From: Yohan Premaratna
To: DPE PS PGS Coordination Mailbox
Subject: FW: NSW Planning & Environment State Significant Development SSD 9368 RE Alex Avenue Public School, Farmland Drive, Schofields
Date: Wednesday, 17 April 2019 10:53:43 AM
Attachments: image004.jpg
image015.jpg
image016.jpg
image017.jpg
image018.jpg
image021.jpg
image035.jpg
image036.jpg
image037.jpg
image038.png
image039.jpg
image040.jpg
image041.jpg
image042.jpg
Endeavour Energy MDI0044 Easements and Property Tenure.pdf
Endeavour Energy FPJ 6007 Technical Review Request July 2018.pdf
Endeavour Energy Guide to Fencing, Retaining Walls & Maintenance Around Padmount Substations.pdf
EIA_and_what_do_we_know_final_20160905.pdf
Work-near-overhead-power-lines-code-of-practice.pdf
Endeavour Energy Drawing No. 86232 (OH lines minimum clearances near str....pdf
Work_near_underground_assets_guide.pdf
Safety+on+the+job.pdf
FactSheet_Building_Construction+web.pdf
Safety_75_plumbing_web.pdf

From: Cornelis Duba <Cornelis.Duba@endeavourenergy.com.au>
Sent: Tuesday, 16 April 2019 3:16 PM
To: DPE CSE Information Planning Mailbox <information@planning.nsw.gov.au>
Cc: Jeffrey Smith <Jeffrey.Smith@endeavourenergy.com.au>
Subject: NSW Planning & Environment State Significant Development SSD 9368 RE Alex Avenue Public School, Farmland Drive, Schofields

The Secretary
NSW Planning & Environment
ATTENTION: Karen Harragon, Director, Social and Other Infrastructure Assessments

Dear Sir or Madam

I refer to the Department's letter of 2 April 2019 (received by Endeavour Energy's Records Management Section on 11 April 2019) regarding the request for State Significant Development SSD 9368 at Farmland Drive, Schofields (Lot 22 DP 1194338) for Alex Avenue Public School. Submissions need to be made to the Department by 1 May 2019.

To assist Endeavour Energy it would be appreciated if in future the Department could email any development application and/or planning proposal notifications to property.development@endeavourenergy.com.au With the delays sometimes experienced in posting notifications and the high number of development application / planning proposal notifications submitted to Endeavour Energy makes it difficult to respond within the time frame requested by the Department – particularly if the matter needs to be referred to other internal stakeholders for review and comment.

Please note that the reference to Ausgrid in Section 5.17 'Consultation' of the request for Secretary's Environmental Assessment Requirements (SEARs) should refer to Endeavour Energy. Ausgrid is the electricity distributor for central and northern Sydney, the Central Coast and the Hunter Valley.

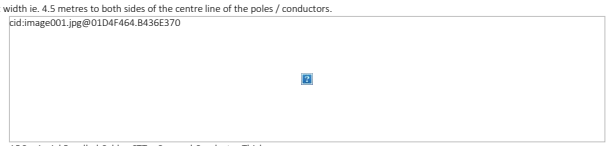
As shown in the below site plan from Endeavour Energy's G/Net master facility model (and extract from SIX Maps) there are:

- No easements over the site benefitting Endeavour Energy (active easement are indicated by red hatching whilst the blue hatching indicates a previous / released interest – in this instance being part of Endeavour Energy's previous Schofields Pole Depot site).
- 11,000 volt / 11 kilovolt (kV) high voltage underground cables and underground earth cables to the Farmland Drive road verge / roadway.
- The 11 kV high voltage underground cables to the Farmland Drive road verge / roadway go to two underground to overhead (UGOH) poles on the site where there are 11 kV (constructed at 22,000 volts / 22 kV) high voltage overhead power lines going to Endeavour Energy's Schofields Zone Substation located approximately 90 metres to the west at 14 Schofields Road Schofields (Lot 3 DP 1189372).

