

University of Western Sydney
Parramatta Campus

STEENSEN VARMING

Att. Thomas Klobucar

Indigenous Centre of Excellence

Sydney, 18th February, 2025
Ref. No. 237139-co-E02

Utility Services Response to Submissions

Michael Fearnley
Associate Director

Michael.fearnley@steensenvarming.com
+61 2 9967 2200

Dear Thomas,

Steensen Varming has provided Utility statement and services for the proposed Indigenous Centre of Excellence (ICoE) at Western Sydney University (WSU) (SSD-64916225). A State Significant Development Application (SSDA) was lodged on 16 August 2024 and placed on public exhibition which ended on 26 September 2024. During the exhibition period, a variety of submissions were lodged by government agencies.

In reference to these submissions, we have prepared a set of responses providing further information to address comments raised by Endeavour Energy dated 30 August 2024. They are addressed in the table below.

Submission Comment	Response
Endeavour Energy - The existing facility is supplied via high voltage customer substation no. 12555. As a high voltage customer the 'High Voltage Operational and Maintenance Protocol' between Endeavour Energy and the customer regarding the provision of high voltage supply to the site will specify a 'Load of Customers Installation' which is adequate for the then / Customer's current requirements. The Protocol generally also states the following: 'Should any further increase in loads be required, contact should be made with Endeavour Energy's Customer Network Solutions Branch, who will inform you of the requirements in this regard'. The Protocol also identifies where Endeavour Energy's responsibility terminates (normally at the pole or pillar on the road verge from which supply is taken) in respect of: - o ownership of high voltage equipment; - o switching operations; and - o maintenance of equipment.	A technical enquiry has been submitted to Endeavour Energy to advise the authority of the increased electrical load resulting from this development and for Endeavor Energy to advise if any augmentation to their network is required to facilitate the ICoE building. Endeavor Energy have responded (Technical Review Request Reply dated 21 June 2024) to advise that the University Parramatta Campus is supplied from 11kV feeder RD1251 from Rydalmere Zone Substation via HV switching station 27451 @11kV. Endeavour Energy have investigated and advised that there is no spare capacity remaining on this 11kV feeder RD1251 from Rydalmere Zone Substation via switching station 27451 at 11kV to cater for customer's increased load limit beyond 2.6MVA. Endeavour Energy system shows the University existing peak demand is 2.113MVA, based on this figure, the maximum additional load the University can connect would be approximately 487kVA, which will be insufficient for the maximum demand of the ICoE building, during peak load period on the Campus. Endeavour Energy investigated other options and found that load transfer to other feeders is not feasible. It is considered that the University will need to increase their total site load limit beyond 2.6MVA to accommodate the increased campus maximum demand requirements by incorporation of the ICoE building or alternatively the University may implement alternate strategies to reduce the existing campus electrical load through implementation of renewable energy sources such as photovoltaic systems or centralise battery energy storage system/s. The Contractor is to design, supply, install, test and commission a new 630A high voltage circuit breaker (same manufacturer as existing)

