                                                                                                                                                                                                                                                                                                                                              | Storage Threshold   | Transport Threshold |            | Exceed SEPP threshold? |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-----------|---------------------------------------------------------------------------------|-------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|------------|------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                |           |                                                                                 |                                           |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     | Movements           | Quantities |                        |
| SYD 1 Stage 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Lithium-ion Batteries                                          | 3480      | 9                                                                               | Miscellaneous dangerous goods and article | II            | <div><div>499 cabinets of the Eaton 93Li G2 12-Module racks</div><div>Total stored on-site: <b>323,400 kg<sup>1</sup></b></div><div>Replaced every 7 years. Estimated 1-2 trips per year</div></div>                                                                                                                                                                                                                                                            | N/A                 | >1000 annually      | no limit   | No                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Diesel Fuel / HVO                                              | 1202      | N/A – Not a DG but it is a C1 combustible liquid<br>GHS Flammability Category 4 |                                           | III           | <div><div>Building B, 1 Fuel Room: 6 bulk tanks in the Fuel Room – 6 x 86, kL= 516 kL</div><div>Building C and D, 1 Fuel Room: 11 bulk tanks in the Fuel Room – 11 x 86 = 946 kL</div><div>Day tanks servicing the generators: 27 in Building B, 25 in Building C and D each. Day tank 1000 L each.</div><div>Total Bulk Fuel Tanks: 1462 kL</div><div>Total Day tanks: 77 kL</div><div>Total Diesel/HVO stored on-site for Stage 2: <b>1539 kL</b></div></div> | N/A <sup>2</sup>    | N/A                 | N/A        | No                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Sulphur hexafluoride (SF <sub>6</sub> ): Switchgear insulation | 1080      | 2.2                                                                             | Non-toxic compressed gas                  | N/A           | <div><div>SF<sub>6</sub> is contained within switchgear as an insulation medium</div></div>                                                                                                                                                                                                                                                                                                                                                                     | N/A                 | N/A                 | N/A        | No                     |
| SYDGPU1 (Stage 1) <sup>4</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Lithium-ion Batteries                                          | 3480      | 9                                                                               | Miscellaneous dangerous goods and article | II            | <div><div>3,860 kg</div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                  | N/A                 | >1000 annually      | no limit   | No                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Diesel Fuel                                                    | 1202      | N/A – Not a DG but it is a C1 combustible liquid                                |                                           | III           | <div><div>190 kL</div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                    | N/A <sup>2</sup>    | N/A                 | N/A        | No                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Transformer oil                                                | N/A       | N/A – Not a DG but may be a C2 combustible liquid                               |                                           | N/A           | <div><div>&lt; 10 kL</div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                | N/A <sup>2</sup>    | N/A                 | N/A        | No                     |
| Total on the Site                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Lithium-ion Batteries                                          |           | 9                                                                               | Miscellaneous dangerous goods and article | II            | <div><div>327,260 kg</div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                | N/A                 | >1000 annually      | no limit   | No                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Diesel /HVO Fuel                                               |           | N/A – Not a DG but it is a C1 combustible liquid                                |                                           | III           | <div><div>1729 kL</div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                   | N/A                 | N/A <sup>2</sup>    | N/A        | N/A                    |
| Natural Gas                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                | 1971      | 2.1                                                                             | Flammable gases                           | N/A           | N/A (Jemena Gas Mains)                                                                                                                                                                                                                                                                                                                                                                                                                                          | 100 kg <sup>3</sup> | >500 annually       | no limit   | N/A (Jemena Gas Mains) |
| <div>Notes:</div> <div><div>As a base case, the Proponent will be using the cabinets with maximum 12 racks or similar [9]. While some customers may require lower quantities, this risk screening conservatively considers the maximum allowance designed for and includes the weight of both lithium and the battery solution.</div><div>C1 and C2 combustible liquids do not have General Screening Threshold Quantities.</div><div>As per the minimum quantity for Class 2.1 flammable gasses in Table 1 of the <i>Hazardous and Offensive Development Application Guidelines – Applying SEPP 33</i> [3].</div><div>As documented in Stage 1 Development Application</div></div> |                                                                |           |                                                                                 |                                           |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     |                     |            |                        |

## 5.2 Preliminary Risk Screening Outcome

Neither the quantity screening threshold nor the transport screening threshold is exceeded as per the *Resilience and Hazards SEPP*, by *Applying SEPP 33 Guideline*. The Site is not potentially hazardous and therefore a PHA is not required. The Project will, however, need to demonstrate compliance with codes and standards (as identified in Section 6) as per the SEPP process shown in Figure 5.