Please note the location, extent and type of any electricity infrastructure, boundaries etc. shown on the plan is indicative only. Generally (depending on the scale and/or features selected), low voltage (normally not exceeding 1,000 volts) is indicated by blue lines and high voltage (normally exceeding 1,000 volts but for Endeavour Energy's network not exceeding 132,000 volts / 132 kV) by red lines (these lines can appear as solid or dashed and where there are multiple lines / cables only the higher voltage may be shown). This plan only shows the Endeavour Energy network and does not show electricity infrastructure belonging to other authorities or customers owned electrical equipment beyond the customer connection point / point of supply to the property. This plan is not a 'Dial Before You Dig' plan under the provisions of Part 5E 'Protection of underground electricity power lines' of the *Electricity Supply Act 1995* (NSW).

Although the 11 kV (constructed at 22 kV) high voltage overhead power lines on the site are not held under easement, they are regarded as protected assets under the *Electricity Supply Act 1995* (NSW) Section 53 'Protection of certain electricity works'. The owner or occupier of the land cannot take any action by reason of the presence or operation of the electricity works in, on or over the land ie. they cannot remove the electricity infrastructure from the property without Endeavour Energy's prior consent. These protected assets (which in this case appear to be a temporary supply arrangement to other nearby development and will be undergrounded into the future road layout) are managed on the same basis as if an easement was in existence – please refer to the below point 'Easement Management / Network Access'.

In accordance with the attached copy of Endeavour Energy's Mains Design Instruction MDI 0044 'Easements and Property Tenure Rights', as shown in the following extract of Table 1 – 'Minimum easement widths', the low voltage overhead power lines requires a 9 metre minimum easement width ie. 4.5 metres to both sides of the centre line of the poles / conductors.



ABC = Aerial Bundled Cables CTT = Covered Conductor Thick

Alternatively, any buildings, structures, etc. whether temporary or permanent, must comply with the minimum safe distances / clearances for voltages up to and including 132,000 volts (132kV) as specified in:

- Australian/New Zealand Standard AS/NZS 7000 – 2016: 'Overhead line design'; and
- 'Service and Installation Rules of NSW' which can accessed via the following link to the NSW Planning & Environment website: https://www.energy.nsw.gov.au/energy-supply-industry/pipelines-electricity-gas-networks/network-connections/rules .

These distances must be maintained regardless of the Council's allowable building setbacks etc. under its development controls.

As a guide please find attached a copy of Endeavour Energy Drawing 'Overhead Lines Minimum Clearances Near Structures'.

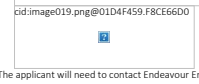
Subject to the foregoing and the following recommendations and comments, in regards to Endeavour Energy's role as an electricity supply authority, Endeavour Energy has no objection to the Development Application.

- Network Capacity / Connection

Endeavour Energy has noted the reissued SEARs identifies utilities as a 'Key Issue':

The availability of electricity supply to a site is based on a wide range of factors eg. the age and design of the network; other development in the locality utilising previously spare capacity within the local network; the progress of nearby / surrounding sites including electricity infrastructure works eg. a smaller and isolated development that may not of its own accord require a substation may require a substation to facilitate the development and from which the spare capacity is made available to subsequent nearby development. Padmount substations can accommodate loads from 315 kilovolt amperes (kVA) up to 1,500 kVA (typically 500 kVA) ie. there is a significant variation in the number and type of premises able to be connected to a substation.

The following site plan from Endeavour Energy's G/Net master facility model shows there are various 'Work Polygons' (shown by the coloured highlighting and/or hatching of the lot) in the vicinity and over part of the site indicating enquiries and applications for contestable works projects with Endeavour Energy's Network Connections Branch for electricity supply. As such, Endeavour Energy's Network Connections Branch are managing the conditions of supply with the proponent and their Accredited Service Provider (ASP). However there is no specific 'Work Polygon' for the Alex Avenue Public School site and the existing 'Work Polygon' over part of the site is for electricity supply to the development for urban residential subdivision (Endeavour Energy's reference URS16454).