	complete with over current and earth fault protection relays to the existing Switching Station No: 1 to serve the ICoE building. The Contractor will design, supply and install required modifications to the existing Switching Station No:1 to accommodate the new high voltage circuit breaker.
Endeavour Energy - To ensure an adequate connection, the applicant will need to engage an Accredited Service Provider (ASP) of an appropriate level and class of accreditation to assess the electricity load and the proposed method of supply for the development.	The University has instructed the electrical services design to incorporate load shedding facility within the ICoE to limit the ICoE building electrical load via the BMS to remain within the 2.6MVA campus capacity limit as opposed to a submission of Application for Connection of Load to Endeavour Energy. Endeavour Energy have identified the need to submit an Application for Connection of Load to Endeavour Energy to identify required works to provide electricity supply to the site for the ICoE. Then an ASP 3 would be required to facilitate the design for an installation contractor.
Endeavour Energy - An extension or augmentation of the existing electricity distribution network will be required. Whilst there are distribution substations in the area which are likely to have some spare capacity, it is not unlimited and will likely not be sufficient to provide for the additional load from the proposed development. Other factors such as the size and rating / load on the conductors and voltage drop (which can affect the quality of supply particularly with long conductor runs) etc. need to be assessed. However the extent of any works required will not be determined until the final load assessment is completed.	Design of Endeavour Energy network augmentation would be subject to Endeavor Energy Connection Offer and ASP 3 approved design., if this option is directed by the University. The existing University site high voltage network will be modified and extended to accommodate the requirements of the ICoE building. The ICoE building will require the provision of a new pad mount substation.
Endeavour Energy - Endeavour Energy's network asset design policy is generally to progressively underground all new urban developments. All new cabling / reticulation infrastructure must be of an underground construction type. Where existing overhead construction is present on or in proximity of the site, it may require undergrounding as the development proceeds.	Design of Endeavour Energy network augmentation would be subject to Endeavor Energy Connection Offer and ASP 3 approved design., if this option is directed by the University.
Endeavour Energy - The Electrical Utility Statement prepared by Steensen Varming dated 8 May 2024 is in keeping with the foregoing. The Architectural Drawings do not appear to show provision for the 'new pad mount substation'.	Substation is shown on drawing DA 1-102 revision 1

Endeavour Energy - The electricity distribution network relies in part on the retention of appropriate building setbacks to the road frontages to allow for line route / network design options and to provide safety clearances to conductors. Particular regard needs to be had to secondary road frontages or where overhead power lines are located near side or rear boundaries where lesser building setbacks apply. The higher the voltage, the greater the safety clearance required. This is also in keeping with a policy of prudent avoidance.

The encroachment of building setbacks (including by roof structures or projections from external walls constructed with conductive materials) may transfer fault currents to the main building / dwelling. It can also result in construction works being required within the minimum safe approach distance and may require the application to Endeavour Energy for appropriate network outages eg. when erecting and dismantling scaffold, and may also be an issue for the ongoing maintenance of the building or structure.

Endeavour Energy's recommendation is that whenever reasonably possible buildings and structures be located and designed to avoid the need to work within the safe approach distances for ordinary persons eg. not having parts of the building normally accessible to persons in close proximity of the overhead power lines; the use of durable / low maintenance finishes.

Alternatively, in some instances the adoption of an underground solution may be warranted ie. particularly for low voltage which can be more readily (in shorter distances) and comparatively economically be undergrounded.

As a guide, Endeavour Energy's Mains Design Instruction MDI 0044 'Easements and Property Tenure Rights', Table 1 - 'Minimum easement widths', requires a minimum easement width of 9 metres for low voltage up to 22,000 volt / 22 kilovolt (kV) high voltage overhead power lines ie. 4.5 metres to both sides of the centreline of the poles / conductors. For higher voltages, the wider the required minimum easement width.

The EIS indicates 'Boundary Setbacks Northern: 2.83m' being to the Victoria Road frontage where there are low voltage overhead power lines.

The existing Endeavour Energy aerial cabling is outside of the site boundary. Contractor to maintain authority safety clearances.

SV do not have any details of the existing aerial cabling on the UWS side of Victoria Road.

SV only have the below information from Endeavour Energy which indicates the 11kV cabling is located on the opposite side of the road.



SV have undertaken a review on Google Earth and the aerial cabling between the power poles on the UWS side of Victoria Road adjacent the site appear to be either 230V or 415Volt aerial cabling, however, this would need to be confirmed by Endeavour Energy.

AS/NZS 3000 defines low voltage cabling as exceeding 120Vac but not exceeding 1,000 Vac, therefore, the 9m easement (cantered on aerial cabling) would still apply.

Endeavour Energy - The minimum required safety clearances and controls for buildings and structures (whether temporary or permanent) and working near overhead power lines must be maintained at all times. If there is any doubt whatsoever regarding the safety clearances to the overhead power lines, the applicant will need to have the safety clearances assessed by a suitably qualified electrical engineer / Accredited Service Provider (ASP).

