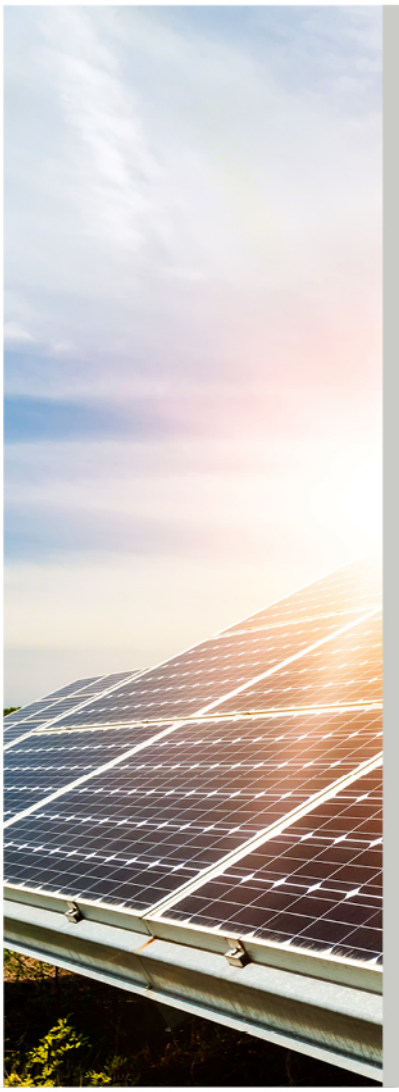
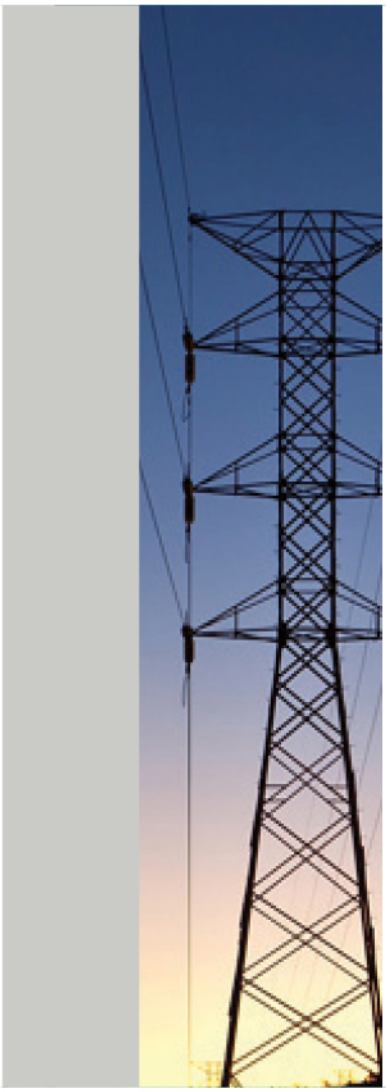
Appendix C

Infrastructure Proposal

Infrastructure Proposal
GENEX Kidston Connection Project

A2839625





Contents

Introduction

Queensland Electricity Transmission Corporation Limited (trading as Powerlink Queensland) has prepared this Infrastructure Proposal (IP) in accordance Part 1 of Chapter 7 of the *Minister's Guidelines and Rules* (MGR) prescribed in the *Planning Regulation 2017* and following consultation with representatives from the Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP)[1].

The Infrastructure Proposal

The below sets out the matters required as part of the Infrastructure Proposal and has been prepared in accordance with the MGR, Chapter 7 - *Guidelines for the process for environmental assessment and consultation for making or amending a Ministerial designation.*

1. Site description including the location of the premises proposed to be designated

Powerlink's GENEX Kidston Connection Project involves construction of –

- an approximately 188km long 275kV transmission line between Mount Fox and Kidston in North Queensland;
- a substation at each of these endpoints; and
- a short connecting line from Powerlink's substation at Kidston to the GENEX power stations.

A locality plan showing the Study Area for the project is in Figure 3, page 15 of the Corridor Selection Report (CSR) (refer Attachment 1). The preliminary alignment of the transmission line within the Study Area is shown in Figure 21, page 129-133 of the report.

