



PROPOSED GENEX KIDSTON CONNECTION PROJECT

Corridor Selection Report

PREPARED BY

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1 PREFACE

Genex Power (Genex) is seeking to establish a combination solar and hydro pump storage power generation facility in the Far North Queensland region at Kidston, approximately 270km north-west of Townsville. The Kidston Solar Project is proposed to be co-located with the Kidston Pumped Storage Project and will be built on the tailings storage facility of the old Kidston gold mine.

Stage one of the project involves installation of a solar photo voltaic farm with a capacity of 50MW. Once a new transmission line has been built to the site, stage two of the solar project will be developed, which will expand the total capacity of the solar farm to 270MW¹. Additionally, the Hydro Pump Storage Scheme seeks to have a generation capacity of 250MW², providing a cumulative peak total generation capacity in excess of 500MW.

Powerlink has been commissioned by Genex to prepare a Corridor Selection Report (CSR), which identifies a preferred corridor and a preliminary alignment for the construction and operation of a new 275kV transmission line to connect the Kidston facility to Powerlink's existing transmission network, with a connection point being located near the existing Mt Fox communications site along the Ross to Chalumbin 275kV transmission line.

The goal of the CSR is to identify a preferred study corridor within the study area that, on balance, offers the most appropriate location for the proposed 275kV transmission line, taking into account social, economic and environmental factors. The preferred study corridor will be broad and of variable width. The CSR also identifies a preliminary alignment for the potential transmission line within the study corridor to guide further investigation and consultation in subsequent project stages as required.

Should the project to develop a new transmission line proceed, a comprehensive Environmental Impact Assessment and associated stakeholder and landholder consultation process would be required before any final decision on an alignment could be taken. Future consultation would build on the work undertaken and relationships established in the development of this CSR.

¹ Genex Power, *The Kidston Solar Project*, 2017, <http://www.genexpower.com.au/the-kidston-solar-project.html> (accessed 9 Jan 2017)

² Genex Power, *The Kidston Hydro Project*, 2017, <http://www.genexpower.com.au/the-kidston-hydro-project.html> (accessed 9 Jan 2017)

2 GLOSSARY

2.1 TERMS

Acronym	Definition
AHD	Australian Height Datum
ASS	Acid Sulfate Soils
CID	Community Infrastructure Designation
CLR	Contaminated Land Register
CSR	Corridor Selection Report
DCSR	Draft Corridor Selection Report
EIS	Environmental Impact Statement
EMR	Environmental Management Register
IDAS	Integrated Development Assessment System
km	Kilometres
kV	Kilovolts
LGA	Local Government Area
m	Metres
MNES	Matters of National Environmental Significance
MVA	Mega Volt Amp
MW	Megawatts
QLD	Queensland
RE	Regional Ecosystem
ToR	Terms of Reference

2.2 ORGANISATIONS / AGENCIES

Acronym	Definition
Genex	Genex Power
Powerlink	Powerlink Queensland
DAF	Department of Agriculture and Fisheries
DEWS	Department of Energy and Water Supply
DEHP	Department of Environment and Heritage Protection
DNPSR	Department of National Parks, Sport and Racing
DNRM	Department of Natural Resources and Mines
DTMR	Department of Transport and Main Roads
Ergon	Ergon Energy
OCOG	Office of Coordinator General
BQ	Building Queensland

3 EXECUTIVE SUMMARY

This report has been prepared in response to a request from Genex Power (Genex) to identify a suitable study corridor for a high voltage electricity transmission connection to its proposed combined solar/hydro pumped storage generation facility at Kidston, approximately 270km north-west of Townsville. To meet the load requirements, the proposed connection solution is a 275kV double circuit transmission line nominally to be constructed using steel towers. A substation with switching capability would be required along Powerlink's existing 275kV Ross to Chalumbin transmission line near Mt Fox (approximately 40km west of Ingham).

This CSR builds on the outcomes of a Draft Corridor Selection Report (DCSR) completed by Powerlink for Genex in May 2016, which assessed three possible corridor options between Mt Fox and Kidston. Based on the outcomes of the DCSR, one study corridor option has been excluded from further assessment, having the highest potential environmental impact of the options assessed. This CSR therefore explores a study area based generally on the two study corridor options remaining from the DCSR.

In accordance with Powerlink's Project Engagement Model and seeking to achieve best practice project engagement, early and targeted consultation with stakeholders and landholders has been undertaken in development of this CSR. Engagement occurred during late 2016 and early 2017 and has provided meaningful insight into the study area to complement the desktop assessment. The process of undertaking engagement involved extensive travel through the study area, further enhancing Powerlink's understanding of the region. Powerlink also gained access to Ergon aerial survey data and undertook a helicopter fly over to better understand the project area.

The assessment undertaken in this CSR has indicated that study corridor option C is preferred (Figure 3). Study corridor option C is defined largely by existing Ergon transmission lines and reduces overall impact to the environment and landholders by virtue of co-locating linear infrastructure.

This CSR has not identified any constraints that would prevent the development of a potential 275kV connection within study corridor option C. The preference for study corridor option C was also confirmed by third party ecological advice, which assessed option C as having the lowest overall impact on matters of State and Federal environmental significance.

Within study corridor option C a preliminary alignment has been identified, which will serve as the basis for further assessment in subsequent project phases should the project proceed and Powerlink be appointed to undertake this work. The preliminary alignment is a 120m wide band around the existing Ergon transmission lines (60m either side of the existing Ergon assets), allowing flexibility for the future 275kV line to co-locate north or south of the existing Ergon lines on a 60m wide easement. A preference for locating the 275kV line north or south of existing lines is not possible at the current level of investigation.

Between approximately Greenvale and Conjuboy Ergon does not have existing lines. In this area the preliminary alignment is dictated by the location of an existing mining interest and the optimal path through large escarpments. The alignment width is maintained at 120m in this area for consistency and flexibility.

This CSR has also investigated the feasibility of a new substation at Mt Fox. It is outside the scope of this report to acquire a site or site option and the available terrain data is not detailed enough to define a firm site preference. However, initial landholder feedback and preliminary investigations indicate that a suitable site is likely to be available. This CSR therefore defines an area of interest for the substation which would be further assessed through a targeted site selection process supported by a terrain survey and more detailed landholder engagement.