The applicant will need to contact Endeavour Energy's Network Connections Branch (via Head Office enquiries on telephone: 133 718 or (02) 9853 6666 from 8am - 5:30pm) if this Development Application:

- Includes any contestable works projects that are outside of the existing approved / certified works.
- Results in an electricity load that is outside of the existing Supply / Connection Offer requiring the incorporation of the additional load for consideration. This is due to load being based on a desktop assessment using an After Diversity Maximum Demand (AMMD) where demand is aggregated over a large number of customers providing an ADMD for the site / per lot. Depending on the actual development proposed for the site, the ADMD provided may not be sufficient ie. the construction of a public school could result in the creation of additional load compared to a residential use of the site.

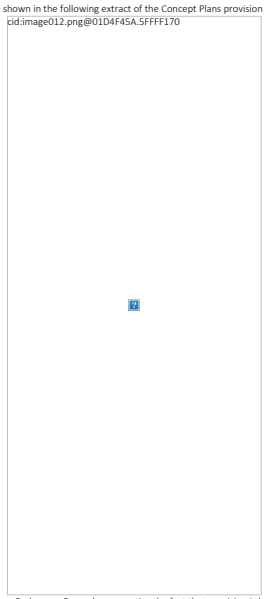
Otherwise, in due course the applicant for the proposed development of the site will need to submit an application for connection of load via Endeavour Energy's Network Connections Branch to carry out the final load assessment and the method of supply will be determined. Depending on the outcome of the assessment, any required padmount substation will need to be located within the property (in a suitable and accessible location) and be protected (including any associated cabling) by an easement and associated restrictions benefiting and gifted to Endeavour Energy. Please refer to Endeavour Energy's Mains Design Instruction MDI 0044 'Easements and Property Tenure Rights'. Further details are available by contacting Endeavour Energy's Network Connections Branch via Head Office enquiries on telephone: 133 718 or (02) 9853 6666 from 8am - 5:30pm or on Endeavour Energy's website under 'Home > Residential and business > Connecting to our network' via the following link:
http://www.endeavourenergy.com.au/ .

Advice on the electricity infrastructure required to facilitate the proposed development (including asset relocation) can be obtained by submitting a Technical Review Request to Endeavour Energy's Network Connections Branch, the form for which FPJ6007 is attached and further details (including the applicable charges) are available from Endeavour Energy's website under 'Our connection services'. The response to these enquiries is based upon a desktop review of corporate information systems, and as such does not involve the engagement of various internal stakeholders in order to develop a 'Connection Offer'. It does provide details of preliminary connection requirements which can be considered by the applicant prior to lodging a formal application for connection of load.

Alternatively the applicant should engage an Accredited Service Provider (ASP) of an appropriate level and class of accreditation. The ASP scheme is administered by NSW Planning & Environment and details are available on their website via the following link or telephone 13 77 88:

https://energysaver.nsw.gov.au/households/you-and-energy-providers/installing-or-altering-your-electricity-service .

As shown in the following extract of the Concept Plans provision has been made for a padmount substation to the south western corner / proposed Pelican Road frontage of the site.



From Endeavour Energy's perspective the fact that provision is being made for the substation is a positive. Endeavour Energy's general requirements is for a padmount substation easement to have a minimum size of 2.75 x 5.5 metres and also have the additional restrictions for fire rating (which usually extends 3 metres horizontally from the base of the substation footing, and 6 metres vertically from the same point) and possibly swimming pools and spas (which in this instance does not appear to be applicable). The easement and restriction/s should not affect any adjoining property (unless supported by an appropriate easement / restriction). The substation should be at ground level and have direct access from a public street (unless provided with a suitable easement for right of access). Generally it is the Level 3 Accredited Service Provider's (ASP) responsibility (engaged by the developer) to make sure that the substation location and design complies with Endeavour Energy's standards the suitability of access, safety clearances, fire ratings, flooding etc.

As a condition of the Development Application consent, the applicant should be required to submit documentary evidence from Endeavour Energy confirming that satisfactory arrangements have been made for the connection of electricity and the design requirements for the substation, prior to the release of the Subdivision Certificate / Construction Certificate / commencement of works.

