

10 November 2025

Taryn Pace
Senior Planning Officer
Townsville City Council - Planning & Development Section, Executive Office Division
142 Walker Street
Townsville QLD 4810

Re: Response to MCU25/0060 Information Request - 128 Manton Quarry Road Calcium

Dear Taryn,

This letter has been prepared by EMM Consulting Limited (EMM) on behalf of Solquartz Pty Ltd and Private Energy Partners (PEP) in response to the Information Request received on 26 September 2025. Pursuant to Section 13.2 of the *Development Assessment Rules 2017* (version 3.0), we provide a complete response to this information request within this document.

The responses are intended to provide sufficient information to facilitate assessment and approval of MCU25/0060 Major Electricity Infrastructure, Substation and Undefined Use - Battery Energy Storage System (BESS) located at 128 Manton Quarry Road, Calcium QLD 4816.

Error! Reference source not found. overleaf summarises the response to Information Request. Supporting documentation has been prepared to support the response, and are included as:

- Attachment A – Relevant plans (dated 22 October 2025)
- Attachment B1 – Fire Safety Study Supernode North – Battery Energy Storage System (BESS) (version 1.0, dated 6 November 2025)
- Attachment B2 – Solquartz - Hazardous Chemicals Thresholds (dated 29 October 2025)
- Attachment C – Noise impact assessment (version 3.0, dated 10 November 2025)
- Attachment D – Road development traffic access map (dated 22 October 2025)
- Attachment E - Water resources impact assessment (version 3.0, dated 30 October 2025)
- Attachment F – Concept landscape plan (dated 22 October 2025).
- Attachment G – Infrastructure charges calculator

Public Notification in accordance with Part 4 of the *Development Assessment Rules 2017* will commence shortly, details of which will be confirmed in separate correspondence.

A separate letter is provided as part of this response to inform the assessment team of the updated estimated light vehicle traffic movements associated with the construction phase. Please see attached *MCU25/0060 Traffic Impact Assessment - construction light vehicle movement estimate adjustment* for details relating to this vehicle estimate modification.

If you require any additional information, have questions or require additional information, please do not hesitate to get in contact on 0413 897 691 or via ecampbell@emmconsulting.com.au

Yours sincerely



Elise Campbell

Senior Environmental Engineer

ecampbell@emmconsulting.com.au

Reviewed AM 30.10.2025

1 Information response

Error! Reference source not found. summarises the information requested by Townsville City Council (received on 26 September 2025), EMM’s response and where necessary, a cross reference to the appropriate application material section or further supporting information.

Table 1.1 Information request MCU25/0060 – applicant response

IR Identifier	Detail	Applicant response	Additional information reference
IR1	Amended Plans The applicant is requested to provide updated plans that are appropriately dimensioned, including all road reserve and buffer zone widths, landscape buffer areas and widths, internal setbacks, development setbacks to boundaries, roads and creeks (including all temporary construction laydown areas), and building dimensions. <i>Reason - To allow for appropriate and thorough assessment of the application material.</i>	Additional plans detailing the dimensions of key infrastructure features across the development is provided as Attachment A of this memorandum: • Project Dimensions Extent 1 (page 1) • Project Dimensions Extent 2 (page 2)	Attachment A
IR2	Risk Assessment and Emergency Management Planning The applicant is requested to provide a Risk assessment of any failure modes which may result in release of contaminants that can affect on the health, safety or amenity of nearby residential land or other sensitive land uses. Further, the applicant is requested to provide an Emergency Management Plan (EMP), detailing incident response protocols to ensure potential offsite impacts are appropriately minimised. Consideration must be given to: a) Identification of likelihood of risks such as thermal runaway, fire and explosion, electrical faults, chemical leaks or spills, affecting a significant portion of the BESS; b) the frequency of mega-pack battery thermal failures recorded globally; c) firefighting and fire suppressing techniques typically used to manage small or large scale fires at battery	The information requested has been addressed in the Fire Safety Study (Halliwell, 2025) (Attachment B1). Please note, Appendix B1 has been redacted due to confidentiality agreements. A summary to each of the points raised responding to the considerations from TCC are provided below: a) Propensity for fire occurrence is discussed within Section 4.2.3.2 of Attachment B1. Leaks/spills are modelled in Section 5.3 and outputs illustrated in Section 5.5. b) BESS failure and incidents is discussed within Section 4.2.3.2 of Attachment B1. Figure 10 shows the global grid-scale BESS deployment and failure statistics from the EPRI Failure Incident Database. c) The layers of safety within Section 6 of Attachment B1 discusses design and product choices, active/passive fire protection systems, physical protection, automatic control and detection measures and facility emergency response. Emergency management and the fire safety strategy in Section 7 provides the procedures for shutdown, inspection and testing, emergency procedures in case of fire/explosion/release of liquid or vapour, response considerations for surrounding areas and appropriate planning and training exercises. d) Table 10 within Attachment B1 identifies the hazardous materials on site. Further information is provided within Attachment B2 detailing the quantity of hazardous chemicals that are	Attachment B1 & Attachment B2