The following recommendation is made

- Consultation with Jemena will be required to confirm that the Project's construction methodology does not impact the Jemena gas main, located to the north east of the Project.



## 6 Standards compliance and best practice review

The Department of Planning, Housing and Infrastructure (DPHI) had identified assessment requirements additional to the industry-specific SEARs through the SEARs dated 8 April 2025 issued for the SSDA (SSD-81928961) [10]. The Project Standards Compliance and Best Practice Review was conducted to address the additional requirements of the SEARs for the following relevant standards:

- *FM Global Property Loss Prevention Data Sheet 5-32 – Data Centres and Related Facilities.*
- *AS/NZS 4681 – Storage and handling of Class 9 (miscellaneous) dangerous goods and articles*
- *AS IEC 62619 – Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for secondary lithium cells and batteries, for use in industrial applications*
- *AS 1940 – Storage and handling of flammable and combustible liquids.*

The following subsections outline the intent of the relevant parts of the standards mentioned above and how the Project's design will meet that intent.

### 6.1 FM Global property loss prevention datasheet 5-32

The application and intent of FM Global Datasheet 5-32 is to provide property loss prevention guidance for data centres and related facilities, focusing on minimising fire and environmental risks to sensitive electronic equipment. It aims to protect property and ensure business continuity by identifying hazards and recommending mitigation strategies.

It was noted that the additional SEAR's requirement included compliance with the relevant aspects of this datasheet. While this datasheet does not directly address the significant offsite risks, it can serve as guidance in the relevant sections to reduce the risk of fire or explosion and minimise these risks. This guideline covers a wide range of data centres. Therefore, full compliance with this guideline for the Project was not deemed necessary. This is in line with the defined scope in the datasheet, which indicates that it identifies the hazards associated with these facilities and recommends risk-mitigation solutions from a property protection and business continuity perspective.

Table 3 presents how the Project meets the intent of the FM Global Datasheet 5-32 to provide adequate fire and explosion protection, which are key hazards associated with lithium-ion batteries.

**Table 3: FM Global Datasheet 5-32 requirements and intent demonstration**

| Item                      | Description of Requirements                                                                                                                                                                                                                                                                                                                           | Demonstration of Intent of Requirement                                                                                                                                                                                                                                                                      |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Construction and Location | <ul style="list-style-type: none"> <li>Construct data centres of non-combustible materials</li> </ul>                                                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>The design is compliant. The design considers the Building Code of Australia (BCA) requirements.</li> <li>Power train units (PTUs) are provisioned with a 2-hour fire-rated structure with a minimum of 1000 mm space between each PTU.</li> </ul>                   |
|                           | <ul style="list-style-type: none"> <li>Select a building site that is above the predicted 0.2% annual exceedance (500-year) flood elevation and includes 1 to 2 ft (0.3 to 0.6 m) of freeboard. Ensure the building site is at least 500 ft (152 m) from direct wave impacts and/or high flood-flow velocities (i.e., above 7 fps [2 m/s])</li> </ul> | <ul style="list-style-type: none"> <li>TTW (engineering consultant) is conducting the flood assessment in respect to Australian standards and development requirements in NSW.</li> <li>The Project is located far from the sea.</li> </ul>                                                                 |
|                           | <ul style="list-style-type: none"> <li>The limit on data centre ceiling heights to be maximum 30 ft (9.1 m)</li> </ul>                                                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>The Project design has provisioned a height of the ceiling of 6.5 m for the Data Halls.</li> </ul>                                                                                                                                                                   |
|                           | <ul style="list-style-type: none"> <li>Protect data centres from external fire exposure from transformers and diesel generators.</li> </ul>                                                                                                                                                                                                           | <ul style="list-style-type: none"> <li>The Project has considered a fire protection system, including sprinklers and hydrants.</li> <li>Diesel/HVO tanks are within fire-rated chambers.</li> <li>Diesel/HVO generators are within enclosures.</li> <li>Dry-type transformers will be used.</li> </ul>      |
|                           | <ul style="list-style-type: none"> <li>Do not locate data centres in multistorey buildings that have inadequately sprinklered or unprotected areas of the building.</li> </ul>                                                                                                                                                                        | <ul style="list-style-type: none"> <li>The building has multiple levels and is equipped with a sprinkler system.</li> <li>Diesel/HVO tanks are provisioned within fire-rated fuel chambers (rooms).</li> <li>Diesel/HVO generators are provisioned within enclosures and with water mist system.</li> </ul> |
|                           | <ul style="list-style-type: none"> <li>Locate data centres so they are not exposed to damage from any hazardous process, storage, corrosive or ignitable liquid or vapor, industrial pollutants, or mechanical equipment such as overhead cranes.</li> </ul>                                                                                          | <ul style="list-style-type: none"> <li>The Project is located so it is not exposed to damage from any hazardous process, storage, corrosive or ignitable liquid or vapour, industrial pollutants, or mechanical equipment such as overhead cranes.</li> </ul>                                               |