- Urban Network Design

Endeavour Energy's Company Policy 9.2.5 'Network Asset Design', includes the following requirements for electricity connections to new urban subdivision / development:

- Bushfire

Endeavour Energy has noted the following in the request for SEARs:

NSW Rural Fire Service 'Planning for Bush Fire Protection 2006' as a general bush fire protection measures requires that electricity should be located so as not to contribute to the risk of fire or impede the fire fighting effort.

The following is an extract of Endeavour Energy's Company Policy 9.1.1 Bushfire Risk Management:

Accordingly the network required to service the proposed development must be fit for purpose and meet the technical specifications, design, construction and commissioning standards based on Endeavour Energy's risk assessment associated with the implementation and use of the network connection / infrastructure for a bushfire prone site. In assessing bushfire risk, Endeavour Energy has traditionally focused on the likelihood of its network starting a bushfire, which is a function of the condition of the network. Risk control has focused on reducing the likelihood of fire ignition by implementing good design and maintenance practices. However safety risks associated with the loss of electricity supply are also considered.

- Streetlighting

With the significant increase in both vehicular and pedestrian traffic, the streetlighting for the proposed development should be reviewed and if necessary upgraded to comply with the series of standards applying to the lighting of roads and public spaces set out in with Australian/New Zealand Standard AS/NZS 1158: 2010 'Lighting for roads and public spaces' as updated from time to time.

Whilst the determination of the appropriate lighting rests with the road controlling authority, Endeavour Energy as a Public Lighting Service Provider is responsible for operating and maintaining the streetlights on behalf of local councils, Roads and Maritime Services and other utilities in accordance with the NSW Public Lighting Code, January 2006 (Code). Endeavour Energy recognises that well designed, maintained and managed Public Lighting offers a safe, secure and attractive visual environment for pedestrians and drivers during times of inadequate natural light.

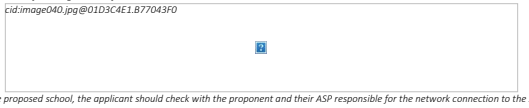
For any Code implementation and administration / technical matters please contact Endeavour Energy's Substation Mains Assets Section via Head Office enquiries on telephone: 133 718 or (02) 9853 6666 from 8am - 5:30pm or email mainsenquiry@endeavourenergy.com.au .

- Earthing

The construction of any building or structure (including fencing, signage, flag poles, hoardings etc.) whether temporary or permanent that is connected to or in close proximity to Endeavour Energy's electrical network is required to comply with Australian/New Zealand Standard AS/NZS 3000:2018 'Electrical installations' as updated from time to time. This Standard sets out requirements for the design, construction and verification of electrical installations, including ensuring there is adequate connection to the earth. Inadequate connection to the earth to allow a leaking/fault current to flow into the grounding system and be properly dissipated places persons, equipment connected to the network and the electricity network itself at risk from electric shock, fire and physical injury.

Endeavour Energy's Substation Primary Design Section have provided the following comments:

Endeavour Energy's 'Design certification checklist for ASP L3' the design must comply with Endeavour Energy's 'Earthing Design Instruction EDI 001 – Earthing design risk assessment' in which schools, pre-schools and day care centres are regarded as a 'special location' – please see the following extract of EDI 001.



For the proposed school, the applicant should check with the proponent and their ASP responsible for the network connection to the site that any padmount substation earthing has been designed to comply with the 'special location' requirements under EDI 100 ie. at the time the ASP did the design for the original subdivision they may not have been aware of the intended use of part of the site as a 'special location'.

- Prudent Avoidance

The electricity network is operational 24/7/365 ie. all day, every day of the year. The electricity industry has adopted a policy of prudent avoidance by doing what can be done without undue inconvenience and at modest expense to avert the possible risk to health from exposure to emissions form electricity infrastructure such as electric and magnetic fields (EMF) and noise which generally increase the higher the voltage ie. Endeavour Energy's network ranges from low voltage (normally not exceeding 1,000 volts) to high voltage (normally

exceeding 1,000 volts but not exceeding 132,000 volts / 132 kV).

In practical terms this means that when designing new transmission and distribution facilities, consideration is given to locating them where exposure to the more sensitive uses is reduced and increasing separation distances. Endeavour Energy believes that likewise the Department should also adopt a policy of prudent avoidance by the siting of more sensitive uses away from any electricity infrastructure – including any possible future electricity infrastructure required to facilitate the proposed development. Even with less sensitive non-residential development, Endeavour Energy believes that a policy of prudent avoidance should be considered.

