

PADMOUNT SUBSTATION & SWITCHING STATION SITING REQUIREMENTS

THIS DOCUMENT IS TO BE APPLIED BY ALL EVOENERGY PERSONNEL AND EXTERNAL CONTRACTORS, DEVELOPERS AND CONSULTANTS WHO ARE ENGAGED IN THE DETERMINATION OF A SUITABLE SITE FOR PADMOUNT SUBSTATIONS AND/OR SWITCHING STATIONS CONNECTED TO THE EVOENERGY NETWORK.

This procedure outlines the principles to be observed in determining a suitable site for a padmount substation and switching station (commonly mentioned as 'station').

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1. SCOPE AND PURPOSE

The purpose of this document is to outline the principles and minimum requirements that must be considered in determining a suitable site for a station (i.e., padmount substation or switching station). This document and referenced documents may be applied by Evoenergy representatives and external parties.

This document applies to all 11kV stations that will be connected to the Evoenergy power distribution network. Non-standard apparatus required for bespoke sites (including the use of dry type transformers) should use the principles outlined in this document when proposing a location for the apparatus.

This document is only applied to stations that are installed completely outdoors. Any proposed installation inside a building footprint must comply to the Evoenergy chamber substation design manual.

This document includes the *Request for approval of padmount substation and/or switching station siting* and the *Checklist for padmount Substation & switching station Siting* as appendix A and B.

2. EVOENERGY MINIMUM REQUIREMENTS AND SITE CONSIDERATIONS

2.1 Introduction

The siting of stations must be proposed with consideration to:

- Allowing access for construction, operation, and maintenance of the station and the future replacement due to failure or augmentation.
- Providing sufficient entry for 11kV, earthing and low voltage cables to the station that are required at the time of installation and that may be reasonably required for future network needs such as testing and augmentation.
- The location of the customer switchboard is to comply with Evoenergy earthing requirements and separation clearances.
- Nearby natural waterways and other environmental considerations
- The location of other utility's equipment and crossings
- The location of any underground or partially buried conductive objects
- Nearby buildings, structures and property lines that are in existence or will likely be constructed in the future
- Nearby or proposed vegetation, including tree protection zones
- Traffic safety – avoid interfering with a driver's view near road intersections and to minimise the risk of vehicle impact

Evoenergy reserves the right to reject any proposed location of a station. The proposed site needs to be agreed upon by the lessee/land manager and approved by Evoenergy.

2.2 Environmental considerations

2.2.1 Hazardous locations

The stations should not be installed in or positioned where access is granted through a hazardous area as identified in AS/NZS 3000 (*Electrical Installations*) and the AS/NZS 60079 series.

Where this requirement is unable to be met the installation must satisfy the requirements and principles outlined in AS/NZS 3000 and the AS/NZS 60079 series. The specific proposed installation must be approved by Evoenergy. Any proposals for the installation of 11kV infrastructure in hazardous areas must be supported by documented evidence of sufficient design including a site-specific safety in design report.

2.2.2 Flooding

The station must be constructed above the one in one hundred (1:100) year flood level. Refer <https://www.actmapi.act.gov.au> for ACT flood map and 1:100-year flood levels. This requirement must be maintained for the immediate area surrounding the Evoenergy station to a distance of at least 1.5m. The plinth

of the padmount substation may breach the 1:100-year flood level in some circumstances where Evoenergy determines that there is no reasonable alternative for the location of the plinth.

Switching stations that are in reliance of a minimum volume of free space below switchgear to achieve arc containment compliance must have the entire culvert positioned above the one in one hundred (1:100) year flood level. The finished ground level must adequately slope away from the station to ensure that water is unable to pool.

2.2.3 Drainage and erosion control

The station must be sited with adequate drainage and erosion control to prevent water pooling and the soil being washed away around cable entries, culvert, and/or plinth. Depending on site conditions (i.e., arrangement of the slope relative to the retaining wall and trench) and quantity of water expected additional drainage (such as Weepholes) may be required to handle water movement through the additional conduits and trenches.

For additional details on erosion and sediment control, please refer to ACT Government/TCCS documents MITS 00C “Erosion & Sediment Control”.

2.2.4 Oil containment

Padmount substations purchased in accordance with the Evoenergy padmount substation technical specification incorporate oil bunding in the substation design. Where an oil leak has the potential to impact the environment, the applicant requiring the installation of the station should consider additional oil containment measures.