| Item       | Description of Requirements                                                                                                                                                                                                                                                                                                                                                                                                     | Demonstration of Intent of Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            | <ul style="list-style-type: none"> <li>■ Provide one-hour fire-rated interior walls, partitions, and floors in accordance with Data Sheet 1-21, Fire Resistance of Building Assemblies, for all of the following: <ul style="list-style-type: none"> <li>– data processing equipment rooms</li> <li>– battery power rooms, uninterruptible power supply (UPS) rooms</li> <li>– network/fibre optic rooms</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>■ The data hall's walls are required to be a minimum of -/120/120 (assuming non-load bearing) with doors achieving -/120/30.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Occupancy  | <ul style="list-style-type: none"> <li>■ Do not store or stage combustible materials in the data processing equipment room.</li> </ul>                                                                                                                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>■ The Project is designed not to store or stage combustible materials in the data processing equipment room.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|            | <ul style="list-style-type: none"> <li>■ Do not store combustible materials in electrical or mechanical equipment rooms.</li> </ul>                                                                                                                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>■ The Project is designed not store combustible materials in electrical or mechanical equipment rooms</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Protection | <ul style="list-style-type: none"> <li>■ Provide automatic sprinkler protection: <ul style="list-style-type: none"> <li>– Use FM approved quick-response (QR) sprinklers with the following specifications:</li> </ul> </li> </ul>                                                                                                                                                                                              | <p>The design of the protection system is partly compliant with this data sheet; the proposed design meets requirements outlined in items 1, 3, 4 and 7; however, the system has been proposed and will be installed as per Australian standards i.e., <i>AS 2118.1:2017 Automatic Fire Sprinkler System</i> and National Construction Code (NCC). So that adequate fire protection for the Project will be provided:</p> <ul style="list-style-type: none"> <li>■ Sprinkler demand is proposed to be 3240 L/min equivalent to 54 L/s.</li> <li>■ Sprinkler density will be 8 mm/min over 320 sqm</li> <li>■ Pre-action Sprinkler System is proposed: A single knock, double interlock pre-action sprinkler system shall be provided in the Data Halls, Meet Me Room (MMR), and PTU's enclosure.</li> <li>■ Three hydrants are proposed to flow simultaneously with the flowrate of 30 (1200L/min) L/s for the hydrant system.</li> <li>■ The low-pressure water mist system is designed to provide fire suppression coverage for generator enclosure located at gantry areas. The system is intended to protect the generator and associated equipment in the enclosure.</li> <li>■ Fire detection and alarm system will be designed in accordance with NCC, relevant Australian Standards and as per the requirements of GreenSquareDC.</li> </ul> |
|            | <ul style="list-style-type: none"> <li>■ 1- Minimum density 0.2 gpm/ft<sup>2</sup> (8 mm/min).</li> </ul>                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|            | <ul style="list-style-type: none"> <li>■ 2- For wet-non-interlock or single interlock pre-action systems, use a demand area of 2500 ft<sup>2</sup> (230 m<sup>2</sup>) with minimum spacing 12 ft (3.6 m).</li> </ul>                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|            | <ul style="list-style-type: none"> <li>■ 3- For double interlock pre-action systems, use a demand area of 3500 ft<sup>2</sup> (320 m<sup>2</sup>)</li> </ul>                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|            | <ul style="list-style-type: none"> <li>■ 4- Sprinkler deflector distance from the ceiling (minimum 1.75 in (44 mm); maximum: 4 in (100 mm).</li> </ul>                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|            | <ul style="list-style-type: none"> <li>■ 5- Provide linear and area spacing of sprinklers in line with Data Sheet 2-0, Installation Guidance for automatic sprinklers</li> </ul>                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Item | Description of Requirements                                                                                                                                                  | Demonstration of Intent of Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      | <ul style="list-style-type: none"> <li>6- Hose allowance of 250gpm (950 L/min)</li> </ul>                                                                                    | <ul style="list-style-type: none"> <li>– Main Fire Detection Control Indicating Equipment (MFDCIE) – is the main control and indicating equipment for the whole fire detection system in the building. Located in the fire control centre at level 00.</li> <li>– Main Emergency Warning Intercom Control Indicating Equipment (MEWICIE) – is the main control and indicating equipment for audible occupant warning and warden intercom communication. Located in the fire control centre at level 00.</li> <li>– Data Gathering Panel (Detection System) and Data Gathering Panel (EWIS System) – field interface between fire devices and MFDCIE and MEWICIE. Assist and support loop management for fire detection system. located in each level for building B, C and D.</li> <li>– Point type smoke detector – shall be provided in front of house area, circulation corridors, office, storage, lift lobbies and other part of back of house area.</li> <li>– Thermal detector – shall be provided in areas where smoke detectors would be impractical and cause false alarms.</li> <li>– Flame detector – shall be provided in the generator enclosure.</li> <li>– Multi-Aspirated Smoke detector (MASD) – shall be provided in Data Halls, Mech corridors and spaces where location is inaccessible for maintenance.</li> <li>– EWIS speakers – speakers shall be provided throughout the building to ensure that alarms and messages are intelligible and audible throughout the building.</li> <li>– Visual Alarm Devices (VADs) – shall be installed throughout the Data halls and other areas with loud environments i.e. plant rooms, generator rooms and mechanical rooms.</li> <li>– Warden Intercom Phone (WIP) – WIP shall be installed at each floor landing of stairs.</li> </ul> |
|      | <ul style="list-style-type: none"> <li>7- Water supply duration of 60 minutes</li> </ul>                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|      | <ul style="list-style-type: none"> <li>8- Install fire detection per Data Sheet 5-48, Automatic Fire Detection, in conjunction with the relevant recommendations.</li> </ul> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|      |                                                                                                                                                                              | <ul style="list-style-type: none"> <li>■ Fire hose reels also provisioned for the loading dock and fuel storage area.</li> <li>■ PTUs are provisioned to have a FRL 120/120/120 (2-hour fire rated)</li> </ul> <p>The number of sprinklers is yet to be finalised during the detail design. The overall fire protection system strategy will be reviewed and endorsed by Fire and Rescue NSW.</p> <p>Overall, the intent of FM Global datasheet 5-32 in terms of adequate fire protection for the Project will be achieved by implementing these requirements.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |



