Brigalow Peaking Power Plant Project

Application Number: **02031** Commencement Date: **28/09/2023** Status: **Locked**

1. About the project

1.1 Project details

1.1.1 Project title *

Brigalow Peaking Power Plant Project

1.1.2 Project industry type *

Energy Generation and Supply (non-renewable)

1.1.3 Project industry sub-type

LNG/FLNG

1.1.4 Estimated start date *

01/07/2024

1.1.4 Estimated end date *

01/02/2026

1.2 Proposed Action details

1.2.1 Provide an overview of the proposed action, including all proposed activities. *

The Brigalow Peaking Power Plant Project (the Project)(previously referred to as the Brigalow Power Station Project) involves the construction and operation of a power station, electrical switchyards and associated infrastructure. The Project will operate as a peak load generation facility supplying electricity at short notice when there is a requirement in the National Electricity Market in order to support increasing amounts of variable renewable energy. The power plant will have a capacity of approximately 400 MW and be hydrogen capable from commissioning, transitioning to 100% hydrogen fuel over time subject to commercial availability.

The Project will comprise the following key Project elements:

- 12 aeroderivative gas turbines arranged in two ‘power blocks’ of 6 turbines each, with a total generation capacity of approximately 400 MW. Turbines will be hydrogen capable from commissioning, with the proportion of hydrogen in the fuel mix increasing over time subject to commercial availability;
- two (2) switchyards (one for each power block) each comprising 11 kV/33 kV and 33 kV/275 kV transformers and associated electrical infrastructure;
- hydrogen tube trailer tie-in point and manifold for third party supply of hydrogen for commissioning purposes;
- a standby diesel generator for turbine black starts in the event of grid failure;
- storage tanks and other water management infrastructure;
- stormwater basins;
- diesel fuel storage tanks and truck unloading facilities;
- construction and maintenance laydown areas;
- ancillary site facilities and infrastructure including access tracks and an administration building comprising a small workshop, common area, bathrooms and associated car parking; and
- upgrades to Whyalla Road and the Banana Bridge Road/Whylla Road intersection to facilitate safe site access.

It is proposed to connect the Project to the Banana Bridge Substation (on the existing Kogan Creek Power Station site) via a 275 kV overhead transmission line. A new lateral gas pipeline and gas receiving station will also be required to deliver gas for the Project. The transmission line and gas supply infrastructure will be developed separately by third party entities and will be subject to separate approval processes. Therefore, this referral does not consider the connection infrastructure as part of this action.

The Brigalow Power Station will be located opposite the existing Kogan Creek Power Station, in the north-eastern portion of Lot 2 RP176346 ('the Project site'), approximately 5 km north of Kogan, Queensland. **The total area of the Project site is 100.43 ha. The Disturbance footprint is 15.7 ha.**

The activities proposed as part of the development of the Brigalow Peaking Power Plant Project include:

- Vegetation clearing for all infrastructure and laydown areas (15.7 ha total)
- Upgrades to Whyalla Road (including clearing of *Acacia*-dominated regrowth vegetation within existing road verges to accommodate a 12-metre wide sealed carriageway)
- Site establishment and earthworks, including moderate levels of cut and fill to achieve necessary design levels across the Project site
- Preparation and construction of foundations
- Trenching for underground utilities and installation of services such internal (gas and hydrogen) pipelines, stormwater and drainage systems, water and sewer reticulation and electrical cables
- Construction of internal roadworks and hardstand areas
- Civil, electrical and mechanical construction activities including installation of turbines (95% pre-assembled in factory prior to delivery) and construction of electrical switchyards
- Connection to a lateral gas pipeline (to be constructed, owned and operated by a third party)
- Commissioning and testing
- Operation of the power station for approximately 25 years, commencing in mid to late 2026 after which the turbines and associated infrastructure will be decommissioned or repurposed where possible.

1.2.2 Is the project action part of a staged development or related to other actions or proposals in the region?

Yes

1.2.3 Is the proposed action the first stage of a staged development (or a larger project)?

Yes

1.2.5 Provide information about the staged development (or relevant larger project).

Gas Pipeline

Natural gas for the operation of the Brigalow Peaking Power Plant will be supplied via a lateral connection to APA's Roma to Brisbane Pipeline, approximately 20 km to the south of the Project site which will be constructed specifically to support the Project. The supply pipeline will be developed, owned and operated by APA who are currently undertaking preliminary design activities.

To enable independent operation of the two components, approvals for the pipeline will be sought separately under Queensland's *Petroleum and Gas (Production and Safety) Act 2004.* The pipeline will also be referred separately to the Commonwealth for consideration of impacts on Matters of National Environmental Significance protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). However, the two elements are interdependent and if approvals for the pipeline cannot be obtained it is unlikely that the power plant would be constructed unless an alternative gas supply can be secured.

Site Access

Upgrades to Whyalla Road and the intersection with Banana Bridge Road will be required to facilitate safe site access for industrial vehicles. It is likely these upgrades will be accommodated within existing cleared areas in the designated road reserves however, minor clearing of remnant native vegetation may be required which is not considered as part of the referred action.