2. Any existing uses on the premises proposed to be designated

The existing land use is predominantly cattle grazing operations.

GENEX's Solar and Pumped Hydro Renewable Energy Project is located on the old Kidston Gold Mine property. Part of Powerlink's proposed infrastructure will be co-located on this property.

Please refer to Section 10 and Figures 7 and 8, page 44-53 of the CSR.

3. Existing uses on adjoining sites

Adjoining land use is also predominantly cattle grazing operations. Please refer to Section 10 and Figures 7 and 8, page 44-53 of the CSR.

4. The type of infrastructure

In accordance with schedule 5 of *the Planning Regulation 2017*, the infrastructure proposed is:

7 electricity operating works

[1] Section 2.3 of Chapter 7 is not relevant to the proposal as Powerlink is a Queensland Government Owned Corporation established under the *Government Owned Corporations Act 1993*.

The construction works will comprise the following activities –

Transmission lines

- Prudent vegetation clearing to allow for the safe and efficient operation of the lines;
- Installation of access tracks including where possible use of existing tracks.
- Installation of tower foundations;
- Tower erection; and
- Conductor and earth wire stringing.

Substations

- Prudent vegetation clearing to allow for the safe and efficient construction and operation of the substations;
- Earthworks to establish a pad area and access roads;
- Foundations;
- Building, structure and electrical equipment erection; and
- Conductor and earth wire stringing.

5. Information about the nature, scale and intensity of the infrastructure and each use proposed

The proposed electricity transmission lines will comprise steel lattice towers and connecting conductors. The towers are typically between 40-60m in height with the base dimension up to 10m x 10m. Additional height towers may be required to span areas with environmental constraints or to cross physical obstacles such as rivers. Span length is around 450m on flat terrain. A typical double circuit transmission line tower is shown in the Photo 1 below.

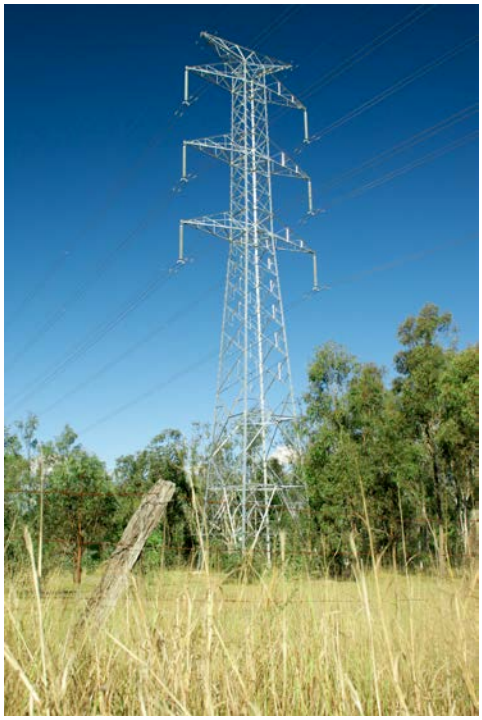


Photo 1 – Double Circuit 275kV transmission line tower

The proposed substations will contain a variety of equipment to monitor and control electricity flows, change voltages via power transformers and provide a location to physically connect new transmission lines. The size of the substation varies depending on its voltage, the type and amount of equipment to be installed and the number of transmission line connections that are required. The proposed Mount Fox substation facility is currently 210m x 150m and proposed Copperfield River Substation facility at Kidston is currently 170m x 140m. Each substation will be located within a larger area of land to provide a buffer to adjacent land uses and sufficient area to complete required earthworks. Equipment within the substation can be up to 30m high. A representative substation is shown in Photo 2 below.

Photo 2 – High voltage electricity substation

The scale and intensity of this infrastructure is significant and its potential impact on environmental and social factors is carefully assessed during the initial corridor/site selection phase, as part of ongoing stakeholder and landholder engagement and during development of the project Environmental Assessment Report.