In the case of installing padmount substations in environmentally sensitive locations the use of dry transformers or those utilising oils with lower impact to the environment should be proposed.

2.2.5 Noise considerations

The applicant proposing the installation of the station is liable for the effects of any noise complaints. Complaints maybe instigated by the adjoining land occupants or occupants sharing the leased land to which the station is constructed. Padmount substations purchased in accordance with the Evoenergy technical specification and AS 60076.10 have the sound power levels tabled below:

TABLE 1. PADMOUNT SUBSTATION NOISE LEVELS (300MM AWAY FROM TRANSFORMER)

PADMOUNT SUBSTATION					
KVA	315	500	750	1000	1500
SOUND (dBA)	56	56	58	58	61

Should any legal proceedings or noise control orders be issued, the applicant proposing the installation of the required station or current lessee is solely liable. Noise mitigation and reduction methods employed previously include the erection of baffle walls and should be considered at the initial design stage in case such issues are foreseen. The mitigation methods employed to resolve noise complaints must not make the installation non-compliant with this document (i.e., limiting access or ventilation to the station).

2.2.6 Electromagnetic fields (emf)

Power cables, transformers and other current carrying equipment in a station are typical sources of electromagnetic fields.

Evoenergy is not responsible for the effects of EMF to susceptible equipment or any claims on ill effects to human health due to any installation.

The applicant must ensure that the station is suitably positioned to mitigate and manage the effects of EMF.

Should existing levels of EMF be unacceptable to the customer or lessee for any reason, all measures taken to mitigate the effects (such as shielding) will need to be carried out by the customer or lessee without any

cost to Evoenergy. Any mitigation employed must not impact on the access, ventilation, and minimum separation requirements. Typically, the stations must not be located under the overhead high voltage lines as well as within the transmission line reservations.

For information regarding health effects of electricity including electric and magnetic fields consult the Australian Government ARPANSA portal (<https://www.arpansa.gov.au/>).

2.2.7 Specific considerations

The site must be assessed for cultural sensitivity, significant trees, threatened species of flora and fauna, contaminated sites and any planning or development constraints which may require additional approval or engagement with Regulators.

Also, refer to [Trees on private land – City Services \(act.gov.au\)](#) and [Trees on public land – City Services \(act.gov.au\)](#) for more information on tree protection zones prior to proposing the substation or under boring/conduit installations under the tree canopy.

Typically, a Tree Protection Zone for a protected tree is:

- the area under the canopy of the tree
- the 2m wide area surrounding the vertical projection of the canopy; and
- the 4m wide area surrounding the trunk as measured at 1m above natural ground level

2.3 Protection from vehicles

Stations shall be located to limit the likelihood of contact with vehicles in accordance with the Evoenergy separation & cover (Drawing 3832-018) as well as clearance requirements for planting & structures (Drawing 4923-01). Typically maintaining a minimum 1500mm separation between the station and driveways is considered sufficient. Where it is not possible to maintain 1500mm clearance, the installation of non-conductive bollards, railings, walls or other mechanical protective devices maybe considered suitable. Where such devices are proposed the installation must be supported with a detailed risk assessment.

The installation of any devices/structures must not inhibit the ability to open doors of or limit the ventilation to the substation/switching station. Any proposed protective devices must be considered when assessing earthing compliance (in particular – voltage transfer and touch hazards).

2.4 Access and egress

2.4.1 General

The station should be at ground level to allow easy access for heavy vehicles. Evoenergy personnel must have unhindered access to the substation site at all times. Any deviation from the standard requirements must be approved by Evoenergy. However, the station must not be located on elevated building roofs, in chambers or in covered parking areas or garages, similarly, must not be in building alcoves, or under roofed or partly roofed area.

Permanent all-weather access is required. The access route must not pass-through security areas where guard dogs are kept. All gates providing access to the site must be provided with an Evoenergy lock. This requirement may be met through the installation of a locking bar on a chain with the provision for an Evoenergy lock and a customer lock to be connected in series. Evoenergy may allow substation/switching station within restricted areas where unhindered 24/7 access to Evoenergy personnel and vehicles is managed by on site security guards, however, approval must be sought from Evoenergy for this access arrangement.