Please find attached a copy of Energy Networks Association's 'Electric & Magnetic Fields – What We Know' which can also be accessed via their website at http://www.ena.asn.au/ and contains the following advice:

Electric fields are strongest closest to their source, and their strength diminishes rapidly as we move away from the source.

The level of a magnetic field depends on the amount of the current (measured in amps), and decreases rapidly once we move away from the source.

Typical magnetic field measurements associated with Endeavour Energy's activities and assets given the required easement widths, safety clearances etc. and having a maximum voltage of 132,000 volt / 132 kV, will with the observance of these separation distances not exceed the recommended magnetic field public exposure limits.

Endeavour Energy's Network Environment Assessment Section has previously provided the following advice in regards to a child care centre proposed in proximity of endeavour Energy's electricity infrastructure:

As far as I know there are no restrictions in legislation that stop a child care centre being placed next to an easement for electricity infrastructure.

Prudent avoidance measures must however be implemented. Prudent avoidance was a policy recommended by former Chief Justice of the High Court of Australia, Sir Harry Gibbs, as a result of an inquiry he conducted into community needs and high voltage transmission lines including issues in relation to EMF back in 1991. The findings in the Gibbs report are consistent with subsequent inquiries and are still relevant today.

Prudent avoidance is defined as doing what can be done without undue inconvenience and at modest expense to avert the possible risk to health from exposure to new high voltage transmission facilities. In practical terms, this means designing new transmission and distribution facilities having regard to their capacity to produce EMFs, and siting them having regard to the proximity of houses, schools and the like.

Although the Gibbs report was particularly aimed at electricity distributers to consider when placing their infrastructure, and bearing in mind that there are childcare centres and schools adjacent to our infrastructure in various locations right across our franchise area, it is nonetheless Endeavour Energy's recommendation it that a child care centre not be built adjacent to electricity infrastructure.

Should such a development proceed, the design of the child care centre should also consider prudent avoidance measures such as any rooms which the children will occupy (play areas, sleeping rooms, eating areas) be arranged such that they are on the side of the site/building which is furthest away from the electricity infrastructure.

- Easement Management / Network Access

The following is a summary of the usual / main terms of Endeavour Energy's electrical easements requiring that the land owner:

- Not install or permit to be installed any services or structures within the easement site.
- Not alter the surface level of the easement site.
- Not do or permit to be done anything that restricts access to the easement site without the prior written permission of Endeavour Energy and in accordance with such conditions as Endeavour Energy may reasonably impose.

Endeavour Energy's preference is for no activities or encroachments to occur within its easement areas. Most activities are prohibited within the padmount substation easement area. However, if any proposed works (other than those approved / certified by Endeavour Energy's Network Connections Branch as part of an enquiry / application for load) will encroach/affect Endeavour Energy's easements or protected assets, contact must first be made with the Endeavour Energy's Easements Officer, Jeffrey Smith, on direct telephone 9853 7139 or alternately email Jeffrey.Smith@endeavourenergy.com.au or Easements@endeavourenergy.com.au .

For further information please refer to the attached copies of Endeavour Energy's:

- Mains Design Instruction MDI 0044 'Easements and Property Tenure Rights'.
- Guide to Fencing, Retaining Walls and Maintenance Around Padmount Substations.

It is imperative that the access to the existing electrical infrastructure on and in proximity of the site be maintained at all times. To ensure that supply electricity is available to the community, access to the electricity infrastructure may be required at any time. Restricted access to electricity infrastructure by maintenance workers causes delays in power restoration and may have severe consequences in the event of an emergency.