	facilities, starting at detection and isolation in modules and ending at emergency service intervention; d) the mass of each chemical species to be stored on site, including inside battery packs. The applicant is advised to compare the chemical composition of the proposed battery technology and the quantities against Schedule 15, Table 15.1 & 15.2 of Work health and Safety Regulation 2011 and the Planning Regulation 2016 to determine if the BESS would be considered a Hazardous Chemical Facility; e) the mass of each chemical species that would be transported aerially in the event of BESS combustion, venting, or malfunction; f) air quality modelling indicating the travel distance likely for soot and ash during combustion, including consideration of a range of typical wind directions and speeds; and g) development of a probabilistic deposition map illustrating the potential mass of each contaminant which could reach nearby sensitive receptors. <i>Reason - To demonstrate compliance with the High impact industry zone code of the Townsville City Plan.</i>	stored on site and compare it to the Schedule 15 threshold quantities of the Work Health and safety Regulation (Qld) 2011. e) Refer to Section 5.5 of Attachment B1 and Appendix A presents the full model results. f) Refer to Section 5.5 of Attachment B1 for results of likely distance that soot and ash will travel. Each scenario has been modelled under typical wind conditions (0 m/s, 2.5 m/s) and strong wind conditions (avg. site max = 5.0 m/s) based on historical and more recent measured site data. In most cases maximum dispersion was achieved under the strong wind conditions. A supplementary assessment investigated the BESS unit exhaust which was successful in mitigating the build-up of a flammable/explosive atmosphere within the unit. Refer Section 5 for full details and results. g) Probabilistic deposition maps have been prepared and included in Attachment B. Refer to Section 5.5 of Attachment B1, and also Sections 5.1-5.4 for a discussion of methodology approach, assumptions and model scenarios. Full results are provided in Appendix E of Attachment B1. The 1,170 BESS modules will utilise lithium-ion technology batteries and store hazardous materials to a capacity which is below the 10% Major Hazard Facility threshold. The facility is not expected to create a dangerous dose to the built environment or individual fatality risk level. Further analysis of the stored chemical compared to the industry thresholds has been assessed and is included as Appendix B2. As the analysis identified that no impact would occur outside of the site boundary, modelling at sensitive receptors has been conducted.	
IR3	Water Supply and Sewage Disposal The applicant is requested to demonstrate how water supply and sewage disposal is proposed to be provided to the development during both the construction and operational stages. <i>Reason - To ensure development is suitably serviced by water supply and sewage disposal.</i>	The following outlines the proposed provisions for water supply and sewage disposal for both the construction and operational phases of the development. Construction Phase: • Sewage disposal - all construction related sewage will be managed by a licensed third-party contractor and removed off-site to an approved treatment facility. • Potable water supply - potable water required will be trucked to site as needed by a licensed water carrier. • General water use - non-potable water for dust suppression and other general site activities will be sourced from the local connection point in association with the PDIA, or trucked in. • Fire water - temporary fire-fighting water supply during construction will be provided via on-site storage tanks, filled from local connection points. Upon completion of the permanent fire-fighting water tank (refer to Project Dimensions Extent 1 (page 1)), this will become the primary fire water source for the site. Operational Phase: • Sewage disposal - all sewage generated during operational phase of the project will be managed by a licensed third-party contractor and transported off-site to an approved treatment facility.	N/A