6. The intended outcomes of the proposed uses on the site

Construction and operation of the proposed electricity transmission infrastructure will provide the essential grid connection for GENEX's Solar and Pumped Hydro Renewable Energy Project to generate electricity into the National Electricity Market.

7. Any anticipated impacts on the surrounding infrastructure network (both state and local)

Construction of the project will have short-term impacts on the surrounding state and local network infrastructure typical of those found on large civil construction projects.

Temporary construction impacts may include –

- Increased traffic movements by light and heavy vehicles on the local and State controlled road networks;
- Increased waste management;

- Requirement for power, water supply and sewerage infrastructure for the construction camps. These camps may be standalone facilities located remotely and/or they may be located within local towns such as Greenvale; and
- Requirement for telecommunications infrastructure to facilitate safe and efficient construction activities.

Once the project is operational, ongoing impacts on the state and local infrastructure network will be minimal as the infrastructure is remotely controlled, the maintenance requirements are only periodic (typically once or twice per year depending on the activity) and involve a small number of personnel.

Each of these matters will be assessed in the project environmental assessment report which will identify mitigation measures to reduce or eliminate impacts on state and local infrastructure networks.

8. A list of the applicable state interests as identified by the infrastructure entity and a statement about how they relate to the infrastructure proposal

State Interest	State Interest Goal	Infrastructure Proposal
Agriculture	Planning protects the resources on which agriculture depends and supports the long-term viability and growth of the agricultural sector.	The Project will traverse large scale grazing operations which can continue around the infrastructure and hence, does not compromise the State Interest. The EAR will assess the compatibility of the Project with the surrounding area and the region, taking into consideration the proposed measures that would be used to avoid or minimise impacts.
Mining and extractive resources	Mineral, coal, petroleum gas and extractive resources are appropriately considered in order to support the productive use of resources, a strong mining and resource industry, economical supply of construction materials, and avoid land use conflicts where possible.	Impacts on known mining and petroleum resources and resource exploration and development tenure activities will be minimised through prudent alignment selection. The EAR will assess any known mineral deposits, mines or quarries of commercial significance, including any registered exploration permits, mineral development licences, or mining leases, and active, disused, or abandoned workings within the study corridor.
Biodiversity	Matters of environmental significance are valued and protected and the health and resilience of biodiversity is maintained or enhanced to support ecological processes.	Where possible, it is proposed to locate the transmission line adjacent to existing Ergon Energy lines to minimise potential environmental impacts. The EAR will assess the existing environmental values of the area which may be affected by the Project, assess the potential impact of the Project on those environmental values and develop mitigation measures to minimise those impacts.

Cultural heritage	The cultural heritage significance of heritage places and heritage areas, including places of Indigenous cultural heritage, is conserved for the benefit of the community and future generations.	Traditional Owners have been engaged in the early phases of the project and will continue to be engaged to ensure rigorous assessment and management of matters of Cultural Heritage significance. Powerlink intends to meet its duty of care under the *Aboriginal Cultural Heritage Act 2003* through negotiating formal agreements or Cultural Heritage Management Plans with each of the relevant Aboriginal Parties, and has met with each of the groups. These agreements are expected to include detailed Cultural Heritage surveys. In relation to Native Title, Powerlink has established relationships with relevant Native Title parties. Where Native Title has not been extinguished, Powerlink will provide notices under the *Native Title Act 1993* to address Native Title over the impacted land.
Water quality	The environmental values and quality of Queensland waters are protected and enhanced.	The Project will cross several major rivers, creeks and drainage lines. The EAR will assess the location, scale and significance of hydrological features and characteristics within the study corridor for surface waters and groundwater. It will assess the potential impacts of the Project on the quality and quantity of surface waters and groundwater taking into consideration the practices and procedures that would be used to avoid or minimise impacts.
Emissions and hazardous activities	Community health and safety, sensitive land uses and the natural environment are protected from potential adverse impacts of emissions and hazardous activities while ensuring the long-term viability of industrial development and sport and recreation activities.	The EAR will assess the potential risks to people and property that may be associated with the Project. The assessment will - • describe potential hazards, accidents, spillages, fire and abnormal events that may occur during all stages of the Project; • identify all hazardous substances to be used, stored, processed or produced and the rate of usage; • identify potential natural hazards (e.g. cyclone, storm tide inundation, flooding, bushfire, landslide, shoreline erosion) and implications related to climate change; and • explain how the Project may potentially affect hazards away from the Project site (for example, changing flooding characteristics and bushfire risk). The EAR will detail safeguards that would reduce the likelihood and severity of hazards, consequences and risks to persons within the study corridor. The residual risk following application of mitigation measures will be identified.
Natural hazards, risk and resilience	The risks associated with natural hazards are avoided or mitigated to protect people and property and enhance the community's resilience to natural hazards.	As outlined above, the EAR will describe the potential natural hazards faced by the Project and mitigation measures to minimise those impacts. Appropriate siting and design of the