- Vegetation Management

The planting of large trees in the vicinity of electricity infrastructure is not supported by Endeavour Energy. Suitable planting needs to be undertaken in proximity of electricity infrastructure. Only low growing shrubs not exceeding 3.0 metres in height, ground covers and smaller shrubs, with non-invasive root systems are the best plants to use. Larger trees should be planted well away from electricity infrastructure (at least the same distance from overhead power lines as their potential full grown height) and even with underground cables, be installed with a root barrier around the root ball of the plant. Landscaping that interferes with electricity infrastructure may become a potential safety risk, cause of bush fire, restrict access, reduce light levels from streetlights or result in the interruption of supply. Such landscaping may be subject to Endeavour Energy's Vegetation Management program and/or the provisions of the *Electricity Supply Act 1995* (NSW) Section 48 'Interference with electricity works by trees' by which under certain circumstances the cost of carrying out such work may be recovered.

- Dial Before You Dig

Before commencing any underground activity the applicant is required to obtain advice from the ***Dial Before You Dig* 1100** service in accordance with the requirements of the *Electricity Supply Act 1995* (NSW) and associated Regulations. This should be obtained by the applicant not only to identify the location of any underground electrical and other utility infrastructure across the site, but also to identify them as a hazard and to properly assess the risk.

- Public Safety

Workers involved in work near electricity infrastructure run the risk of receiving an electric shock and causing substantial damage to plant and equipment. I have attached Endeavour Energy's public safety training resources, which were developed to help general public / workers to understand why you may be at risk and what you can do to work safely. The public safety training resources are also available via Endeavour Energy's website via the following link:

http://www.endeavourenergy.com.au/wps/wcm/connect/ee/nsw/nsw+homepage/communitynav/safety/safety+brochures .

If the applicant has any concerns over the proposed works in proximity of the Endeavour Energy's electricity infrastructure to the road verge / roadway, as part of a public safety initiative Endeavour Energy has set up an email account that is accessible by a range of multiple stakeholders across the company in order to provide more effective lines of communication with the general public who may be undertaking construction activities in proximity of electricity infrastructure such as builders, construction industry workers etc. The email address is Construction.Works@endeavourenergy.com.au .

- Emergency Contact

In case of an emergency relating to Endeavour Energy's electrical network, the applicant should note the Emergencies Telephone is 131 003 which can be contacted 24 hours/7 days.

I appreciate that not all the foregoing issues may be directly relevant or significant to the Development Application. However, Endeavour Energy's preference is to alert proponents / applicants of the potential matters that may arise should development within closer proximity of the existing and/or required electricity infrastructure needed to facilitate the proposed development on or in the vicinity of the site occur.

As an adjoining or nearby owners and occupiers, Endeavour Energy's Schofields Zone Substation being a non-habitable building / site is comparatively less impacted. Whilst Endeavour Energy is not necessarily opposed to the Development Application, it will leave the determination in regards to the environmental impact and the appropriate development controls to the Department. Endeavour Energy has no objection to the Development Application

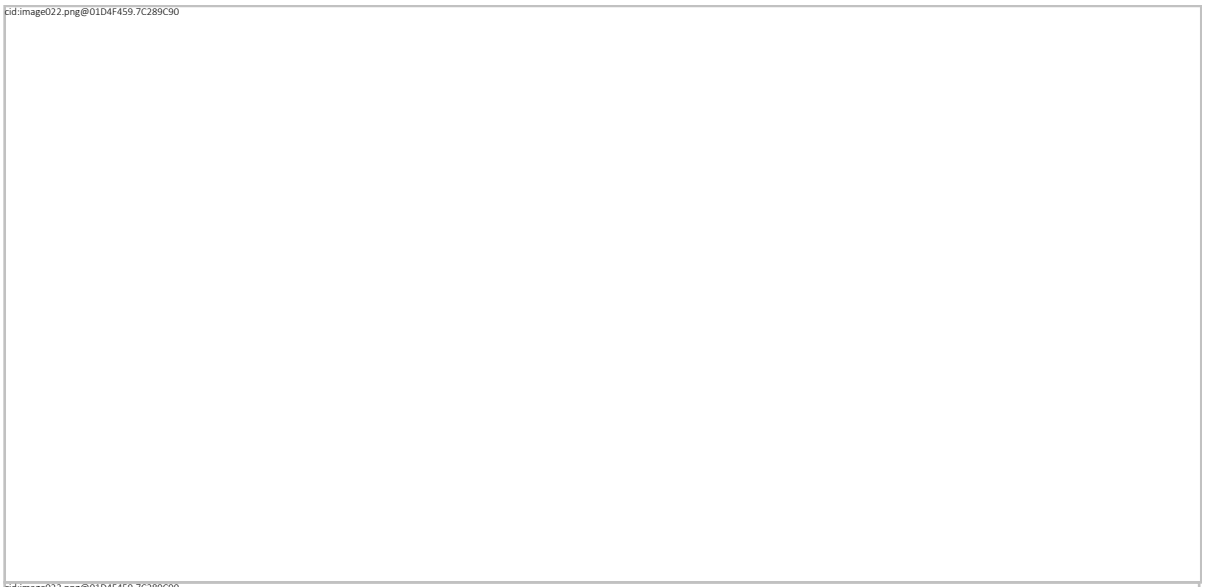
Could you please pass on a copy of this submission and the attached resources to the applicant? Should you wish to discuss this matter, or have any questions, please do not hesitate to contact me or the contacts identified above in relation to the various matters. Due to the high number of development application / planning proposal notifications submitted to Endeavour Energy, to ensure a response contact by email to property.development@endeavourenergy.com.au is preferred.