		• Potable water supply - potable water supply will be stored in appropriately sized tanks associated with Operations & Maintenance buildings, administrative and ablutions activities and filled via trucked in potable source, as well as rainwater harvesting where possible. If required, these tanks will be topped up by local connection point in associated with PDIA. • General water use - water for landscaping, cleaning, or operational needs will be sourced from the water management dam. • Fire Water Supply – a minimum of three 50,000L dedicated firewater tanks will provide emergency fire-fighting water during operation, fire tanks capacity to be managed during operations and filled as required from either a trucked in source or from the water management dam.	
IR4	Noise Impact Assessment The applicant is requested to provide a revised Noise Impact Assessment to include: a) The BESS containers are understood to expand and contract as they heat and cool which can lead to cracking noises. Review and assessment of noise levels associated with the expansion and contraction of containers is required; b) The predicted Day (LCeq,adj,11h)/Evening (LCeq,adj,4hr)/Night (LCeq,adj,9hr) noise levels for low frequency of the receptors R10, R11, R12, R76, R77, R78, R79, R80. c) A noise intrusive assessment undertaken of the receptors R11, R12, R76, R77, R78, R79 using the nighttime rating background level plus 5dB(A) as measured over a 15-minute period LAeq (15 minute). <i>Reason - To ensure the development does not cause an environmental nuisance to nearby sensitive receptors in accordance with section 440 Environmental Protection Act 1994 and to demonstrate compliance with Performance Outcome PO5 of the High impact industry zone code of the Townsville City Plan.</i>	The Noise Impact Assessment report has been amended to address the request for information concerning potential noise emissions from the development. A detailed technical response is provided in Attachment C, and summary is provided below. a) BESS units are typically designed with features that help mitigate thermal-related noises, such as cracking. These include: • Vibration and structural control measures, such as anti-vibration isolators and flexible connectors, to reduce structure-borne sound transmission. • Damping treatments, including constrained-layer damping materials applied to panels, to minimise resonance and absorb impact noise. • Rigid support framing to limit structural flexing during temperature changes. These design features are consistent with standard industry practice and help minimise the potential for cracking or other thermal-related noises to cause impacts at nearby receptors. Based on advice from the manufacturer, the revised BESS unit design does not exhibit cracking noises, consistent with the mitigation measures outlined above. The revised Noise Impact Assessment (Version 3.0, dated 10/11/2025) report has been updated with the latest BESS noise test data since the previous issue of the Noise Impact Assessment (Version 2.0, dated 28/08/2025). The revised noise test data is lower than previously assumed and operational noise was determined to not trigger low frequency or tonality annoying characteristics at any sensitive receptor location. b) Appendix E of the Noise Impact Assessment (Version 3.0, dated 10/11/2025) provides the low-frequency assessment in accordance with the NSW Noise Policy for Industry (NPfI). The assessment includes an initial screening that compares LCeq and LAeq to identify the potential for low-frequency annoyance. Where LCeq – LAeq exceeded 15 dB or more, the predicted low-frequency 1/3 octave noise levels were then compared against the threshold values for low-frequency noise (Table C2, NPfI). This low-frequency check is consistent with the approach adopted by the UK. c) A noise intrusive assessment is not appropriate, as the development is located within a high-impact industrial zone. By virtue of the rezoning of the LEIP to a High impact industrial region, it would be unreasonable to maintain the existing acoustic environment, and there is an	Attachment C