2.4.2 Requirement for easement

An easement is required where a substation or switching station is installed on one block and can provide future electricity supply to a customer on another block or where access is required over an adjoining section of leased land. An easement gives public visibility over the location of Evoenergy assets, prevents landholders from engaging in practices which can affect the safe operation of the network and provides 'right of way' over a portion of land that allows Evoenergy to construct and maintain above and below ground assets.

2.4.3 Vehicle and plant access

Adequate vehicle and plant access must be provided to the proposed site of the station. The access must be suitable for cranes and heavy vehicles required for the delivery, placement and future replacement of the Evoenergy station.

A minimum 4 metres wide access way must be provided. The access way must be suitable for heavy vehicles with a gross vehicle mass of 33 tonnes. There must be no overhead obstructions to a height of 4.5 metres along the access way route and minimum of 10 metre head height available for crane movement, loading and unloading of stations at the site (including the plinth and area adjacent to the plinth). The level of the loading area immediately adjacent to the substation shall be at the same level as the substation site.

Building or parts of Buildings are not permitted within 1.5 metres horizontally and 10 metres vertically from ground level for the proposed station. In case of padmount substation, the horizontal clearance must be from the earthing grading ring.

Provision must be provided within proximity of the site that allows a crane adequate space to install and if required replace the station in the future. This area must be noted on the proposed plans and be maintained in the future as long as the station is in service. The ground surface where the crane will be positioned must be able to support point loads of up to 25 tonnes.

2.4.4 Provision for escape

The station must meet the requirements listed in the National Construction Code and must be maintained. The area surrounding the station must ensure those attending the site are able to escape the area efficiently due to any emergency without delay/hesitation.

The requirements identified under this section consider the installation of the station in an outside area and within proximity to an open space. Where the station is installed in an area that is contained or surrounded by buildings, structures or is fenced a minimum two exits must be provided. The required vehicle access maybe considered one exit.

Pedestrian exits or access ways must maintain a minimum of 1m clear width when the gate or door is open. The area to where the person will escape must be considered an *open space* in accordance with the National Construction Code Volume 2. Additionally, the escape route should take into consideration the open doors of the stations and provide adequate clearances.

2.4.5 Provision for access

Access provisions must result in unhindered access 24 hours a day, 365 days a year. Access must not depend on the customer, owner or site manager being present to allow access to Evoenergy representatives. Under extenuating circumstances this requirement maybe waived with adequate reason and where site access maybe facilitated through an onsite manager at all times (i.e., Access to Australian Government Defense sites).

Adequate parking must be maintained in the immediate area for Evoenergy representatives to attend site as required.

Signs should be erected stating "*No Parking, 24-hour Access Required*" to pedestrian and vehicular access ways where people are likely to park vehicles or block access (e.g., storage of material, garbage bins etc.).

2.5 Spatial requirements

2.5.1 Minimum separation requirements

The station requires a minimum 1500 mm clearance to any object to allow for the opening of doors, the safe operation and maintenance of equipment. However, considering the earthing system installations, typically, minimum 14.2m x 6.2m area is required for single padmount substation siting. However, the area for station siting may increase based on the earthing assessment and other utility assets within the siting area.

For twin padmount substation installations, where substations are proposed side by side, the separation between the substation plinths must be minimum of 4770mm center to center/on center spacing. However, where the substations are proposed in linear arrangement, the separation between the substation plinths must be minimum of 6850mm center to center/on center spacing. These twin padmount substation separations must be reviewed and confirmed with Evoenergy project engineer.

Where a padmount substation with deep earth electrode arrangement is specified by the Evoenergy Engineer, a minimum separation distance of 1,200mm must be achieved between any part of the deep electrodes and compliant structures.

Any building or structure within 7.5m of the proposed substation must be assessed for adequate fire rating/s to relevant Australian Standards and Building Codes.

Where suitable space for deep electrode earthing cannot be provided, the Developer shall arrange for the design & construction of a remote earth mat (preferably under building footprint) to comply with Evoenergy' s specified minimum earth mat resistance requirement.

Tabled below are the current standard padmount substation dimensions to be considered when applying the requirements of this clause and the referenced documents in section 4. The dimensions for switching stations are to be confirmed with Evoenergy project engineer.

