TfNSW reference: WST24/00200/001, SF2024/097957
DPHI reference: SSI-70610456

29 May 2024

Department of Planning, Housing & Infrastructure
Locked Bag 5022
PARRAMATTA NSW 2124

Attention: Lauren Clear

SSI-70610456, Hunter Transmission Line; 100km Between Bayswater and Olney State Forest; Singleton, Cessnock, Lake Macquarie, Central Coast, Muswellbrook, Maitland and Newcastle, LGAs; SEARs Request

Thank you for referring the abovementioned request for SEARs to Transport for NSW (TfNSW) seeking comments in relation to the proposed Hunter Transmission Project. The project impact areas are within the LGA(s) of Singleton, Cessnock, Lake Macquarie, Central Coast, Muswellbrook, Maitland and Newcastle.

TNSW has reviewed the Scoping Study prepared by EnergyCo. dated May 2024 and provides advice in **Attachment A** to assist in the preparation of the EIS and supporting documentation for the future lodgement of the application with the Department of Planning, Housing and Infrastructure.

If you have any questions or wish to discuss this matter further, please contact Glenn Hanchard or Alexandra Power on 1300 019 680 or email development.renewables@transport.nsw.gov.au

Yours faithfully,

Alexandra Power
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Attachment A

SSI-70610456, Hunter Transmission Line; 100km Between Bayswater and Olney State Forest; Singleton, Cessnock, Lake Macquarie, Central Coast, Muswellbrook, Maitland and Newcastle, LGAs; SEARs Request

Context

- The application is for the Hunter Transmission project which includes two new substations at Bayswater and Olney and a new double circuit 500 kV overhead transmission line between substations.
- The project also requires associated works including upgrades to existing substations, adjustments to existing transmission lines, road upgrades, access tracks, temporary construction facilities such as laydown areas, stringing sites, construction support sites and workers accommodation.
- The line runs for approx. 100km between Bayswater and Olney State Forest and it is anticipated there will be a high number of access points required. A full schedule of access locations and how they interact with the classified road network will need to be provided as part of the EIS.

TfNSW advice

The Environmental Impact Study to be submitted as part of the environmental planning process will need to include the following:

Requirements for the Environmental Impact Statement in relation to electricity transmission lines

In relation to the EIS, TfNSW requires the identification of all Electricity Transmission Line infrastructure that is crossing or near the state classified road network or rail infrastructure within TfNSW remit. In respect to this matter the following information is required:

- The heights or depths (under boring) and the vertical and horizontal clearances (overhead) in accordance with Austroads.
- The method for construction of the transmission lines, including demonstrating intermittent closures of State roads for the works will not exceed ten (10) minute delays, with stoppages not exceeding 5 minutes for no more than 6 times per a day and must occur outside of peak hour.
- location of infrastructure relative to the road reserve, including demarcation of local and state classified road reserves.
- If excavation or fill is required adjacent to the road corridor.
- Access required to construct and maintain the infrastructure.
- Strategic concept designs for each transmission line crossing the state classified road network must be provided.
- As ETLs require numerous access points and tracks a full schedule of access locations will need to provided with the application. Access tracks required for ETLs or other infrastructure will require the same level of assessment as the primary project access points and will need to address the matters outlined within this letter for this type of access with the state classified road. Strategic designs and swept path analysis will be required for these types of accesses.

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Traffic Impact Assessment requirements

The TIA is to be tailored to the scope of the proposed development and include, but not be limited to, the following:

- Identify the hours of construction of works, days for construction, staging and scheduling of construction (inclusive of pre-construction minor works), peak of construction and timeframe for construction (i.e commencement year and completion year).
- Detailed plans identifying the proposed location of any infrastructure within or outside of the project boundaries.
- Identify the key accesses and routes for all traffic types required for the project.
- The EIS and TIA must identify the source for input materials and quantify the traffic generation associated with the haulage of the source materials.

Traffic generation assessments and traffic surveys requirements:

Schedule of Access Requirements

- The Hunter Transmission project has been identified to run for approx. 100km between Bayswater and Olney State Forest and it is anticipated there will be a high number of access points required. A full schedule of access locations and how they interact with the classified road network will need to be provided as part of the EIS. Strategic designs and swept path analysis will be required for these types of accesses.

