

Genex Kidston Connection Project: Draft Environmental Assessment Report Powerlink Queensland

Chapter 25

Cumulative Impacts

25.0 Cumulative Impacts

25.1 Existing Environment

Existing environmental, social and economic values of the Project area, and wider region have been discussed throughout this EAR. Known existing and proposed activities within the vicinity of the Draft Alignment are provided in Table 25-1, and shown on Figure 25-1. This list is based on publically accessible information, available at the time of writing.

Project Name (Proponent)	Location	Status
Kidston Renewable Energy Hub	Adjacent to the proposed transmission line and Copperfield River substation at Kidston	Under development
66 kV and 132 kV lines (Ergon Energy)	Co-location Mount Fox to Greenvale, and Conjuboy to Kidston	Operational
Hells Gate Dam (Townsville Enterprise)	Upper Burdekin River ~25 km south of Project	Feasibility Study submitted to Government May 2018
Mount Fullstop Dam	Upper Burdekin River ~30 km south of Project	No information available
Greenvale Training Area Australia-Singapore Military Training Initiative (ASMTI) (Australian Defence Force)	South of Greenvale, location undetermined	Defence is undertaking due diligence activities and further engagement with stakeholders
One Mile Mining Lease ML6750 (Superior Resources Limited)	Intersects with Draft Alignment approx. 25 km west of Greenvale	Initial drilling program

Table 25-1 Existing and proposed developments

25.1.1 Kidston Renewable Energy Hub

The Kidston Renewable Energy Hub is currently under development, with the following key activities either completed or proposed.

- The 50 MW Kidston Solar Project (Stage One) has completed construction and is generating electricity into the National Electricity Market through a connection to Ergon Energy's existing 132 kV transmission line. This line does not have sufficient spare capacity for the following projects.
- The 250 MW Kidston Pumped Storage Hydro Project has received development approval from Etheridge Shire Council and is securing an Engineering, Procurement and Construction contract for the development.
- The 270 MW Kidston Solar Project (Stage Two) has received development approval from Etheridge Shire Council and is proceeding to construction in 2019.

The Project will connect the Kidston Renewable Energy Hub to the existing transmission network at Mount Fox. It is anticipated there may be an overlap of construction time frames between the Project and the Kidston Renewable Energy Hub.

25.1.2 Ergon transmission lines

Existing electricity infrastructure within the area includes an Ergon 66 kV transmission line that runs 90 km west from Mount Fox to Greenvale and Ergon 132 kV transmission line that runs from Ross to

25.1.3 Hells Gate dam

A Feasibility Study for the Hells Gate Dam was submitted to the Government in May 2018. The study was funded under the Federal Government's National Water Infrastructure Development Fund and is project managed by Townsville Enterprise. The feasibility study is not publically available.

The Hells Gate Dam project on the Upper Burdekin River aims to increase the agricultural production of North Queensland, establishing up to 100,000 ha of irrigated agricultural land. The area of the proposed dam is on private property and is not easily accessible by conventional vehicle.

25.1.4 Mount Fullstop dam

The Mount Fullstop Dam has historically been proposed as an alternative to the Hells Gate Dam. It is not currently under investigation and is not considered further in this section.

25.1.5 Greenvale training area

Australia and Singapore have agreed a Memorandum of Understanding which delivers a framework to implement increased Singapore Armed Forces unilateral training in Australia. It sets the conditions for upgrading Defence training areas in Central and North Queensland to deliver enhanced training outcomes for both the Singapore Armed Forces and the Australian Defence Force.

Following consultations with potential willing sellers, Defence has assessed that land south of Greenvale would provide the space and terrain to enable large-scale military manoeuvres, and support current and future training requirements. Defence is continuing to engage further with willing sellers in this area and undertake additional due diligence activities (Department of Defence, 2018).

Powerlink Queensland undertook consultation with Defence in June 2018, and it was determined that there is no crossover in areas of interest, however the construction periods may overlap.

25.1.6 One Mile mining lease

The One Mile Mining Lease (ML6750) forms part of Superior Resources Limited's Greenvale Project which, as at June 2018, also includes five granted exploration permits (EPM18987, EPM19247, EPM25659, EPM26165 and EPM25691) and two exploration permit applications (EPM(A)26751 and EPM(A)26879).

The Greenvale Project is based on exploratory drilling that contains low-grade copper, gold, zinc and silver values. As at June 2018, exploratory drilling is ongoing at the Greenvale Project (Superior Resources Limited, 2018).

Powerlink Queensland provided written project information to the Superior Resources Limited about its study corridor investigations in early 2017 and invited them to participate in further discussions.



25.2 Potential Impacts

Cumulative impacts of the Project, and other known major projects in the area are difficult to quantify based on the lack of available information, however the following section aims to provide a qualitative assessment of the potential and assumed activities which may lead to a cumulative impact on the receiving environment.

25.2.1 Construction

The construction period of the Project is anticipated to be July 2019 to December 2020. The construction periods of the Kidston Renewable Energy Hub and the Greenvale Training Area have the potential to overlap with the Project. Potential cumulative impacting factors associated with the construction of these projects are discussed below.