TABLE 2. PADMOUNT SUBSTATION DATA

PADMOUNT SUBSTATION				
KVA	500# OLTC/NON- OLTC*	750# OLTC/NON-OLTC*	1000	1500
LENGTH (mm)	3850	3850	3850	3850
WIDTH (mm)	1770	1770	1770	1770
HEIGHT (mm)	1977	1977	1977	1977
MASS (kg)	4750	5700	6100	7600
OIL QUANTITY (litres)#	684	775	1005	1440
* ON-LOAD TAP CHANGER (OLTC)				
# REFER TO CLAUSE 2.9.2				

2.6 Installation requirements

2.6.1 Footing / foundation requirements

All Evoenergy stations installed in reference to this document must be constructed to ensure the structural stability of the installation. These stations must be installed upon compliant foundations. The installation or replacement of the station must not adversely affect the foundations or stability of adjacent buildings or structures.

Evoenergy relies on the information provided by the proposing party to assess compliance of the foundations. The use of loose fill soil beneath the foundations is not acceptable.

2.6.1.1 Typical installations

Typically, the padmount substation will be installed on to the Evoenergy approved plinth. The plinth must be installed on a ground level surface (with no basement) that has sufficient bearing capacity for the weight of apparatus being installed. Evoenergy will not accept the substation on suspended slab.

The proposing party is responsible for ensuring the adequacy of the proposed design. The proposal must be lodged with detailed drawings of the installation, a safety in design report and safe work method statement/s (if req'd).

The proposed design must address each of the considerations listed below:

- The structural integrity of the design
- Limiting the impact to adjoining or structures to which the station is built upon
- Be sufficient for the most burdensome standard station of that type (for padmount substations a 1500kVA substation and/or for 4-Way switching station). This will allow for future network /station augmentation requirements should load increases occur.
- Allowance for high voltage, low voltage and telecommunications cable entry to each switch or device available in the apparatus
- Cable protection for all incoming and outgoing Evoenergy Network cables
- Compliance with step and touch potential limits under fault conditions
- The design and installation of earthing systems
- Oil containment
- Fire protection to the Evoenergy station
- Fire protection of adjacent structures in the event the Evoenergy station instigates a fire
- The ability to construct (install), replace and maintain the station
- Adequate drainage and erosion control
- Access to the station in accordance with the requirements outline within this document

2.7 Station earthing requirements

An effective earthing system is required to reduce electrical hazards in the event of station supply system faults to earth. The preferred option for station earthing is a Common Multiple Earth Neutral (CMEN) arrangement, provided the required conditions can be met. Conditions and requirements for installing a CMEN system are available in Evoenergy document "Distribution Earthing Design Manual PO07127". If the conditions for installing a CMEN system cannot be met, two separate earthing systems for HV & LV shall be provided.

Where a Station Earth Grading ring is specified by Evoenergy it must be 1000mm away from the face of the station shell unless advised otherwise. Separation and clearance values from earthing conductor, grading ring and electrode vary depending on the soil resistivity, site conditions and other hazards.

Earthing must be designed, installed, and tested prior to the area being restored in accordance with the "Distribution Earthing Design Manual PO07127". Based on the station earthing system, there are additional restrictions on buried or partially buried conductive objects such as children's play equipment, swimming pools, metal fencing or metal clad buildings near the stations.

For further information on site requirement refer to Evoenergy Drawings listed in the referenced documents table.

For all sites, padmount substation and switching station siting request & checklist as per Appendix "A" & "B" must be completed and approved in accordance with this document and the National Construction Code of Australia.

2.8 Consumer's mains Cables

The design should place the station close to the customer's switchboard or connection point. This will avoid excessive voltage drop thereby minimising the size of consumer's mains and facilitate satisfactory performance of electrical protection devices (fuses, circuit breakers) for electrical faults.

For further information on consumer's mains refer to:

- PO07173 – Evoenergy Service and Installation Rules
- AS/NZS 3000 "Electrical Installations"
- Appendix B of "ENA DOC 014 National Low Voltage Electricity Network Electrical Protection Guideline".

2.8.1 Installation of consumer mains cables – typical arrangement

Typically, the contractor engaged by the proposing party will supply and install appropriately sized consumer mains cable/s (must be either soft drawn or flexible type) to the substation and/or switching station (that is installed on the same block of land that is to be serviced). Provide suitable terminal lugs for termination of consumer mains cables by Evoenergy at the connection point.