## 6.2 AS/NZS 4681:2000

Each UPS system is equipped with lithium-ion battery cabinets. These cabinets incorporate an integrated Battery Management System (BMS) that continuously monitors battery condition and performance. The BMS includes multiple features designed to enable system shutdown or isolation in response to detected faults.

Lithium-ion batteries are classified as Class 9 dangerous goods as per the ADG Code [2]. These batteries have the potential for thermal runaway, which may result in fire or explosion. The standard governing the storage and handling of lithium-ion batteries is *AS 4681:2000*. While the batteries utilised in the UPS are in use, the intent of this standard can still be applied.

The proposed quantity of lithium-ion battery in the project is 323,400 kg (refer to Table 2).

Table 4 presents how the intent of *AS/NZC 4681:2000* is met.

**Table 4: AS/NZS 4681 requirements and intent demonstration**

| Item                 | Description of Requirements                                                                                                                                                                                                                                                                    | Demonstration of Intent of Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Separation distances | <ul style="list-style-type: none"> <li>No special separation requirements for this application of the batteries in this standard. However: <ul style="list-style-type: none"> <li>Flammable products should be segregated from non-flammable materials by at least 3 m.</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>There will be no flammable storage near batteries.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                      | <ul style="list-style-type: none"> <li>The dangerous goods shall be kept away from sources of heat.</li> </ul>                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>No sources of heat close to the batteries.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Ventilation          | <ul style="list-style-type: none"> <li>Adequate natural or mechanical ventilation shall be provided appropriate to the type of goods and nature of operation</li> </ul>                                                                                                                        | <ul style="list-style-type: none"> <li>PTUs will be equipped with a cooling and ventilation system. Also, the batteries are sealed, and under normal conditions, it is unlikely that they will release any vapours.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                 |
| Spill containment    | <ul style="list-style-type: none"> <li>The dangerous goods shall be kept in such a manner as to avoid spillage.</li> </ul>                                                                                                                                                                     | <ul style="list-style-type: none"> <li>Each cell of the battery contains a solid anode and a cathode, and a small quantity of liquid electrolyte. As the batteries are sealed, under normal conditions, it is unlikely that the electrolyte will spill.</li> </ul>                                                                                                                                                                                                                                                                                                                                             |
| Fire protection      | <ul style="list-style-type: none"> <li>Fire protection system shall be designed so that the equipment is appropriate for the type and quantities of the dangerous goods being stored. It might be in addition to BCA requirements.</li> </ul>                                                  | <ul style="list-style-type: none"> <li>The design proposes a pre-action sprinkler system and wet sprinklers, in addition to fire hydrants, for the Project. Fire hose reel is provisioned for the loading dock</li> <li>Adequate fire extinguishers will be considered. In this standard, a dry powder-type extinguisher has been recommended for indoor electrical equipment and switchboards. However, for the data halls, this type is not deemed suitable due to the damage to the delicate electronic components. Instead, carbon dioxide (CO<sub>2</sub>) extinguishers have been considered.</li> </ul> |
|                      | <ul style="list-style-type: none"> <li>Portable fire extinguishers for the areas of special risks.</li> </ul>                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