Even if there is no issue with the safety clearances to the building or structure, consideration must be given to WorkCover (now SafeWork NSW) 'Work Near Overhead Power Lines Code of Practice 2006' eg. ordinary persons must maintain a minimum safe approach distance of 3.0 metres to all voltages up to and including 132,000 volts / 132 kilovolt (kV). It also includes the following requirements for work near low voltage overhead power / service lines.

Installation Contractor to prepare work method statement to maintain work safety clearances from aerial cabling in accordance with Endeavour Energy and AS/NZS3000 requirements.

Please refer to below snips of correspondence with Endeavour Energy

20-05-2024

RE: 237139 RE: ENLS191 - 100, 171 VICTORIA ROAD PARRAMATTA - RFI - Ali Siddiqui

AS Ali Siddiqui <ali.siddiqui@endeavourenergy.com.au>
To: Michael Fearnley
Cc: Manoj Matthew

General/All Employees (unrestricted)

This sender ali.siddiqui@endeavourenergy.com.au is from outside your organization.

You replied to this message on 21/06/2024 10:52 AM.

Reply Reply All Forward Mon 20/05/2024 2:02 PM

CAUTION: This email originated from outside the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Hello Michael,

We are still reviewing the application, could you please arrange the fees to be paid, it is issued via online portal.
After the fees is cleared in our system, we will then issue our formal response to you.

Ali Siddiqui | Customer Network Engineer
M 0457 139 971

Level 40-42, 8 Parramatta Square, 10 Darcy Street
Parramatta NSW 2150, Dharug Country

endeavourenergy.com.au | LinkedIn Facebook YouTube Twitter



Endeavour Energy respectfully acknowledges the Traditional Custodians on whose lands we live, work, and operate and their Elders past, present and emerging.

Endeavour Energy Technical Review Request Reply dated 21-06-2024



Endeavour Energy

ABN 11 247 365 823

T 133 718

Level 40-42, 8 Parramatta Square
10 Darcy Street
Parramatta NSW 2150
PO Box 811, Seven Hills NSW 1730

Technical Review Request Reply

21 June 2024

Endeavour Energy Ref: ENL5191

Customer Ref:

Michael Fearnley

Steensen Varming

Level 8

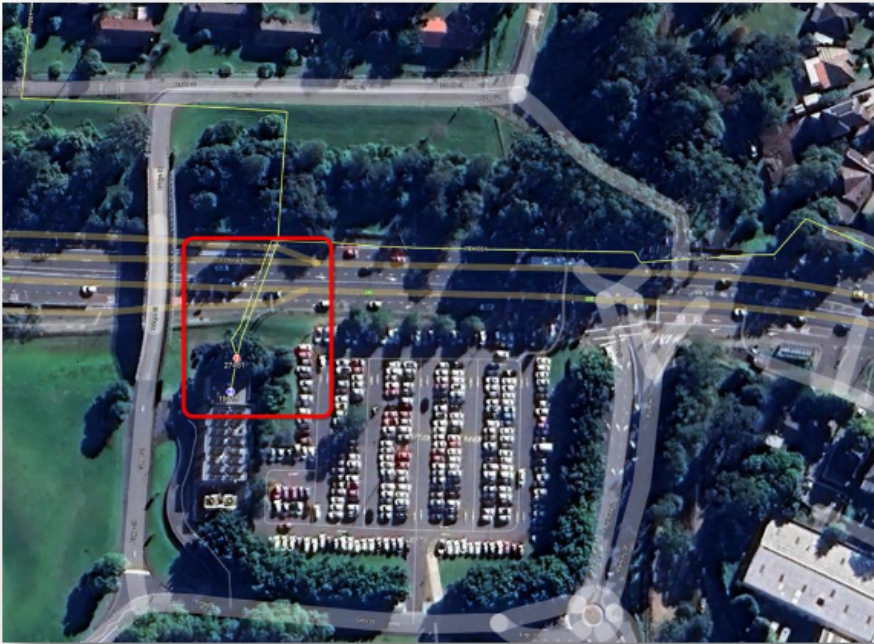
Sydney NSW 2000

**ENL5191 – TECHNICAL ENQUIRY | (LOT 100, DP 816829) 171 VICTORIA ROAD,
PARRAMATTA.**

Dear Michael,

Thank you for your supply enquiry regarding the proposed development (Construction of a new building Indigenous Centre of Excellence) at above address as shown below. This enquiry has been registered under our reference number – ENL5191. Please quote this number for all future correspondence.