Evoenergy will be responsible for terminating the consumer mains cables to the high/low voltage switchboard in the substation or outgoing circuit in switching station (depending upon the contractor requirement).

2.8.2 Installation of consumer mains cables – alternate arrangement

- Where the installation of consumer mains is proposed for the connection from a station to a customer on adjacent block, consumer mains are not permitted, and the electrical supply must be established by installing service mains and must be supplied and installed by Evoenergy. However, Evoenergy may allow installation of consumer mains to the station if the station abuts the block. In case of installation of Evoenergy service mains, the service mains must be installed within an approved electricity easement. An easement will be required on leased land for the Evoenergy service mains cables. Evoenergy will install and connect the service mains to a compliant point of entry (POE) cubicle. Service cables cannot terminate onto a main switchboard (MSB).
- Consumer mains shall not be installed within Evoenergy easement without approval. Consumer mains installed in high density (HD) electrical conduits may cross Evoenergy easement at 90 degrees on the condition that the consumer mains are installed underneath Evoenergy stations at a depth of 500mm with conduit/cable marker tape installed at a minimum of 200mm above the consumer mains.

2.9 Fire mitigation

Evoenergy stations must be considered a fire source when specifying the location of the station. The placement of the station must consider the separation of nearby structures. Consideration must be given to structures on the burdened land and adjacent parcel of land.

2.9.1 Compliance with the national construction code

The proposed location of the electrical station must not place existing or proposed adjacent structures in a non-compliant state to the relevant national construction code (NCC). The electrical station must be considered a fire source feature. External surfaces to the nearby buildings must have appropriate fire resistance levels in place in consideration to the placement of the station and the requirements identified in the NCC. Considerations include the building classification, usage, and type of construction. The proposing party is responsible for ensuring compliance to NCC in relation to the location of the station.

Evoenergy is in reliance of the information and noted compliance provided by the proposing party in relation to the compliance to the NCC requirements.

2.9.2 Compliance to AS2067

In addition to complying with the NCC, the station locations must comply with the requirements outlined in AS2067 (*Substations and high voltage installations*).

For the purposes of compliance to AS2067 all transformers that are 1kV or greater are considered to have an oil liquid volume greater than 1000L. This allows enough redundancy for the station to be upgraded whilst maintaining compliance to AS2067 requirements.

2.10 Ventilation requirements

2.10.1 Proximity to building vents and openings

Stations must not be positioned within the relevant distance to any building opening or ventilation provision in accordance with the NCC. Station must be located greater than 6 metres to any building opening, air intake or exhaust opening.

2.10.2 Adequate ventilation for station

Stations must maintain the required minimum spatial distances outlined in this document and those referenced to ensure the station does not overheat. The station cubicle has openings in the enclosure to allow air movement these must not be blocked for any purpose or duration.

3. RESPONSIBILITY/AUTHORITY

This section details the responsibilities of stakeholders in reference to amending, referencing, and applying this document.

Evoenergy Assets Standards are responsible for the approval of any amendments to this Standard.

Project/Design Officers are responsible for implementation of this Standard.

Proposing parties including Customers/Developers/ Architects/ Building and Electrical Consultants/Contractors are responsible for compliance with this Standard. Evoenergy is in reliance to the provided information from these parties.

4. REFERENCES AND DEFINITIONS

EVOENERGY DOCUMENTS	
Document number	Document title
PO07201	Chamber Type Substation Design and Construction Standard
PO07452	Technical Specification - Pad Mounted substations
PO07127	Distribution Earthing Design and Construction Manual
PO07173	Evoenergy Distribution Service and Installation Rules
EVOENERGY DRAWINGS	
Document number	Document title
4923-01	Planting & Structure Clearances
3832-018	Separation & Cover Requirements
D303-0002	Switching Station
D303-0004	Switching Station Foundation
D303-0005	Switching Station Earthing
D303-0006	Switching Station Earthing with Deep Earth Electrode
D303-0007	500-1500kVA Padmount Substation
D303-0009	Separate Earthing HV & LV, Padmount Substation
D303-0010	500-1500kVA Padmount Substation Foundation
D303-0011	CMEN Earthing with Electrodes, Padmount Substation
D303-0012	CMEN Earthing with Grid, Padmount Substation