		electricity infrastructure will ensure the requirements of this State Interest are adequately addressed.
Energy and water supply	Planning supports the timely, safe, affordable and reliable provision and operation of electricity and water supply infrastructure.	The Project is for electricity infrastructure that directly enables renewable energy development and the Infrastructure Designation process will assist in delivering the project in a timely, affordable and safe manner.
Infrastructure integration	The benefits of past and ongoing investment in infrastructure and facilities are maximised through integrated land use planning.	The EAR will examine potential opportunities to utilise existing infrastructure, including co-location with existing Ergon Energy infrastructure.
Transport infrastructure	Planning enables the safe and efficient movement of people and goods across Queensland and encourages land use patterns that support sustainable transport.	The Project will use the local and State road network in the area. The EAR will assess the road transportation requirements on public roads during the construction and operational phases including: • proposed road access to the Project, including wet weather access if different from normal access; • the estimated volume, composition (types and quantities) of, origin and destination of goods to be moved including construction materials, plant, raw materials, wastes, hazardous materials; • the volume of traffic generated by workforce personnel, visitors and service vehicles and the delivery of materials, plant, and equipment to the Project; and • anticipated times at which movements may occur. The EAR will describe management and mitigation measures that may be applied during the construction and operation of the Project in relation to transport infrastructure and traffic management.

9. A statement about any relevant regional plans and state development areas that are applicable to the site and how they are relevant to the infrastructure proposal

The proposed project traverses the Etheridge, Charters Towers and Hinchinbrook local government areas.

The Etheridge Shire area is part of the Gulf Regional Development Plan (GRDP). The GRDP focuses on management of growth and development in the region. It is noted that whilst in place since 2000, the GRDP is not a statutory regional plan. The Hinchinbrook Shire Council and Charters Towers Regional Council areas are presently not subject to a regional plan, but will be part of the North Queensland Regional Plan currently under development[2]. The plan has undergone formal public consultation and is scheduled for adoption in early 2018.

[2] https://haveyoursay.dilgp.qld.gov.au/north-queensland

Notwithstanding the absence of statutory regional plans in the project area, the project is considered consistent with the intent of both the GDRP and future North Queensland Regional Plan, supporting the growth of sustainable industries in the region. Comprehensive impact assessment and consultation during the Infrastructure Designation process will ensure an alignment that best balances social, environmental and economic considerations is selected, upholding the balanced development outcomes sought by regional plans.

There are no State Development Areas in the project area.

Please refer to Section 9 of the CSR for further information on the regulatory framework for the project.

10. Sufficient information to address the requirements of section 36(1) of the Act

Powerlink considers its GENEX Kidston Connection Project meets the requirements of section 36(1) of the *Planning Act 2016* for the following reason –

- Evaluation of feasible solutions has identified the project as the least cost, most technically efficient solution to enable GENEX's proposed power generation and storage project to connect to the electricity grid.

Genex's power generation and storage project is an integrated solar energy and pumped hydro power station. Powerlink's transmission infrastructure project facilitates connection of this and potentially additional projects in the geographical area to the Queensland transmission network.

11. A proposed consultation strategy for the proposed designation that has taken into account the level of impact of the infrastructure proposal and that includes a method for consultation with directly affected landowners, adjoining landowners, and identified Native Title parties, differentiated from general public consultation; and

Please refer to the proposed consultation strategy is in Attachment 2.