In addition, the design will include off-gas detection sensors for the PTUs. Upon detection, the Battery Management System (BMS) will trip the affected battery/batteries to prevent thermal runaway. The off-gas detection system will also be integrated into the fire detection and alarm system to provide supervisory signals.

## 6.3 AS IEC 62619:2023

*AS IEC 62619* is primarily focused on the safety and performance testing of lithium-ion cells and batteries used in industrial applications, such as energy storage systems, UPS units and motive power. It covers electrical, mechanical, and environmental safety tests, Battery Management System (BMS) functionality, protection against thermal runaway, short circuits, and overcharging and such. However, it does not specifically prescribe separation distances or detailed storage layout requirements for lithium-ion batteries.

Therefore, no further assessment has been conducted based on *AS IEC 62619*. In lieu of this standard, it is recommended that the testing method of UL 9540A [11] will be adopted for the lithium batteries by the manufacturer. The results from the testing will address key issues in regards with thermal propagation, ventilation requirements and installation instructions as well as fire protection effectiveness.

## 6.4 AS 1940:2017

Diesel/HVO is stored in bulk fuel storage tanks that supply fuel to the backup generators via fuel day tanks. Bulk storage tanks are linked to distribution systems that supply fuel to day tanks connected to generator units positioned across the site.

Each aboveground bulk tank has a capacity of 86 kL and each day tank has a capacity of 1 kL. The quantity of the diesel in SYD1 Stage 2 is approximately 1540 kL and is detailed in Table 2.

*AS 1940:2017* governs the storage and handling of the diesel/HVO as a combustible liquid of class C1. Section 5 of this standard sets out the requirements for the bulk storage tanks. Day tanks can be considered as service tanks (Clause 5.14) in the context of the standard and shall be in accordance with Clause 5.6 in addition to 5.14. Table 5 presents how the Project meets the intent of this standard.

As the Project proposes to utilise dry-type transformers, no insulating oil (a combustible liquid) will be used in power transformers.

Table 5: AS 1940:2017 requirements and intent demonstration

| Item                               | Description of Requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Demonstration of Intent of Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tank construction and installation | <ul style="list-style-type: none"> <li>The tank shall be designed and constructed to comply with AS 1692.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                              | <ul style="list-style-type: none"> <li>All tanks will be designed and constructed to comply with AS 1692.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                    | <ul style="list-style-type: none"> <li>The distance between the horizontal tanks shall be at least 600 mm.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>All tanks separation distance is 600 mm.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                    | <ul style="list-style-type: none"> <li>The tanks shall not be arranged end to end unless the potential for end failure and resulting exposure hazard has been taken into account when determining tanks' location.</li> </ul>                                                                                                                                                                                                                                                                                     | <ul style="list-style-type: none"> <li>The design risk register notes that the bulk tanks proposed for the Project are rectangular horizontal tanks. End failure risk is considered to be less likely than side failure risk for these tanks. Horizontal bulk tanks have internal bracing to protect against end or side failure.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                    | <ul style="list-style-type: none"> <li>Spill containment for the day tanks.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                            | <ul style="list-style-type: none"> <li>The day tanks will be inside the generator set enclosures which provide spill containment.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                    | <ul style="list-style-type: none"> <li>Indoor tanks with a capacity greater than 1000 L shall be installed on or below the lowest floor of the building.</li> </ul>                                                                                                                                                                                                                                                                                                                                               | <ul style="list-style-type: none"> <li>The bulk tanks are proposed to be located on the lowest level.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                    | <ul style="list-style-type: none"> <li>Above-ground tank chambers: <ul style="list-style-type: none"> <li>The walls shall have an FRL 240/240/240.</li> <li>The roof shall be of reinforced concrete at least 150 mm thick. And the floor shall be of masonry or reinforced concrete.</li> <li>The tank chamber shall not have an automatic pump out system. If spills could accumulate in the tank chamber, a manually operated low-point sump or pump away facility should be installed.</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>The fuel room walls (bulk tank chambers) will be fire-rated to FRL 240/240/240.</li> <li>The roof will be of reinforced concrete at least 150 mm thick. And the floor shall be of masonry or reinforced concrete <ul style="list-style-type: none"> <li>As per BCA, floors in a Class7b building also require 4-hour fire rating (FRL 240/240/240) so that roof would need to achieve 4hrs rather than being 150 mm thick.</li> </ul> </li> <li>Any doorway and access opening shall be protected by a fire door or cover having an FRL - /120/120 and designed to be normally closed.</li> <li>The design has provisions for drip trays under pumps and filters to collect the small drips and spills, so accumulation of spills is unlikely.</li> </ul> |