1.2.6 What Commonwealth or state legislation, planning frameworks or policy documents are relevant to the proposed action, and how are they relevant? *

Queensland Energy and Jobs Plan

The Queensland Energy and Jobs Plan (the Plan), released in September 2022, sets targets for 70% of Queensland's energy needs be met from renewable sources by 2032 and 80% by 2035. The Plan sets out the following vision for Queensland's electricity system in 2035:

- At least 25 GW new and existing renewable energy.
- Gladstone grid reinforcement to support heavy industry to switch to renewable energy and decarbonise their operations.
- All publicly-owned coal-fired power stations operating as clean energy hubs by 2035, supported by a legislated Job Security Guarantee for energy workers.
- Two new world-class pumped hydro projects that together could deliver up to 7 GW of long duration storage.
- Around 1,500 km of new high voltage backbone transmission to move more power around the state.
- Up to 3 GW of low to zero emissions gas generation for periods of peak demand and backup security.
- A smarter grid to support over 11 GW of rooftop solar and around 6 GW of batteries in homes and businesses.

As renewable energy (i.e. wind and solar) is variable in nature, it needs to be 'firmed' meaning it must be stored when available and discharged when it is needed. The concept of 'firming' means matching the variable output of renewable generators to instantaneous demand, which may occur via battery storage or fast start 'dispatchable' generation, primarily gas-fueled generators, that can be switched on as required to meet demand.

The Queensland SuperGrid Infrastructure Blueprint which supports the Plan, recognises that Queensland will need at least 6,000 MW of long duration storage complemented by approximately 3,000 MW of grid-scale storage and up to 3,000 MW of new low-to-zero emissions gas-fueled plant to cover so-called 'dunkelflaute' conditions (times when little to no renewable energy generation from wind or solar is possible).

In the short-term, blending hydrogen with natural gas will provide lower emissions gas while in the long-term the objective is to shift towards renewable hydrogen (a zero emissions gas) to provide dispatchable power. The Plan specifically identifies a new hydrogen-ready gas peaking power station at Kogan Creek to be developed by CS Energy as a key Project to ensure energy reliability for Queensland's industrial and mining sectors. Development of the Project at this location is also consistent with commitments under the Plan regarding the redevelopment of existing coal-fired generation sites as Clean Energy Hubs.

Other legislation and policy

A summary of the applicable Commonwealth and State legislation, policy and guidelines are provided and further detail can be found at **Section 2 of the EAR.** These include:

Commonwealth legislation

- *Environment Protection and Biodiversity Conservation Act 1999* - MNES (listed threatened ecological communities, threatened flora and fauna species) are known and predicted to occur in the Project Footprint. This referral has been prepared in accordance with Significant Impact Guidelines 1.1, the Referral Guideline for 14 Birds Listed as Migratory and consideration of the EPBC Act Environmental Offsets Policy.

State legislation

- *Planning Act 2016* – the Project requires a development approval for a material change of use, vegetation clearing (operational works) and an Environmental Authority to operate an electricity generation facility (environmentally relevant activity).
- *Environmental Offsets Act 2014* – where applicable offsets for Matters of State Environmental Significance will be provided. Offsets may be required through the Planning Act process.
- *Environmental Protection Act 1994* – an Environmental Authority is required to operate an electricity generation facility.
- *Nature Conservation Act 1992* –a low-risk Species Management Program (SMP) is in place to authorise impacts to animal breeding habitat for least concern species.
- *Aboriginal Cultural Heritage Act 2003* - requires anyone who carries out a land-use activity to exercise a cultural heritage duty of care by taking all reasonable and practical measures to ensure their activity does not harm Aboriginal cultural heritage. The Project will be undertaken in accordance with the existing Cultural Heritage Management Agreement held with the relevant Indigenous Party.
- *Biosecurity Act 2014* - Field ecology surveys have identified the presence of pest plants and animals, including those with classifications under the Biodiversity Act. Weeds listed as weeds of national environmental significance were also noted during survey activities. Management and mitigation measures and plans will be developed to avoid the spread of weed and pest species.

Local Planning Scheme - Western Downs Regional Planning Scheme

The Project is considered under the Planning Scheme and Council is the Assessment Manager for approvals under the planning scheme and the Planning Act.

1.2.7 Describe any public consultation that has been, is being or will be undertaken regarding the project area, including with Indigenous stakeholders. Attach any completed consultation documentations, if relevant. *

CS Energy has well established relationships with the local community and stakeholders in the region through the operations of the Kogan Creek Power Station. CS Energy is leveraging this to undertake both targeted and broadscale engagement and communications for the Project. A project website and FAQ has also been established.

Consultation with the Traditional Owners, the Barunggam is managed through the existing Cultural Heritage Management Plan (CHMP) for the Kogan Creek Mine and Power Station. This has involved two cultural surveys of the site and the identification of areas of potential cultural significance (refer to section 3.3.2 for further details). Project design has considered the outcomes of this process, and engagement with the Barunggam remains ongoing as development progresses.