D303-0019	500-1500kVA Twin Padmount 3m – 10m Separation Substation Foundation
D303-0020	Separate Earthing HV & LV, Twin Padmount 3m – 10m Separation Sub
D303-0021	CMEN Earthing with Electrodes HV & LV, Twin Padmount 3m – 10m Separation Substation
D303-0022	CMEN Earthing with Grid, Twin Padmount 3m -10m Separation Substation
D303-0023	500-1500kVA Substation Foundation Universal H Plinth
D303-0026	500-1500kVA Twin Padmount 3m – 10m Separation Substation

AUSTRALIAN STANDARDS

Document number	Document title
AS 2067	Substations and High Voltage Installations Exceeding 1 KV A.C.
AS/NZS 3000	Electrical Installations
AS 60079 series	Electrical Equipment for Explosive Atmospheres-Selection, Installation and Maintenance
AS 60076.10	Power transformer, Part 10: Determination of sound levels
AS/NZS 3835.2	Earth Potential Rise – “Protection of Telecommunications Network Users, Personnel and Plant”.
AS 2419.1	Fire Hydrant Installations – Part 1 System Design, Installation and Commissioning
AS/NZS 2430	Classification of Hazardous Areas
AS 1940	The Storage and Handling of Flammable and Combustible Liquids

OTHER DOCUMENTS

Document owner	Document title
Safe Work Australia	Model Code of Practice: Safe design of structures
National Construction Code	National Construction Code Volume One
National Construction Code	National Construction Code Volume two
Transport Canberra and City Services	MITS 00C “Erosion & Sediment Control”
ENA Doc 014-2006	National Low Voltage Electricity Network Electrical Protection Guideline

DEFINITIONS

Word	Meaning
Consumer mains	Conductors/cables between the network boundary and the main switchboard
MEN (Multiple Earthed Neutral)	A system of earthing in which the parts of an installation are connected to the general mass of earth and, in addition, are connected within the installation to the neutral of the supply system.
POE (Point of Entry)	The point at which the consumers’ mains or the underground service cable enters a building or structure.
Station	Padmount Substation or Switching Station

Safety in Design Report	A report resulting from a hazard identification and risk assessment process in the design process. The report should outline the methods and consideration that eliminate or minimize risks of injury throughout the lifecycle of a product (design, procurement, construction, operation, maintenance, decommissioning/removal and disposal activities).
Open Space	A space that provides safe, unobstructed access and egress for persons/plant and equipment, is open to the sky and connected directly with a public road

VERSION CONTROL

VERSION	DETAILS	APPROVED
1.0	Initial document	Anant Singh; Wayne Cleland; Brama Bramanathan; 30 Dec 10
2.0	Formatting of the document	J Atanasievska; Wahid Ibrahim; 12 Oct 15
3.0	Document updated for Rebranding to 'Evoenergy'	C Desai; Wahid Ibrahim; 16 Jan 18
4.0	Major update; Switching station included;	B. North; N. Azizi; W. Cleland; 23/07/20
5.0	Section 2.4.3 amended	N. Azizi; 18/10/2021
6.0	Various minor amendments and updates	K. Vedanti; N. Azizi; 10/05/2023
6.1	Clause 2.6.1.2 removed and 2.6.1.1 amended	N. Azizi; 03/01/2024

DOCUMENT CONTROL

DOCUMENT OWNER	DOCUMENT CUSTODIAN	PUBLISH DATE	REVIEW DATE
Group Manager Strategy and Operations	Principle Engineer Standards and Specifications	08/01/2024	08/01/2026

APPENDIX – A: REQUEST FOR APPROVAL OF PADMOUNT SUBSTATION AND/OR SWITCHING STATION SITING

Request for Approval (to be completed by Customer or Customer’s Representative)

Development Details	
Project Reference	
Address	
Block	
Section	
Suburb	

LODGE WITH EVOENERGY		RETURN TO: (Customer Detail)	
Attention		Attention	
Phone		Phone	
Email		Email	
Date		Date	

The Request for Approval of Padmount Substation and/or Switching Station Siting must be lodged along with below listed drawings and documents -