| Item                 | Description of Requirements                                                                                                                                                                                                                                                                                                                                         | Demonstration of Intent of Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      |                                                                                                                                                                                                                                                                                                                                                                     | <ul style="list-style-type: none"> <li>– In the unlikely event of a major spill, a vacuum truck or a temporary pump could be used to drain spilled fuel from the fuel room.</li> </ul>                                                                                                                                                                                                                                                                                                                          |
| Fill points          | <ul style="list-style-type: none"> <li>■ Location of the fill point shall be outside (if practicable), readily accessible and protected from accident damage</li> <li>■ The fill point shall be clearly identifiable</li> <li>■ The areas around the fill point and the hose connection shall be impervious to the product.</li> <li>■ Spill containment</li> </ul> | <ul style="list-style-type: none"> <li>■ The fuel tank fill points are proposed to be outside. The fill point shall be clearly identifiable and be protected from accidental damage.</li> <li>■ The area around the fill points will be impervious to diesel/HVO.</li> <li>■ A 15 L spill containment will be provided for each fill point.</li> </ul>                                                                                                                                                          |
| Level indication     | <ul style="list-style-type: none"> <li>■ The tank fill level shall be monitorable or gauged with suitable high-level alarms.</li> </ul>                                                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>■ The tank's fill level can be monitored or gauged, including its normal level.</li> <li>■ A high-level alarm (LAH) will be set to no more than 97% of the maximum fill level. The alarm will be set to trigger when the normal fill level is exceeded.</li> </ul>                                                                                                                                                                                                       |
| Venting              | <ul style="list-style-type: none"> <li>■ Tanks shall be fitted with adequate venting</li> </ul>                                                                                                                                                                                                                                                                     | <ul style="list-style-type: none"> <li>■ Vapours will be safely discharged outdoors, separate from the filling pipe.</li> <li>■ The vent will be sized appropriately, e.g., in accordance with API 2000.</li> <li>■ The vent discharge point will be located at least 4 m above ground and 2 m laterally from any opening into a building (e.g., windows and doors).</li> <li>■ The discharge end of the vent will be protected from the ingress of foreign material by a protected cage or fitting.</li> </ul> |
| Separation distances | <ul style="list-style-type: none"> <li>■ Adequate separation to security fence and onsite protected places and offsite protected places</li> </ul>                                                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>■ The tanks are installed in a fuel chamber with FRL 240/240/240, which provides adequate separation</li> </ul>                                                                                                                                                                                                                                                                                                                                                          |

| Item            | Description of Requirements                                                                                                                                                                                                                                                                                                                                                                             | Demonstration of Intent of Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fire protection | <ul style="list-style-type: none"> <li>■ Fire extinguisher at fill point: at least one powder-type extinguisher at ground level of each loading position and additional powder type at the loading platform for top-loading installations.</li> <li>■ Any tank that is fire rated (clause 5.9.4) may be operated without fire protection additional to that otherwise required for the site.</li> </ul> | <ul style="list-style-type: none"> <li>■ Tank vehicle delivery location will be provided with at least one powder-type extinguisher for each fill point.</li> <li>■ Bulk tanks are proposed to be located in a chamber with walls of FRL 240/240/240. A fire detection and alarm system and an automatic fire sprinkler system are proposed.</li> <li>■ The low-pressure water mist system is designed to provide fire suppression coverage for the generator enclosure located at the gantry areas. The system is intended to protect the generator and associated equipment in the enclosure.</li> </ul> |

## 7 Additional legislative notifications

### 7.1 WHS Regulation

Part 7.1 of the WHS Regulation 2025 [6] sets out the requirements for the use, handling, and storage of hazardous chemicals at a workplace. Specifically, the requirements for exceeding manifest and placard quantities are found in Divisions 3 and 4 of Part 7.1, respectively.