Your enquiry wishes to seek information/advice from Endeavour Energy on following:

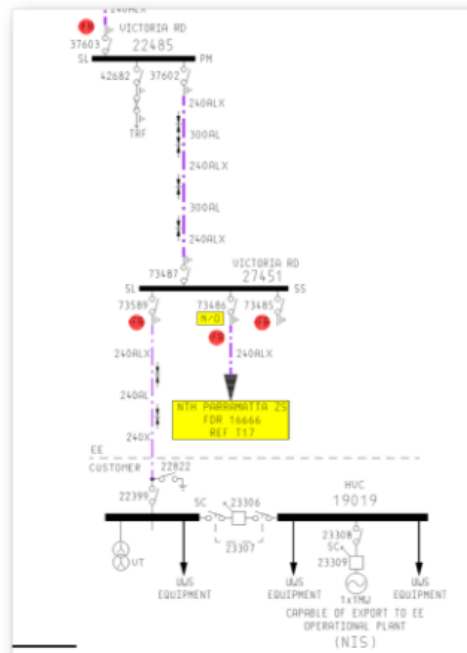
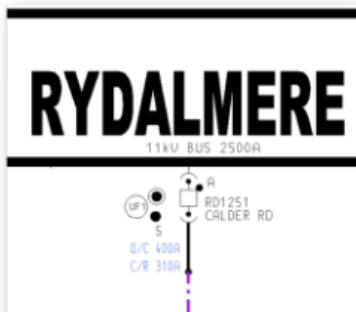
- Capacity (amperage) of the existing HV cables.
- Advice on existing maximum electrical load (amperage) on the existing HV cables.
- Does Endeavour Energy consider the new development will impact its existing assets.
- Advice from Endeavour Energy of next steps by ourselves to progress the electricity supply design.

Endeavour Energy network planning has reviewed your request and offer below advice:

Currently the site is getting supplied from 11kV feeder RD1251 from Rydalmere Zone Sub via HV switching station 27451 @11kV (this is a HVC site).

Upon investigation it has been found that there is no spare capacity left on this feeder RD1251 to cater for customer's increased load limit beyond 2.6MVA. Our system shows customer's current usage is 2.113MVA, based on this figure, the maximum additional load customer could connect would be 487kVA. Other options were investigated, and we found that load transfer to other feeders is not feasible.

If UWS needs to increase their total site load limit beyond 2.6MVA, then a new dedicated 11kV feeder from Rydalmere Zone Sub will be required to be established by customer.



Please note all works will be contestable and customer funded and constructed with the exception of reimbursement of any transformer required or spare ducts requested by Endeavour Energy.

If you wish to proceed with this project, the developer or their representative will need to submit an Application for Connection Of Load to Endeavour Energy which is available on the Endeavour Energy website.

Once the application is processed and a Connection Offer has been issued by Endeavour Energy, which will provide preliminary supply requirements, you will need to engage a level 3 Accredited Service Provider who will submit a formal Method of Supply.

A list of the Accredited Service Providers is available at the NSW Trade and Investment website or can be obtained via phone 13 77 88.

Please note this enquiry is only a preliminary assessment and does not guarantee supply availability or final conditions of supply.

Should you have any enquiries regarding your application please contact me.

Yours faithfully,

Ali Padidqui

Customer Network Engineer

M: 0457 139 971

Email: cwtech@endeavourenergy.com.au

5-08-2024

RE: 237139 RE: ENL5191 - 171 VICTORIA ROAD PARRAMATTA - Technical Enquiry Response - Ali Siddiqui

 Ali Siddiqui <ali.siddiqui@endeavourenergy.com.au>
To: Michael Fearnley
Cc: Manoj Matthew

General\All Employees (unrestricted)

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 Reply  Reply All  Forward  

Mon 5/08/2024 1:35 PM

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Hi Michael,

We limit the output of 11kV feeders to 4.5MVA per feeder, note your connection is on a shared feeder and that's the limitation because there are other shared loads connected on the feeder. If more power is required then a new dedicated feeder will need to be established to your site.