S NO.	DRAWING NUMBER	DRAWINGS/DOCUMENTS *	REVISION
1		ARCHITECTURAL SITE PLAN SHOWING PROPOSED STATION, UNDERGROUND, ABOVE GROUND UTILITY & SERVICES ASSETS AND OTHER METALIC ASSETS WITHIN 50M OF PROPOSED STATION SITE	
2		ARCHTECTURAL PLANS FOR BASEMENTS, GROUND AND ABOVE GROUND LEVELS	
3		ENVIRONMENTAL ASSESSMENT REPORT AND SITE CONDITIONAL REPORT	
4		GEOTECHNICAL AND SOIL RESISTIVITY REPORT – SOIL PROFILE PREFERABLY TO 20M DEPTH AND 30M WIDTH	
5		COMPLETED SITING CHECKLIST	
6		ELECTRICAL MAXIMUM DEMAND CALCULATIONS AS PER AS/NZS 3000:2018	
7		MAIN SWITCHBOARD SINGLE LINE DIAGRAM SHOWING DETAILS OF CONSUMER MAINS, EMBEDDED GENERATION/PV SOLAR SYSTEM CONNECTION	
Prepared by (Architect / Design Consultant):			
Phone:		Email:	

This request is to be lodged by the customer/developer or their design consultant as early as possible in the design process. The design consultant is requested to have ensured compliance with the listed documents and must submit Appendix – B to establish the suitability of the site for the station. Please discuss any concerns with Evoenergy before lodging.

EVOENERGY DOCUMENT	DOCUMENT CATEGORY	DOCUMENT TITLE
PO07373	Standard	Padmount substation and switching station guide
4923-01	Drawing	Planting & Structure Clearances
3832-018	Drawing	Separation & Cover Requirements
D303-0002	Drawing	Switching Station
D303-0004	Drawing	Switching Station Foundation
D303-0005	Drawing	Switching Station Earthing
D303-0007	Drawing	500-1500 kVA Padmount Substation
D303-0009	Drawing	Separate Earthing HV & L Padmount Substation
D303-0010	Drawing	500-1500 kVA Padmount Substation Foundation
D303-0011	Drawing	CMEN Earthing with Electrodes, Padmount Substation
D303-0012	Drawing	CMEN Earthing with Grid, Padmount Substation
D303-0019	Drawing	500-1500 kVA Twin Pad 3m – 10m Separation Substation Foundation
D303-0020	Drawing	Separate Earthing, 500-1500 kVA Twin Pad 3m – 10m Separation Sub
D303-0021	Drawing	CMEN Earthing, 500-1500 kVA Twin Pad 3m – 10m Separation Sub
D303-0022	Drawing	CMEN Earthing with Grid, 500-1500 kVA Twin Pad 3m - 10m Separation Sub
D303-0023	Drawing	500-1500kVA Padmount Substation Foundation Universal “H” Plinth
D303-0026	Drawing	500-1500kVA Twin Padmount 3- 10m Separation Substation

These documents are available on [Evoenergy Website](#) under key documents.

By signing this document the Developer/ Architect/ Design Consultant understands that:

1. Where a twin padmount substation arrangement is proposed, Evoenergy must be consulted prior to approval.
2. Any location nominated during the course of preliminary discussions with Evoenergy will be considered as notional until such time as a firm position is provided. A formal siting approval will not be provided without the provision of a dimensioned plan and elevation drawings showing the station including earthing arrangement, clearance with adjacent structures, fences, access ways, ground levels, contours, hydraulic and other utility services.
3. If no other utility services are detailed within the designated station area, it will be assumed by Evoenergy that no such services will infringe on the designated clearances and that no services /structures will subsequently be placed to conflict with these requirements.
4. A re-submission of this document will be required if Environment, Planning and Sustainable Development Directorate – ACT Government deem the proposed position unsatisfactory during the Development/Building Approval process.
5. This request will be reviewed and approved by Evoenergy when satisfied that the proposal meets the documented requirements.
6. Some conditions may be placed on the approval. These conditions will be required to be met by the developer before the station can be installed on the site or energised.

7. Evoenergy must be consulted, should the use of an earth mat be required for this development.
8. The undersigned hereby consents and agrees that the station siting complies with National Construction Code (NCC) and AS 2067 requirements. Evoenergy relies on the information provided and noted compliance provided by the proposing party.