12. Any other matter the infrastructure entity considers relevant to the request.

None.

13. Must include evidence of early engagement with affected parties and other key stakeholders around corridor selection, that reflects the scale and level of impact of the proposal;

Please refer to the proposed consultation strategy is in Attachment 2.

14. Must include a list of directly affected landowners and adjoining landowners; and

The following list of directly affected landholders is current as of May 2018. The final location of the proposed infrastructure is subject to ongoing landholder and stakeholder engagement and completion of the Infrastructure Designation process. This may result in realignment / relocation of the proposed transmission infrastructure which may result in some landholders no longer being directly affected.

Queensland Government

Department of
State Development, Manufacturing, Infrastructure and Planning

Our reference: MID-0618-0284
Your reference: A2920425

26 July 2018

Powerlink
PO Box 1193
VIRGINIA QLD 4014

Sent by email: mbrown@powerlink.com.au

Attention: Michael Brown

Dear Michael

Acknowledgement of request to designate premises for the development of infrastructure
(Given under chapter 7, part 2, section 3.1 of the Minister's Guidelines and Rules (MGR))

The Department of State Development, Manufacturing, Infrastructure and Planning (the department), received your request on 21 June 2018 to designate premises between Kidston and Mount Fox in North Queensland for the development of infrastructure.

The department has reviewed your infrastructure proposal and considers that the supplied material sufficiently addresses the matters outlined in chapter 7, part 1, section 2.2 of the MGR.

You may now prepare a Draft Environmental Assessment Report (dEAR) and undertake consultation, consistent with chapter 7, parts 3 and 4 of the MGR. Please provide a copy of the dEAR and amended consultation strategy to the department prior to the commencement of consultation.

Type of infrastructure

The infrastructure proposal requests the premises be designated for the following infrastructure as per schedule 5, part 2 of the Planning Regulation 2017 (the regulation):

- Item 7: electricity operating works.

Relevant local governments

The department considers the following local governments are or may be affected by the proposal:

1 William Street
Brisbane QLD 4000
PO Box 15009 City East
Queensland 4002 Australia
Telephone +61 7 3452 7100
www.dsdmip.qld.gov.au
ABN 29 230 178 530

- Etheridge Shire Council
- Charters Towers Regional Council
- Hinchinbrook Shire Council.

Real property description

Table 1 details the real property descriptions of the lands that will be affected by the infrastructure proposal.

Table 1: Real property descriptions of affected land

Lot	Plan
59	SP237064
26	WU4
100	SP281848
3198	PH2177
3	WU48
6	WU50
1	OC64
5234	SP275834
1	CLK23
5	CLK23
11	CLK26
6	CLK25
501	SP232789
547	SP242570
3	CLK34
4	CD35
1	CD25
3	CD12
14	LH8
182	PH995
66	SP287774
1	SP289310
4	PY15

Consultation requirements

The proposed consultation strategy provided with the designation request has been reviewed and it is to be amended to specifically include the following:

- the adjoining landholders that are identified in the infrastructure proposal as target stakeholders
- the holders of resource tenements affected by the infrastructure and include them as target stakeholders
- identify any directly affected non-government utilities and include them as target stakeholders and

- identify which engagement methods will be applied to each category of Powerlink's target stakeholders, in accordance with the MGR, Chapter 7, Part 3, section 4.2 and Part 4, sections 5.1 – 5.6, in a way that is differentiated from general public consultation.

In addition, the consultation strategy must document how the Infrastructure Entity will:

- give notice to the Minister, all affected parties and stakeholders, in accordance with the MGR, Chapter 7, Part 4, Section 5.4 on:
  - how the dEAR can be viewed or accessed including a link to the department's infrastructure designations website, or
  - how they will be provided with a copy of the dEAR, and
  - how to make a submission to the Minister within the consultation period including through the department's infrastructure designations website; and
- undertake newspaper advertising that is in accordance with the MGR, Chapter 7, Part 4, Section 5.5 and 5.6.