The hazardous chemical associated with the Project is Diesel/HVO, classified as a Category 4 Flammable Liquid (C1 combustible liquid) under the Global Harmonised System (GHS).

It should be noted that Regulation 328(4)(b) excludes “fuel, oils or coolants in a container fitted to a vehicle, vessel, aircraft, mobile plant, appliance or other device, if the fuel, oil or coolant is intended for use in the operation of the device”. This would also exclude diesel/HVO stored in the day tanks of generators from the requirements of Part 7.1. However, due to the large total quantity of diesel/HVO to be stored at the Site, it is considered best practice to follow the requirements of Part 7.1. for the cumulative volume of diesel/HVO, including all storage tanks and the day tanks.

#### 7.1.1 Placard Quantities

Placard Quantities Division 4 states that outer warning placards and placards are to be displayed if the placard quantities are exceeded. The maximum allowable placard quantity of diesel/HVO as per Schedule 11 of the WHS Regulation is 10 kL [6].

Currently, the proposed quantity on site exceeds the placard quantity, so the following measures shall be taken:

- Outer warning placards shall be displayed at any entrance where emergency services may enter the workplace in accordance with Regulation 349 and Schedule 13 of the WHS Regulation.
- Placards shall be displayed on or near the containers of diesel/HVO in accordance with Regulation 350 and Schedule 13 of the WHS Regulation.

Before the commissioning of Stage 2 commences, placards shall be provided at any new entry point and at the diesel/HVO fuel storage locations.

#### 7.1.2 Manifest Quantities

Manifest Quantities Regulation 348 states that the “Regulator must be notified if manifest quantities are to be exceeded”. The maximum allowable manifest quantity for diesel/HVO (Category 4 flammable liquid) as per Schedule 11 of the WHS Regulation is 100 kL [6].

Currently, the proposed quantity on site exceeds the maximum manifest quantity so the following measures shall be taken:

- A manifest of all Schedule 11 chemicals shall be prepared in accordance with Regulation 347 and Schedule 12 of the WHS Regulation.
- SafeWork NSW must be notified of diesel/HVO storage exceeding manifest quantities in accordance with Regulation 348 of the WHS Regulation.
- An emergency plan shall be prepared for the Site and provided to Fire and Rescue NSW, as required by Regulation 361 and Division 4 of Part 3.2 of the WHS Regulation.

Before the commissioning of Stage 2, the Site notification shall be amended with a revised site plan covering the new hazardous chemical storage locations, and an updated emergency response plan shall be sent to Fire and Rescue NSW.

### 7.1.3 Battery Quantities

Regulation 328(4) sets out the exclusions from Part 7.1 for hazardous chemicals in certain circumstances. Regulation 328(4)(a) excludes “hazardous chemicals in batteries when incorporated in plant”. As such, the use of lithium-ion batteries at the Site is excluded from the requirements of Part 7.1, when in use for notification to SafeWork.

However, Regulation 361 states that for a facility where a total quantity of 25,000 kg or more of the following kind of lithium batteries is handled or stored at a workplace, then the workplace must give a copy of the emergency plan prepared under Part 3.2, Division 4 to Fire and Rescue NSW;

- stand-alone batteries,
- batteries that are part of a battery pack or energy storage system,
- batteries that are part of an electric vehicle or item of plant that is routinely used, charged or stored at the workplace.

## 7.2 Protection of the Environment Operations Act (PoEP Act)

The PoEO Act sets out the scheduled activities that require a licence. The Table 6 below shows the threshold criteria for chemical storage to be declared a scheduled activity and therefore require a licence.

**Table 6: Criteria for chemical storage under the PoEO Act**

| Activity                                 | Criteria                                                                                                                                                     |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General chemicals storage                | Capacity to store more than 20 tonnes of pressurised gases, 200 tonnes of liquefied gases or 2,000 tonnes of chemicals in any other form                     |
| On-site generated chemical waste storage | Involves storing on-site at any time more than 5 tonnes of any chemical substance produced on-site that is prescribed waste, not including excluded material |
| Petroleum products storage               | Capacity to store more than 200 tonnes of liquefied gases or 2,000 tonnes of chemicals in any other form                                                     |

General chemical storage is defined to include all chemical substances classified as DGs by the ADGC, which includes lithium-ion batteries. There are approximately 328 tonnes of lithium-ion batteries proposed to be stored on-site. This is below the 2,000-tonne limit therefore lithium-ion battery storage is not classified as a scheduled activity and a licence is not required.

