

## William Hodgkinson

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**Subject:** NSW Planning & Environment Notice of Exhibition for Kemps Creek Warehouse, Logistics and Industrial Facilities Hub (SSD 9522)

**Attachments:** Endeavour Energy MDI0044 Easements and Property Tenur2.pdf; Endeavour Energy FPJ 6007 Technical Review Request July 2018.pdf; ENA\_emf\_what\_do\_we\_know\_final 20160902.pdf; Endeavour Energy Guide to Fencing, Retaining Walls & Maintenance Around ....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\_DL\_plumbing\_web.pdf

**From:** Cornelis Duba <Cornelis.Duba@endeavourenergy.com.au>

**Sent:** Tuesday, 9 July 2019 8:24 AM

**Subject:** NSW Planning & Environment Notice of Exhibition for Kemps Creek Warehouse, Logistics and Industrial Facilities Hub (SSD 9522)

The Secretary  
NSW Planning & Environment

**ATTENTION: William Hodgkinson, Planning Services, Industry Assessments**

Dear Sir or Madam

I refer to the Department's below email of 5 June 2019 regarding the Notice of Exhibition for State Significant Development SSD 9522 Kemps Creek Warehouse, Logistics and Industrial Facilities Hub at 657-769 Mamre Road, Kemps Creek (Lot 34 DP 1118173, Lots X & Y DP 421633, Lot 1 DP 1018318, Lot 22 DP 258414) comprising site-wide earthworks, infrastructure and internal road network; construction and operation of 11 warehouses (165,186 m2 GFA); 816 parking spaces; and subdivision. Submissions needed to be made to the Department by 8 July 2019. I apologise for the late submission but trust that Endeavour Energy's recommendations and comments will still be considered.

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

- No easements over the site benefitting Endeavour Energy (active easements are indicated by red hatching).
- 11,000 volt / 11 kilovolt (kV) (constructed at 22,000 volt / 22 kV) high voltage overhead power lines to the Bakers Lane road verge / roadway.
- Low voltage overhead power lines to parts of the Mamre Road road verge / roadway with 11 kV and 11 kV (constructed at 22 kV) high voltage overhead power lines to the opposite side of the road.

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).

Subject to the following recommendations and comments Endeavour Energy has no objection to the Development Application.

- Network Capacity / Connection

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/s 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> .

- 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:

## 5.11 Reticulation policy

### 5.11.1 Distribution reticulation

In order to improve the reliability performance of and to reduce the operating expense of the network over the long term the company has adopted the strategy of requiring new construction to be either underground cables or where overhead is permitted, to be predominantly of insulated construction. Notwithstanding this strategy, bare wire overhead construction is appropriate and permitted in some situations as detailed below.

In areas with the potential for significant overhanging foliage, CCT is used to provide increased reliability as it is less susceptible to outages from wind-blown branches and debris falling onto the conductors. CCT must only be used in treed<sup>2</sup> areas as the probability of a direct lightning strike is low. In open areas where the line is not shielded from a direct lightning strike, bare wire overhead must generally be used for 11kV and 22kV reticulation.

Non-metallic Screened High Voltage Aerial Bundled Cable (NMSHVABC) must be used in areas which are heavily treed and where it is not practicable to maintain a tree clearing around the conductors.

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<sup>2</sup> A "treed" area is one with a substantial number of trees adjacent to the line, in each span. In these situations CCT is used to provide increased reliability as it is less susceptible to outages from wind-blown branches and debris falling onto the conductors.

#### 5.11.1.1 Urban areas

Reticulation of new residential subdivisions will be underground. In areas of low tree density and low consequence, new lines within existing overhead areas can be overhead, unless the overhead lines are cost justified or required by either environmental or local council requirements.

Where underground reticulation is required on a feeder that supplies a mixture of commercial and/or residential loads, the standard of underground construction will be determined by the types of load within that development.

Where ducting is used, adequate spare ducts and easements must be provided to allow for future expansion to cover the final load requirements of the entire development plan.

Extensions to the existing overhead 11kV/22kV network must generally be underground. Bare wire overhead will be used for conductor replacements and augmentations except in treed areas where NMSHVABC must be used.

Extensions to the existing overhead LV network and augmentations must either be underground or NMSHVABC. Conductor replacements greater than 100m in route length must utilise aerial work.

- Location of Electricity Easements / Prudent Avoidance

The incorporation of electricity easements into privately owned lots is generally problematic for both Endeavour Energy and the future landowners and requires additional easement management to ensure no uncontrolled activities / encroachments occur within the easement area. Accordingly Endeavour Energy's recommendation is that whenever reasonably possible, easements be entirely incorporated into public reserves and not burden private lots (except where they are remnant lots or not subject to development).

Where easements are incorporated into private lots Endeavour Energy's preference is to have access by the most direct and practicable route with the easement area kept to a minimum eg. padmount substations are located at the front boundary to avoid the need to have the associated cables extend into the property which then also require an easement.

This is also in keeping with a policy of prudent avoidance by the siting of more sensitive uses eg. those parts of the site regularly occupied by people such as office components of a building, away from any electricity infrastructure to minimise exposure to electric and magnetic fields (EMF), noise etc. associated with the 24/7/365 (all day, every day of the year) operation of the electricity network.

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 <https://www.energynetworks.com.au/electric-and-magnetic-fields> and provides 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.

- Flooding and Drainage

Endeavour Energy has noted in the Request for Secretary's Environmental Assessment Requirements that a portion of the site is flood affected. Distribution substations should not be subject to flood inundation ie. the padmount substation cubicles are weather proof not flood proof. Section 7 'Substation and switching stations' of Endeavour Energy's Mains Construction Instruction MCI 0006 'Underground distribution construction standards manual' provides the following details of the requirements for addressing flooding in new padmount substation locations

### 7.1.6 Flooding and drainage

Substations are to be located such that the risk of flooding or stormwater damage is minimised.

As a minimum the level at the top of the transformer footing, HV and LV switchgear, shall be lower than the 1:100 year flood level.

All drains within the substation site area or in the vicinity shall be properly maintained to avoid the possibility of water damage to Endeavour Energy's equipment.

In areas where, as determined by the Network Substation Manager, there is a high water table or a heightened risk of flooding, indoor substations will not be permitted.

All materials used in the construction below the substation (ground level) shall be capable of withstanding prolonged immersion in water without swelling or deterioration.



**Figure 51 - Example substation raised above 1:100 flood level**

- **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.

In regards to the padmount substations that will be required to facilitate the proposed development, please find attached for the applicant's reference a copy Endeavour Energy's 'Guide to Fencing, Retaining Walls and Maintenance Around Padmount Substations'.

- 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.

- Demolition

Demolition work is to be carried out in accordance with Australian Standard AS 2601—2001: 'The demolition of structures' as updated from time to time. All electric cables or apparatus which are liable to be a source of danger, other than a cable or apparatus used for the demolition works shall be disconnected ie. the existing customer service lines will need to be isolated and/or removed during demolition. Appropriate care must be taken to not otherwise interfere with any electrical infrastructure on or in the vicinity of the site eg. streetlight columns, power poles, overhead power lines and underground cables etc.

- 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](mailto: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 Modifications. 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.

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](mailto:property.development@endeavourenergy.com.au) is preferred.

Yours faithfully

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Figure 1: Subject Site and Surrounding Context (NearMaps, 2018)