		expectation for the acoustic characteristic of the area to change. Instead, a cumulative impact assessment using the latest BESS technology has been completed to assess potential background creep, with results provided in Section 7.4. As recommended in the Noise Impact Assessment (Version 2.0, dated 28/08/2025), EMM advised updating the model to incorporate the relevant technology for the 8-hour BESS EnerQB Free-Cooling units. At the time of Version 2.0, Solquartz noted that detailed specifications for these units were not yet available. Updated data is now available and has been incorporated into the revised Noise Impact Assessment (Version 3.0, dated 10/11/2025). The reassessment of associated noise emissions using this accurate data is presented in Section 7.2 of Version 3.0.	
IR5	Roadworks The applicant is requested to provide documentation identifying the following: a) The access route for the proposed development from the Flinders Highway; and b) Typical road cross-sections for all new, realigned or upgraded public roads required to provide access to the development and to accommodate the vehicle movements anticipated to be generated by the development (including construction traffic). <i>Reason - To ensure an appropriate transport network is provided in accordance with relevant code/s and policy direction.</i> <i>TCC advice: Any works or significant change in traffic volumes at the Old Flinders Highway rail crossing may require the applicant to engage with and provide information to Queensland Rail (QR) to allow QR to perform an assessment of safety risk (ALCAM).</i>	a) The Traffic Access Route for the proposed development is provided within Attachment D1. All construction and operational traffic movements will utilise the Northern Site Access intersection point, Jones Road, No Name Road, and enter site via Bidwilli Road. b) The NQC Package 1 – BESS, Substation and Transmission line Traffic Impact Assessment has been completed on the assumption that the LEIP Northern Access road will be constructed and operational as per LEIP enabling infrastructure delivery schedule provided as to the Planning and Development team by the Program Manager of Infrastructure & Operations at TCC. The NQC development proposes all construction and operation vehicle movements are via Northern Access Road. It is understood that Internal LEIP Roads (No Name Road, Ghost Gum Road) will be complete in time to enable access to NQC entry point on Bidwilli Road.	Attachment D
IR6	Surface water The applicant is requested to provide amended documentation to address the following: Water resources assessment a) The submitted report states that “the stormwater system would be designed so that it may be isolated from the natural environment (ie no discharge) in the event of a spill, fire, or contamination event.” The applicant is requested to provide further details on how this is proposed to be achieved within the development. Flood Report	The Water Resource Assessment report has been amended to address the request for information. A detailed technical response is provided in Attachment E, and summary is provided below: a) Firefighting effluent will be retained on site under HIPAP 2 until such time that it is suitable for release into the environment (following treatment via a sediment pond) or trucked off site. b) Updated cross sections detailing the flood elevation levels against the existing and developed surface levels are provided in Section 5.4.1 of the Water resources assessment report (Attachment E). The substation pad and BESS pad require elevation to meet their flood immunity requirements of 0.5% annual exceedance probability (AEP) and 0.2% AEP, respectively. Figures 5.1–5.7 of Attachment E provide cross section elevations to show the flood immunity of the development. These figures confirm the appropriate flood immunity of both the Substation Pad and the BESS Pad structures. Updated cross sections detailing the	Attachment E

	b) Sections are requested to be added to Figure 5.1. The submitted version shows blank plots. c) Peak water surface elevation plots are requested to be included in Appendix A, along with spot 1% AEP levels reported at key locations within and around the development. d) The scale of the peak depth and velocity plots contained in Appendix A is requested to be modified (zoomed-in) to show enhanced detail within the development site. e) Confirmation is requested that the BESS containers, control room, diesel generator and auxiliary transformer will be provided with 1% AEP flood immunity. The submitted plans show these elements at ground level within and adjacent to a 1% AEP flood path. f) The 10% and 1% AEP afflux plots show 50-100mm of afflux within the State controlled road corridor to the east of the development site. The applicant is requested to confirm State acceptance of these impacts. <i>Reason - To ensure the development is appropriately designed in response to flood hazards and runoff behaviour.</i>	flood elevation levels against the existing and developed surface levels are provided in Section 5.4.1 of the Water Resources Assessment Report. c) Additional plots on the 1% AEP levels at key locations within and around the development have been provided within Section 5.4.2 of the Water Resources Assessment Report. This information is further analysed and presented in Attachment A Flood impact assessment. Peak water level plots for the 10%, 1% and 0.2% AEP events (both existing and proposed scenarios) provided in Attachment A of Attachment E (Figures A2.1-A2.8), showing both ground surface and water surface elevations. d) Attachment A of Attachment E has been updated providing figures detailing a zoomed extent of key development features. Figures A1.1-A1.12 have been updated. e) Current design is conceptual level only and is subject to detailed design. 1% AEP flood immunity of these buildings will be met as part of the detailed design phase. Refer Section 5.4.2 of Attachment E. f) Current concept design demonstrates impacts within rail corridor. However, these impacts will be mitigated during detailed design to achieve zero offsite impacts for events up to and including 1% AEP. This will include design updates to water storage basin, drainage design, water treatment train and pad footprint/elevations to achieve this. Flood modelling of the detailed design will be performed to quantify and confirm these outcomes.	
IR7	Concept Landscape Plans Landscaping is required provided to mitigate the visual impact of development and screen unsightly components and creates streetscapes which contribute positively to the city image, particularly along roads and land in another zone. The applicant is requested to provide a concept landscaping plan for consideration against the High Impact Industry Zone Code. <i>Reason - To ensure that the proposed development will be able to achieve the outcomes of the High Impact Industry Zone Code and other relevant landscaping outcomes from the Townsville City Plan.</i>	A concept landscaping plan to mitigate visual impact and enhance the streetscape as per the requirements of the applicable codes is provided as Attachment F. The landscaping plan has been prepared to demonstrate compliance with the High Impact Industry Zone Code, specifically performance outcomes PO4 and PO23. A 4m wide landscaped strip with dense planting is proposed along the southern and eastern boundaries of the premises. Location of the areas selected to include landscape screening, have been chosen to manage visual amenity for sensitive receptors east of the Flinders highway as well as for users of the Flinders highway and rail line. As the project is located within the Lansdown Eco-Industrial Precinct (LEIP), a high-impact industrial zone, landscaping conditions are requested to reflect the industrial context of the site and surrounds. Therefore, on-street planting is not deemed necessary. The site is approximately 600 meters from Flinders Highway and will be surrounded by local LEIP connecting roads and neighboured by other similar industrial uses within the precinct. It is proposed that some visual screening be achieved through landscaping along the northern perimeter of Four Mile Creek. A species palette for landscaping is proposed for adoption in the areas designated for planting as shown on the Concept Landscaping Plans (Attachment F), being the eastern and southern boundaries of the premises. The proposed species palette and planting density is per the following table:	Attachment F