Request submitted by Customer or their Representative			
Signature & Date			
Contact Details		Company	
Phone		Email	

Review and Approval (to be completed by Evoenergy)

The station site as detailed in the above drawing is approved subject to the following conditions:

CONDITION	DETAILS
1	Copy of approved development/building application from Environment, Planning and Sustainable Development Directorate – ACT Government
2	
3	
4	

Request approved on behalf of Evoenergy by			
Signature & Date			
Contact Details			
Phone		Email	

APPENDIX – B: CHECKLIST FOR STATION SITING

Customer/customer’s representative must complete the table below -

CRITERIA	CRITERIA MET YES/NO	COMMENT BY CUSTOMER/CUSTOMER’S REPRESENTATIVE (HOW & WHY)	EVOENERGY RESPONSE (ACCEPTED / NOT ACCEPTED)
Note – Refer to Section 2.2 prior to answering for below Criteria			
Not in a Hazardous Area as per AS/NZS 3000 and AS/NZS 60079			
Above 100-year flood level			
Offset from a water course and where water does not pool			
No drainage assets within easement/footprint of station (includes earthing system)			
Adequate Drainage and Erosion control provision considered			
Located to minimise/avoid possibility of noise complaints			
Located to minimise disturbance from or exposure to electromagnetic fields			

CRITERIA	CRITERIA MET YES/NO	COMMENT BY CUSTOMER/CUSTOMER'S REPRESENTATIVE (HOW & WHY)	EVOENERGY RESPONSE (ACCEPTED / NOT ACCEPTED)
Note – Refer to Section 2.3 and 2.4 prior to answering for below Criteria			
Station at ground level			
24 hr Access for Installation, Operation and Maintenance			
If behind fence/wall - suitable locking & access approved			
24 hr heavy vehicle access to immediate vicinity of site			
Adequate head room for access route for heavy vehicle and above installation site			
Two escape routes clear of site, not fouled by vegetation or obstructions			
Access for HV and LV cables via trench/conduit			
Clear of obstructions (e.g., rubbish hoppers, vehicles, building materials)			
Parking signs, bollards, Armco rails and raised kerbs must not restrict access and			

CRITERIA	CRITERIA MET YES/NO	COMMENT BY CUSTOMER/CUSTOMER'S REPRESENTATIVE (HOW & WHY)	EVOENERGY RESPONSE (ACCEPTED / NOT ACCEPTED)
operation of equipment			
Does not obscure vision of vehicles on traffic routes & intersections			
Station must not be located in vehicular impact zones			
Is an easement required for network cables or station?			
If on sloping ground, a retaining wall and/or safety rail must be provided. Is this addressed?			
Note – Refer to Section 2.5 prior to answering for below Criteria			
Minimum Clearance to above ground structures is achieved			
Could load growth warrant a second station in the future requiring larger clear area			
Location is clear of other utility services			

CRITERIA	CRITERIA MET YES/NO	COMMENT BY CUSTOMER/CUSTOMER'S REPRESENTATIVE (HOW & WHY)	EVOENERGY RESPONSE (ACCEPTED / NOT ACCEPTED)
Note – Refer to Section 2.6 for below Criteria			
Siting complies with soil compaction requirements			
Typical installation			
Note – Refer to Section 2.7 for below Criteria			
Site is not in or within 100m of Special Locations (i.e., water recreation area, school grounds, childcare centres, playgrounds etc.)			
Proximity requirement to conductive cladding, fences, or structures is met			
Is a standard separate earthing electrode system able to be accommodated within the site			
Is an earth mat able to be accommodated			

CRITERIA	CRITERIA MET YES/NO	COMMENT BY CUSTOMER/CUSTOMER'S REPRESENTATIVE (HOW & WHY)	EVOENERGY RESPONSE (ACCEPTED / NOT ACCEPTED)
Note – Refer to Section 2.8 prior to answering for below Criteria			
Consumer mains meet AS/NZS 3000 & Evoenergy Service & Installation Rules requirements			
Note – Refer to Section 2.9 and 2.10 prior to answering for below Criteria			
Not in the vicinity of fire exit doors or building air intake or exhaust openings			
Buildings or adjacent buildings have adequate fire rating			
Buildings or adjacent buildings do not have doors opening into the station footprint/easement			