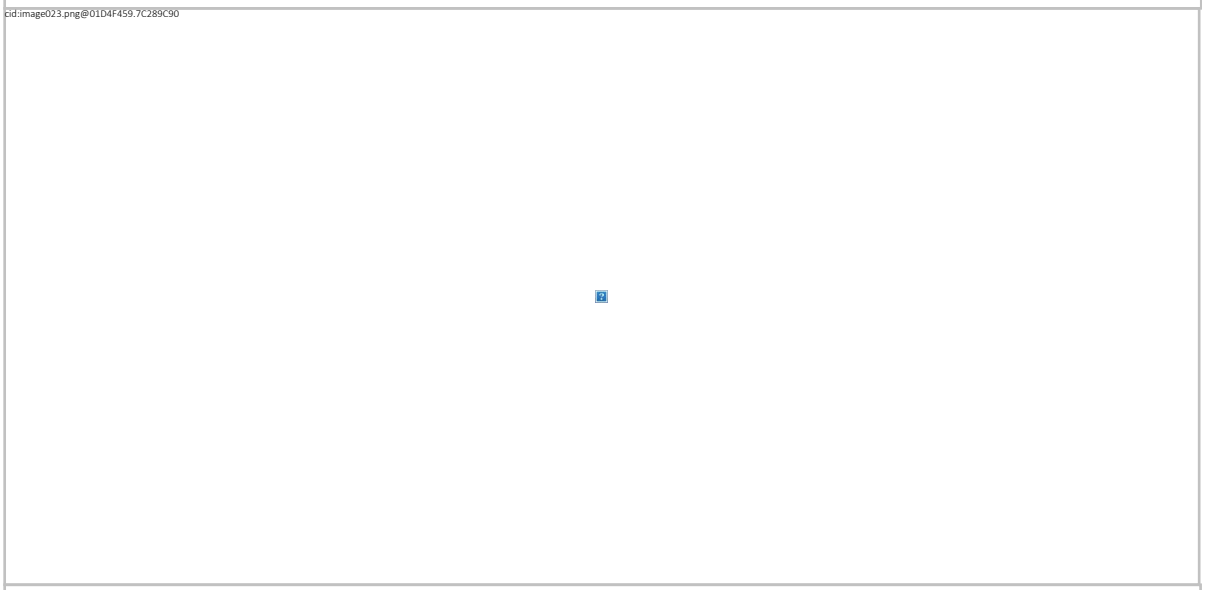
Yours faithfully

Cornelis Duba
Development Application Specialist
Network Environment & Assessment
T: 9853 7896
E: cornelis.duba@endeavourenergy.com.au
51 Huntingwood Drive, Huntingwood NSW 2148
www.endeavourenergy.com.au

cid:image001.png@01D12CFC.C14A2E60

cid:image014.png@01D4F458.9E0787A0


cid:image022.png@01D4F459.7C289C90


cid:image023.png@01D4F459.7C289C90