Diesel/HVO is a petroleum product. There are approximately 1730 kL / 1470 tonnes of diesel/HVO proposed to be stored on-site. This is less than the 2,000-tonne limit of a petroleum product storage; therefore, diesel/HVO storage is not classified as a scheduled activity, and a licence is not required.

The PoEO Act may also require a licence for other scheduled activities such as electricity generation, but this is outside the scope of this report.

## 8 Findings and Recommendations

### 8.1 Resilience and Hazards SEPP Screening

As neither the quantity screening threshold nor the transport screening threshold is exceeded as per the *Resilience and Hazards SEPP*, by *Applying SEPP 33 Guideline*, a PHA is not required.

The potential for offence due to the noise exceedance during construction and operation is being assessed through the Noise and Vibration Impact Assessment. The assessment considers results from noise monitoring and recommends noise mitigation design measures, such as noise barriers, where required.

### 8.2 Pipeline Hazard Analysis

The Project is not adjacent to gas or petroleum pipelines. Therefore, no pipeline hazard analysis is required. For Jemena gas mains near the site boundary, the respective asset affected information provides excavation guidelines. A Jemena third-party application form is required.

### 8.3 Other Findings

In addition to the requirements of the *Resilience and Hazards SEPP*, the legislative requirements of the WHS Regulation and the PoEO Act were assessed. The findings from these assessments are:

- The placard quantity thresholds for diesel/HVO as set out by Schedule 11 of the WHS Regulation are exceeded. Placards in accordance with Schedule 13 of the WHS Regulation shall be displayed.
- The manifest quantity thresholds for diesel/HVO as set out by Schedule 11 of the WHS Regulation are exceeded. A manifest of all Schedule 11 chemicals must be prepared.
- The criteria for an environment protection licence for chemical and petroleum product storage under the PoEO Act is not exceeded and so an environment protection licence is not required for chemical storage.
- An emergency plan shall be prepared for the Site and provided to the Fire and Rescue NSW as per the requirements of Regulation 361 of the WHS Regulation.

### 8.4 Compliance to relevant standards and codes

The Project standards compliance and best practice review was conducted to address the additional requirements of the SEARs in the relevant aspects and concluded that the intent of the relevant parts of the following standards was achieved.

- *The FM Global Property Loss Prevention Data Sheet 5-32 – Data Centres and Related Facilities*
- *AS/NZS 4681 – Storage and handling of Class 9 (miscellaneous) dangerous goods and articles*
- *AS IEC 62619- Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for secondary lithium cells and batteries*
- *AS 1940 – Storage and handling of flammable and combustible liquids.*

The review concluded that the intent of the appropriate clauses of the standards is demonstrated. It is recommended that, in lieu of AS IEC 62619, the manufacturer shall ensure that lithium batteries and the BMS comply with the testing requirements of UL 9540A.



## 9 References

- [1] NSW Department of Planning & Infrastructure, “Hazardous and Offensive Development Application Guidelines: Applying SEPP 33,” State of NSW, 2011.
- [2] National Transport Commission, Australian Code for the Transport of Dangerous Goods by Road & Rail, 2020.
- [3] NSW Department of Planning & Infrastructure, *Applying SEPP 33, Hazardous and Offensive Industry Development Application Guidelines*, 2011.
- [4] NSW Department of Planning & Infrastructure, “Assessment Guideline: Multi-level Risk Assessment,” State of New South Wales, Sydney, 2011.
- [5] NSW Department of Planning & Infrastructure, “Hazardous Industry Planning Advisory Paper No 6: Hazard Analysis,” State of NSW, 2011.
- [6] NSW Government, “Work Health and Safety Regulation 2025,” 2025.
- [7] DNV, Safety, operation and performance of grid-connected energy storage systems, 2017.
- [8] Australian Government, *Fuel Quality Standards (Paraffinic Diesel) Determination 2025*, Federal Register of Legislation, 2025.
- [9] Eaton, *Eaton 93Li Gen2 Lithium Battery Cabinet Specification-V1.2*.
- [10] NSW Department of Planning, Housing and Infrastructure, *Planning Secretary's Environmental Assessment Requirements SSD-81928961*, Hills Shire: NSW Government, 2025.
- [11] UL Solutions, *UL 9540A Test Method for Battery Energy Storage Systems (BESS)*.



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