Consultation is to be carried out in accordance with the consultation strategy provided with the request, and the required amendments, and is to occur for a minimum period of **20 business days**, inclusive.

Advice about the draft Environmental Assessment Report (dEAR)

It is recommended that the dEAR address, among any other statutory requirements, the following state interests that apply to the proposal:

Agriculture

The construction and operation of the infrastructure must ensure development on, or adjacent to, the stock route network does not compromise the ongoing functionality and connectivity of the network's primary use for moving stock on foot, and other uses and values including grazing, environmental, recreational, cultural heritage, and tourism values.

The dEAR should demonstrate how the construction and operation of the infrastructure will:

- avoid fragmentation of ALC Class A or Class B land into lot sizes inconsistent with the current or potential use of the land for agriculture
- not have an irreversible impact on, or adjacent to, ALC Class A or Class B land
- maintain or enhance land conditions and the biophysical resources underpinning ALC Class A or Class B land and
- not compromise the safe and effective operation of existing intensive agricultural land uses, such as intensive animal industries, aquaculture, and intensive horticulture.

The dEAR should include management strategies to prevent the spread of pests during construction and operation activities in accordance with general biosecurity obligations, including practices for managing weeds of national significance (such as siam weed, *Chromolaene odorata*, which has recently been seen in the area).

Development and Construction

The dEAR should include:

- real property descriptions of the land affected by the infrastructure, and any easements/tenures or leases, existing or to be created that are to be subject to the infrastructure designation
- details of any tenures (e.g. easements, strata title rights) existing along the route of the infrastructure and their effects
- how existing and potential native title rights affected by the infrastructure will be identified and addressed appropriately.

The infrastructure must be designed, constructed and operated to avoid, manage or mitigate to an acceptable level any impacts on the natural, cultural and economic values of Girrigun National Park.

The dEAR should address any potential land use/tenure conflicts arising from the purchase and use of land in the vicinity of the infrastructure by the Australian Defence Force.

Mining and Extractive Resources

The dEAR should address how the infrastructure will impact on areas of known mineral deposits, mines or quarries including land under exploration permits or mining leases, as well as disused or abandoned mine workings, and how these impacts will be managed or mitigated to protect, and allow the productive use of, the resources and ensure the safety of workers.

Biodiversity

The infrastructure must be designed, constructed (including any associated vegetation clearing) and operated, to ensure:

- significant impacts on matters of national environmental significance avoided and the requirements of the *Environment Protection and Biodiversity Conservation Act 1999* are considered
- matters of state environmental significance are identified and adverse impacts on these matters avoided; or where adverse impacts cannot be reasonably avoided, they are minimised; these matters include but are not limited to:
    - regulated vegetation, including endangered and of concern regional ecosystems
    - wetlands and watercourses

  - essential habitat for an animal or plant that is endangered, vulnerable or near threatened
  - connectivity areas
  - protected wildlife habitat, for example:
    - non-juvenile koala habitat trees,
    - habitat for an animal that is endangered, vulnerable or special least concern as defined under the *Nature Conservation Act 1992*
    - an area shown as a high risk area on the flora survey trigger map that contains plants that are endangered or vulnerable
- matters of local environmental significance are identified and adverse impacts are avoided; or where adverse impacts cannot be reasonably avoided, they are minimised and
- ecological processes and connectivity is maintained or enhanced by avoiding fragmentation of matters of environmental significance.

Where potential impacts to prescribed environmental matters are identified, an assessment to identify whether the proposal project will, or is likely to have, a significant residual impact on a matter of state environmental significance, is required consistent with the Department of Environment and Science, Significant Residual Impact Guideline.

If, despite management and mitigation of impacts, the infrastructure still has a significant impact on environmental values, an offset may be required under the *Environmental Offsets Act 2014*.

Cultural Heritage

The dEAR should identify matters of Aboriginal and Torres Strait Islander cultural heritage that may be affected by the infrastructure. Details of how any Aboriginal and Torres Strait Islander cultural heritage matters that are identified will be considered and appropriately conserved to support the requirements of the *Aboriginal Cultural Heritage Act 2003* and the *Torres Strait Islander Cultural Heritage Act 2003*.