Location & Purpose	Botanical Name	Common Name	Density
Trees for screening	<i>Acmena smithii</i>	Lilly Pilly	1 per 7m ²
	<i>Allocasuarina torulosa</i>	Forest She-Oak	
	<i>Melaleuca dealbata</i>	Paperbark	
	<i>Melaleuca linariifolia</i>	Paperbark	
	<i>Syzygium hemilamprum</i>	Broad Leaved Lilly Pilly	
	<i>Syzygium luehmannii</i>	Small Leaved Lilly Pilly	
	<i>Waterhousea floribunda</i>	Weeping Lilly Pilly	
Shrubs	<i>Abelmoschus moschatus</i>	Native Rosella	1 per 4m ²
	<i>Babingtonia virgata</i>	Twiggy Baeckea	
	<i>Banksia robur</i>	Swamp Banksia	
	<i>Breynia oblongifolia</i>	Coffee Bush	
	<i>Bursaria tenuifolia</i>	Mock Orange	
	<i>Dodonaea viscosa</i>	Hop Bush	
	<i>Eustrephus latifolius</i>	Wombat Berry	
	<i>Hibiscus divaricatus</i>	Native Hibiscus	
	<i>Indigofera pratensis</i>	Forest Indigo	
	<i>Leptospermum petersonii</i>	Tea Tree	
	<i>Leptospermum</i>	Tea Tree	
	<i>polygallifolium</i>	Honey Myrtle	
	<i>Melaleuca thymifolia</i>	Native Murraya	
	<i>Murraya ovatifolia</i>	Pink Phyllanthus	
	<i>Phyllanthus cuscutiflorus</i>	Wonga Vine	
	<i>Pandorea pandorana</i>		
Grasses, groundcovers and accent plants	<i>Cymbopogon ambiguus</i>	Lemon Scented Grass	4 per 1m ²
	<i>Cymbopogon refractus</i>	Barbed Wire Grass	
	<i>Dianella caerulea</i>	Flax Lily	
	<i>Ficinia nodosa</i>	Knobby Club Rush	
	<i>Indigofera pratensis</i>	Forest Indigo	

	<i>Lomandra lon gifolia</i> <i>Lomandra confertifolia</i> <i>Themeda triandra</i>	Matt Rush Lemon Scented Grass Kangaroo Grass	
--	---	--	--

Advice Note

Request Item 1	Infrastructure charges – First Principles Assessment Assessment Infrastructure charges are required to be paid by developers to cover trunk infrastructure costs that arise as a result of their development. Trunk infrastructure is the key network infrastructure that provides essential services to the Townsville area, including sewer, water supply, transport and parks. Infrastructure charges are for the cost of capital provision, and not used for maintenance or operational purposes. As determined by the Townsville City Council Infrastructure Charges Resolution 2025/26 Undefined land uses require a First Principles Assessment of applicable charges. To ensure timely issue of the Infrastructure Charges Notice in accordance with the Planning Act 2016, Council recommend the applicant complete and submit a First Principle Assessment report for acceptance with a response to the information request.	The applicant is currently negotiating PDIA, in the absence of this executed PDIA a first principles assessment has been completed as is provided as Attachment G.	Attachment G
----------------	---	--	--------------