25.2.1.1 Dust

An assessment of the potential impacts from dust from the Project is provided in Chapter 6 Air Quality. This assessment shows that the unmitigated air emissions from the construction phase poses a low risk of dust soiling and human health impacts. The assessment concluded that, per work site, emissions associated with construction activities are expected to be localised to the immediate area and only present for a short period of time.

The assessment also determined that, based on historical average annual PM_{10} concentrations for the region, the regional air shed should have capacity to accept and dissipate project particulate matter emissions.

In accordance with UK Institute of Air Quality Management (IAQM) document, *Guidance on the assessment of dust from demolition and construction*, further assessment of dust impacts is not considered required where sensitive receptors are greater than 350 m from the site boundary. The nearest sensitive receptor to the Project in the vicinity of the Kidston Renewable Energy Hub is approximately 1.5 km north east of Draft Alignment A. The location of the Greenvale Training Area has not been determined by Defence, however consultation with Defence in June 2018 indicated the training area would be located south of Greenvale (greater than 5 km from the Project). At these distances, dust impacts from the construction of the Project are unlikely to result in a cumulative dust impact on sensitive receptors.

The Project, Greenvale Training Area and Kidston Renewable Energy hub may all require the use of local unsealed roads for the transport of materials, equipment and personnel, with the potential to generate cumulative dust impacts. It is assumed that local unsealed roads will only be used by the Project to access specific and localised construction areas, and given the distance between the three projects, use of these roads are unlikely to overlap. Therefore, cumulative dust impacts from unsealed local road use are considered unlikely.

25.2.1.2 Noise

Chapter 19 Noise and Vibration identified setback distances from the Project at which compliance with noise criteria during construction would be achieved. The largest setback distance is associated with heli-stringing at 2.4 km, followed by vegetation clearing (mulcher) at 500 m. The short duration of heli-stringing at any one Project location indicates that cumulative noise impacts associated with this activity would be minimal and short term (days). Cumulative noise impacts from heli-stringing have therefore not been considered further.

The one sensitive receptor located within 500 m of the Draft Alignment is towards the eastern end of the Project, over 80 km from Greenvale. Given the distance of this sensitive receptor to the nearest proposed project, no cumulative noise impacts on this sensitive receptors are anticipated.

25.2.1.3 Road network

The road network in the vicinity of the Project site includes both State-controlled roads and local authority roads (Chapter 18 Traffic and Transport). The Draft Alignment for the transmission line intersects Kennedy Developmental Road and Gregory Developmental Road, which are both State-controlled roads. The Draft Alignment traverses several locally administered major and minor roads under the management of Etheridge Shire Council (ESC), Charters Towers Regional Council (CTRC)

In accordance with DTMR's Guide to Traffic Impact Assessment, State-controlled road links where development traffic exceeds 5% of the base traffic (background traffic) is deemed to have an impact on the road network. Chapter 18 Transport and Traffic identified that the Project's estimated construction traffic volumes will most likely exceed 5% of the background traffic on Flinders Highway, Gregory Developmental Road and Kennedy Developmental Road during the construction period. The traffic operation of local authority roads (Craiglee Road, Greenvale Valley Road and Borefield Road) was considered unlikely to be impacted by the Project, given the low background traffic volumes and the temporary duration of the construction works.

The Greenvale Training Area project is likely to use local authority roads administered by Charters Towers Regional Council and the Kidston Renewable Energy Hub is likely to use local authority roads administered by Etheridge Shire Council. Both projects are anticipated to use the Flinders Highway and Gregory Developmental Road for the delivery of construction material, machinery and personnel. Therefore, there is the potential for cumulative road network impacts should the construction periods of the three projects overlap.

25.2.2 Operation

The operation of the Project will be limited to maintenance activities along the easement and at the substations. Therefore, any potential impacts, such as dust, noise, and traffic, will be minimal and short term. Therefore cumulative impacts associated with the operational phase are not further investigated.

Cumulative electric and magnetic fields (EMF) associated with the co-location with Ergon's 66 kV and 132 kV transmission lines is addressed in Chapter 21 Electric and Magnetic Field. The cumulative level of EMF was determined to be significantly below internationally recognised EMF guidelines for established health effects.

25.3 Mitigation and Management Measures

Given the large distance of the Project from other existing and proposed projects in the region, cumulative impacts are anticipated to be limited to the road network during construction. Nonetheless, standard environmental controls, as outlined in Appendix I Environmental Management Plans, will be applied to the Project to minimise potential environmental impacts.

Potential cumulative impacts on the road network during construction will be managed through the following measures, as detailed in Chapter 18 Transport and Traffic.

- A detailed Traffic Impact Assessment (TIA) and Traffic Management Plan (TMP) for the Project to be developed and implemented prior to construction works commencing. The TIA and TMP will assess, and seek to minimise Project-related impacts.
- Apply for appropriate approvals and permits under the *Transport Infrastructure Act 1994* from DTMR for any permanent or temporary access to state control roads, including associated roadworks for access, the transport of over dimensioned equipment and materials on state control roads and for ancillary works and encroachments.
- Consideration where possible during Project planning, to undertake selected construction works likely to cause significant traffic disruption and delay at times of low traffic volumes or at night to minimise localised congestion and potential safety implications.
- Road upgrade or rectification will be undertaken (as agreed between the relevant local authorities and Powerlink Queensland) where mitigation measures are required to address issues associated with the haulage of construction materials such as pavement degradation and insufficient road geometry.