- Existing background traffic must be informed by traffic surveys undertaken at all impacted intersections at access points with the state classified road network associated with the light and heavy vehicle routes. The traffic surveys are required to be undertaken in accordance with *Austroads Guide to Traffic Management (AGTM)* Part 3 with raw data from the surveys provided with the TIA.
  - Identify the construction traffic volumes and types at each intersection for any pre-construction activities and they type of pre-construction activities.
  - Project-related traffic primarily for worst-case scenario for the project (generally peak of construction).
  - Assessment of the turn warrants for the applicable design speed and in accordance with the requirements for turn warrants assessment specified in AGTM Part 6. The worst-case scenario traffic generation for the project AM/PM peaks is required to be applied to the background traffic volumes. To be representative of the traffic volumes of the network the following must be included to inform the background traffic volumes for the turn warrants assessment, the existing background traffic volumes at the network AM/PM peak, annual growth rate applied linearly to the year of peak of the traffic vehicle movements and accumulative traffic associated with Major Projects (EIS and approved) with coinciding construction timeframes using through and turning movements using the same routes and intersections as the project.
  - Assess the Safe Intersection Sight Distance (SISD) in accordance with Part 4A of *Austroads Guide to Road Design (AGRD)* and *TfNSW supplements*.
  - Identify the necessary road network infrastructure upgrades that are required to cater for and mitigate the impact of project related traffic at the key state classified road intersections that form part of the project construction routes.

Traffic characteristics:

- Number and ratio of heavy vehicles to light vehicles.
- Identify the number of OSOM that do not require an NHVR permit and if they will occur during the AM/PM project peaks.
- Identify the single vehicle trips required for each type of vehicle required to access the sites during the AM/PM project peak, vehicles per an hour and vehicles per a day.
- Include traffic volumes associated with input and outputs required during the construction of the development.
- Identify the vehicle types required to access each intersection and access point along the route and site access points connecting to the state classified road network:
- The origins, distribution, and directional splits for the worst-case scenario for all vehicle types at each state classified road intersections and access points required to facilitate the vehicle movements for the proposed project. Including low risk OSOMs moving in accordance with the *NSW Class 1 Operators Guide*.
- Capacity analysis using *AGRD* at intersections with classified (State) road/s, and where relevant, analysis of any other intersections along the proposed transport route/s.
- Impact on rail corridors and level crossings along transport route/s detailing any proposed interface treatments, where applicable.
- A review of crash data along the identified transport route/s for the most recent 5-year reporting period and an assessment of road safety along the proposed transport route/s.
- Identify the ongoing number of workers/staffs required to operate and maintain the infrastructure for the proposed 50 year life span and the anticipated traffic impacts.

Workforce Accommodation Camp

- If workforce accommodation is proposed, then the TIA is required to assess the worst-case scenario based on the inclusion of the workforce accommodation camp, with respect to:
  - The construction schedule, staging, traffic generation until the point of when the workforce would be fully accommodated at the camp.
  - The traffic volumes during construction and if any parallel construction or pre-construction would be occurring in parallel.
  - Identify the traffic generation of all construction traffic post full occupation of the workforce accommodation camp.
  - Identify the traffic volumes associated with any pre-construction and construction works occurring in parallel to the construction and full occupation of the workforce accommodation camp.
  - Assess for the full and partial (where staged) the traffic volumes, vehicle types, changes to routes, turning directions/distributions, changes to the AM/PM project peaks for the operation of the workforce accommodation camp.
  - Identify any emergency accesses or other accesses to the state classified road required for the workforce accommodation camp.
- A review of crash data along the identified transport route/s for the most recent 5-year reporting period and an assessment of road safety along the proposed transport route/s.

Emergency access to a state classified road (if applicable):

- Must identify how the access will be managed (i.e gates) to prevent the use of the access for other vehicles associated with the development during peak of construction and operation.
- Identify the emergency design vehicle and provide a swept path analysis identifying.
- Provision of sufficient storage at the throat of the access to allow for the emergency vehicle to store within the access and not within the through lane or shoulder.

- Identify compliance with SISD for the design speed (posted speed +10km/hr).