Ali Siddiqui | Customer Network Engineer
M 0457 139 971

Level 40-42, 8 Parramatta Square, 10 Darcy Street
Parramatta NSW 2150, Dharug Country

endeavourenergy.com.au |    



Endeavour Energy respectfully acknowledges the Traditional Custodians on whose lands we live, work, and operate and their Elders past, present and emerging.

From: Michael Fearnley <michael.fearnley@steensenvarming.com>
Sent: Monday, August 5, 2024 12:35 PM
To: Ali Siddiqui <ali.siddiqui@endeavourenergy.com.au>
Cc: Manoj Matthew <manoj.matthew@steensenvarming.com>
Subject: 237139 RE: ENL5191 - 171 VICTORIA ROAD PARRAMATTA - Technical Enquiry Response - Ali Siddiqui

Hi Ali,
We have forward Endeavour Energy advice contained within the letter and await their response.

In reviewing the letter, can you please confirm where the limitation lies..

The 2.6MVA load limit would relate to a HV amperage of approximately 137 Amps / phase at 11kV.

The existing HV cabling is a mixture of 240mm² Al which has a current rating of approx. 321A/ph and a 240mm² Cu which has a current rating of approx.: 365A/ph. – for 3 core cabling.

The existing circuit breaker protection appears to be a 400A circuit breaker set at 310A.

Kind Regards,

Michael Fearnley
Associate Director

18-09-2024

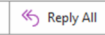
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To: Michael Fearnley
Cc: Manoj Matthew

General/All Employees (unrestricted)

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You replied to this message on 18/09/2024 9:53 AM.

 Reply  Reply All  Forward  
Wed 18/09/2024 9:19 AM

Hello Michael,

I will ask the question about battery to our planning team.

Regarding process and cost:

You will need to engage a level 3 ASP to design the new feeder, engage a level 1 ASP to construct it and then the capacity will be available, cost is unknown and will depend on amount of work and complexity.
Cost can be confirmed by your engaged level 1 only after a level 3 design is completed.

Ali Siddiqui | Customer Network Engineer

M 0457 139 971

Level 40-42, 8 Parramatta Square, 10 Darcy Street
Parramatta NSW 2150. Dharug Country

endeavourenergy.com.au |    



Endeavour Energy respectfully acknowledges the Traditional Custodians on whose lands we live, work, and operate and their Elders past, present and emerging.

From: Michael Fearnley <michael.fearnley@steensenvarming.com>

Sent: Tuesday, September 17, 2024 2:49 PM

To: Ali Siddiqui <ali.siddiqui@endeavourenergy.com.au>

Cc: Manoj Matthew <manoj.matthew@steensenvarming.com>

Subject: 237139 RE: ENL5191 - 171 VICTORIA ROAD PARRAMATTA - Technical Enquiry Response - Ali Siddiqui

CAUTION: External email. Be cautious with links and attachments.

Hi Ali,

Further to this project, we are investigating peak load shaving battery solution to be implemented to reduce peak load of the building.

Can you advise does Endeavour Energy have any requirements to be complied with if a battery energy storage system was implemented to support the new Indigenous Centre of Excellence.

Can you also advise what is the process and anticipated works and cost to increase the Endeavour Energy power supply to the University of Western Sydney.

We have advised the University of the existing HV supply limitation and requested if they are currently investigating either increasing the electrical capacity on the site or alternatively implementing energy reduction strategies across the campus to reduce the site load as seen by Endeavour Energy.

We are awaiting a response.

Kind Regards,

Michael Fearnley
Associate Director

Kind regards,

Michael Fearnley
Associate Director

Mechanical Engineering
Lighting Design
Sustainable Design
Electrical Engineering

Copenhagen
London
Sydney
Hong Kong
New York

STEENSEN VARMINING