Water Quality

The dEAR should demonstrate how the infrastructure will be designed, constructed and operated to avoid, minimise or mitigate adverse impacts on environmental values of receiving waters arising from:

- altered stormwater quality and hydrology
- waste water (other than contaminated stormwater and sewage)
- the creation or expansion of non-tidal artificial waterways and
- the release and mobilisation of nutrients and sediments.

During the construction of the infrastructure, the applicable stormwater management design objectives in the State Planning Policy, Appendix 2, Table A must be achieved.

The dEAR should demonstrate how the impacts on waterways and fish habitats, where waterway barrier works, excavation or placing of fill (temporary or permanent), taking or interfering with water, or destroying vegetation in a watercourse, is required to allow machinery and/or vehicle access along the proposed transmission line corridor and substation sites, will be managed or mitigated.

Emissions and Hazardous Activities

The dEAR should demonstrate how:

- activities involving the use, storage, transport and disposal of hazardous materials and prescribed hazardous chemicals, dangerous goods, and flammable or combustible substances are located and managed to minimise health and safety risks to communities and individuals during the construction of the infrastructure
- the construction of the infrastructure will deal with risks associated with potential contaminated land on properties listed on the Environmental Management Register/ Contaminated Land Register.

The infrastructure must be located, designed and managed to avoid or mitigate adverse impact of emissions on sensitive land uses, including potential impacts from electric and magnetic fields (EMF) including:

- the potential impacts of EMF on the reception of electronic devices (including on the quality of satellite phones, cellular networks, UHF radio communication and the internet)
- potential impacts of EMF in relation to both sensitive receptors and the workforce of the project. The assessment should describe the potential risk of EMF from the proposed transmission line and sub-stations on adult and child health in relation to scientific evidence and the current international best practice standards. Any potential impacts to current land practices should also be detailed (including cropping and livestock) and
- suitable measures to avoid or mitigate impacts.

Natural Hazards, Risk and Resilience

The risks posed to people and property, from bushfires and flooding, resulting from constructing and operating the infrastructure, must be avoided or mitigated to an acceptable or tolerable level.

The dEAR should demonstrate how the infrastructure will avoid direct, indirect and cumulative increases in the exposure or severity of bushfire and flooding hazards, and the potential for damage within the corridor or to surrounding properties

Energy and Water Supply

Identify potential impacts from the infrastructure on existing and approved future major water (e.g. Hell's Gate and Mount Fullstop Dams) and electricity infrastructure. Any such impacts

must be managed and/or mitigated to ensure that the infrastructure does not compromise the integrity and the efficient delivery and functioning of the water infrastructure.

The dEAR should demonstrate how:

- the functioning of the infrastructure will be protected from encroachment by sensitive land uses over time
- any adverse impacts from the construction and operation of the infrastructure on surrounding land uses and the natural environment must be managed/mitigated.

Transport Infrastructure

Demonstrate by way of a Traffic Impact Assessment, prepared in accordance with the Department of Transport and Main Roads Guide to Traffic Impact Assessment, and a consequent construction traffic management plan, that construction and operation of the infrastructure does not compromise the safety and efficiency of existing and future state transport infrastructure, corridors and networks.

The Traffic Impact Assessment is to consider the timing of construction activities, types and volumes of vehicles involved (including construction, operation and workforce traffic), the materials and machinery transported, haulage routes and rail level crossings affected, and if required potential impacts on pavements and structures on haulage routes. For rail level crossings sight distances and queuing standards are to be assessed.

Please also note that you are required to notify the relevant state department for the type of infrastructure proposed, being the Department of Natural Resources Mines and Energy, as outlined by chapter 7, part 1, section 2.3 of the MGR.

For further information please contact Tony Duncan, Infrastructure Designations, on 07 3457 7857 or via email Tony.Duncan@dsdmip.qld.gov.au who will be pleased to assist.

Yours sincerely

Steve Conner
EXECUTIVE DIRECTOR