Concept Level Route Analysis required for High Risk OSOM

- The route assessment is required for high risk OSOM (as defined on TfNSW website) required to deliver components to the project. The concept level route analysis must include:
  - The port or point of origin and must be for the entire route to the site access or intersections required to facilitate the high risk OSOM movements required for the project.
  - The TIA is required to include details of all high risk OSOM loads and vehicle configurations for the project.
  - The location of pull-over bays / rest areas along the high risk OSOM routes (including GPS coordinates) and demonstrate through swept paths that the high risk OSOMs can be physically accommodate all high risk OSOMs for the project (in terms of size, width and accessibility).

  Expanding on the points above, the concept route assessment is required to include:
  - Details of the road geometry and alignment along the identified transport route/s, including existing formations, crossings, bridges, intersection treatments and any identified hazards, including:
    - Bridge Assessments for any at risk bridges on the classified road network due to dimensions and weight of OSOM vehicles.
    - Swept path analysis demonstrating the largest design vehicle can enter and leave the development, and simultaneously pass through intersections along the proposed transport route/s.
    - The design vehicle templates used in the swept path analysis software are also requested in order for TfNSW to review the performance within the software (e.g. Autodesk Vehicle Tracking or Transoft AutoTURN).
    - Highlighting each at-risk road structures that the haulage route crosses including bridges, traffic signals, signage, major culverts, and minor culverts that may not meet the desirable cover to cater for proposed axle loads.
  - Identify and provide the following measurements parameters of OSOM components / materials to be moved:
    - Identify types and numbers of high risk OSOM vehicles proposed to be used for the project.
    - Overall combination type, configuration, load and vehicle configuration:
    - length, width, height and mass (gcm, tare, weight to axle and payload) for components and nominated vehicles.
    - Wheelbase dimensions.
    - Maximum trailer articulation angle(s).
    - Minimum overhang heights above the road surface.
    - Vehicle configurations.
    - Traffic mitigation measures or road works, modifications, or road upgrades to facilitate the movement of the high risk OSOM(s) associated with the project.
    - Potential high level mitigation measures or commitments to mitigate known traffic, safety and impacts to road users along the high risk OSOM route (i.e school bus routes, mining shift changes, TSRs, harvest periods and events).
  - Identify and assess implications of any road and rail projects that may be under construction during the indicative schedule for the OSOM movements.

    Note: NHVR permits do not cover road works or upgrades and environmental approvals required along any proposed OSOM route. Any road works or upgrades works required along the OSOM

route must be included within the scope of works in the SSD to ensure the development is constructable.

Note: given the high number of renewable energy and other large scale projects requiring haulage of OSOM components on the road network, restrictions, and limitations on OSOM movements may be in imposed. In this regard, it is recommended that you engage earlier with TfNSW's Development Services Renewables team to discuss the requirements of the route assessment.

Strategic concept designs

- Identify the necessary road upgrades and scope to achieve compliance with Austroads and TfNSW requirements to mitigate the traffic, safety, efficiency and impacts to TfNSW assets on the state classified road network associated with the project. Any identified road infrastructure upgrades will need to be to the satisfaction of TfNSW and Council. Works must be appropriately designed in accordance with *Austroads Guide to Road Design.*
- Strategic concept designs will need to be accompanied by swept paths for the largest vehicle required to access the access point or intersection. The swept paths must demonstrate that the largest vehicle can turn concurrently in all turn directions without crossing into the incorrect lane, tracking off the proposed/existing pavement and within the existing intersection treatments (where applicable). Swept paths will be required for the high risk OSOM to demonstrate that the high risk OSOM can be delivered within the existing or proposed pavement and if further pavement widening is required to accommodate these movements.
- The strategic concept designs must identify any acquisition required to facilitate the scope of the road upgrades and road works. The Developer will be responsible for the dedication and acquisition of land if required to accommodate the road infrastructure including, but not limited to, footways, structures, stormwater drainage, batters, maintenance access and utilities, to the satisfaction of TfNSW.

  Note: The design needs to comply with TfNSW Strategic design requirements for DAs, TfNSW technical directions, supplements, corridor strategies and Austroads and any other applicable TfNSW policies/strategies. To assist you in preparing the designs, please refer to link below:

  https://roads-waterways.transport.nsw.gov.au/business-industry/partners-suppliers/documents/planning-principles/strategic-design-fact-sheet-02-2022.pdf