1.3.1 Identity: Referring party

Privacy Notice:

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1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details

ABN/ACN	75637138008
Organisation name	ATTEXO GROUP PTY LTD
Organisation address	4006 QLD

Referring party details

Name	Kate Hourigan
Job title	Principal Environmental Planner
Phone	0466618357
Email	Kate.Hourigan@attexo.com.au
Address	T.C. Beirne Building, Level 4, 315 Brunswick Street, Fortitude Valley, QLD 4006

1.3.2 Identity: Person proposing to take the action

1.3.2.1 Are the Person proposing to take the action details the same as the Referring party details? *

No

1.3.2.2 Is Person proposing to take the action an organisation or business? *

Yes

Person proposing to take the action organisation details

ABN/ACN	74659177385
Organisation name	CSE H2 PTY LTD
Organisation address	4006 QLD

Person proposing to take the action details

Name	Andrew Wilson
Job title	Future Energy Development Lead
Phone	+61 7 3854 7521
Email	awilson1@csenergy.com.au
Address	PO Box 2227, Fortitude Valley BC, Qld, 4006

1.3.2.14 Are you proposing the action as part of a Joint Venture? *

No

1.3.2.15 Are you proposing the action as part of a Trust? *

No

1.3.2.17 Describe the Person proposing the action's history of responsible environmental management including details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the Person proposing to take the action. *

Yes, CS Energy Limited and all its subsidiary companies (including CSE H2 Pty Ltd) have a track record of responsible environmental management.

There has been a single (2018) Penalty Infringement Notice (PIN) under the Queensland *Environmental Protection Act 1994* issued to CS Energy in the last 10 years for inadequate erosion and sediment control at the Kogan Creek Mine. The issue was remedied, and no further enforcement action has been necessary.

CS Energy is working with the Queensland Department of Environment and Science (DES) to manage legacy issues associated with the use of fire-fighting foams containing perfluroalkyl and polyfluoroalkyl substances (PFAS) at the Callide Power Station site. A final report on the environmental evaluation process is anticipated in March/April 2024.

There are also ongoing legacy issues associated with seepage quality from the Callide Ash Dam B that are managed in accordance with an ash dam management plan that includes triggers for action when the dam gets to certain levels. In November 2021, the dam reached a level that triggered reporting to DES as a result of heavy rainfall throughout the wet season and the site water recycling plant being temporarily offline. Over the summer months CS Energy carried out a range of measures to reduce the water levels and by February 2022 CS Energy had met all of the conditions of the Environmental Protection Order (EPO), which DES subsequently closed.

Environmental performance is reported annually and available within the annual reports on CS Energy's website - link included.

1.3.2.18 If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

CSE H2 Pty Ltd is a wholly owned subsidiary of CS Energy Limited and operates under the environmental policy and planning framework of its parent company.

CS Energy and its subsidiaries, including CSE H2 Pty Ltd are committed to operating with genuine care for the environment, actively engaging with our stakeholders and innovating as we transition to a cleaner energy future. The primary environment target enshrined in the company's Environmental Policy and Planning Framework is zero Significant Environmental Incidents, which are incidents that have a significant impact on the environment or result in enforcement action by a regulator. This target was achieved in FY2023.

CS Energy and its subsidiaries also use an environmental management system (EMS) that meets the international environmental standard ISO 14001:2015 across its operations. The EMS Manual (see Section 5.3, page 11) sets out procedures, roles and responsibilities for:

- Identification of environmental issues
- Development of environmental planning processes
- Environmental communications and training
- Environmental incident management
- Environmental legal compliance
- Environmental monitoring and measurement
- Environmental auditing, review and performance evaluation

Copies of CS Energy's **Environmental Policy** and **EMS Management System Manual,** which govern the operations of its subsidiary companies including CSE H2 Pty Ltd, are attached to this referral.

1.3.3 Identity: Proposed designated proponent

1.3.3.1 Are the Proposed designated proponent details the same as the Person proposing to take the action? *

Yes

Proposed designated proponent organisation details

ABN/ACN	74659177385
Organisation name	CSE H2 PTY LTD
Organisation address	4006 QLD

Proposed designated proponent details

Name	Andrew Wilson
Job title	Future Energy Development Lead
Phone	+61 7 3854 7521
Email	awilson1@csenergy.com.au

Address	PO Box 2227, Fortitude Valley BC, Qld, 4006

1.3.4 Identity: Summary of allocation

Confirmed Referring party's identity

The Referring party is the person preparing the information in this referral.

ABN/ACN	75637138008
Organisation name	ATTEXO GROUP PTY LTD
Organisation address	4006 QLD
Representative's name	Kate Hourigan
Representative's job title	Principal Environmental Planner
Phone	0466618357
Email	Kate.Hourigan@attexo.com.au
Address	T.C. Beirne Building, Level 4, 315 Brunswick Street, Fortitude Valley, QLD 4006

Confirmed Person proposing to take the action's identity

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	74659177385
Organisation name	CSE H2 PTY LTD
Organisation address	4006 QLD
Representative's name	Andrew Wilson
Representative's job title	Future Energy Development Lead
Phone	+61 7 3854 7521
Email	awilson1@csenergy.com.au
Address	PO Box 2227, Fortitude Valley BC, Qld, 4006

Confirmed Proposed designated proponent's identity

The Person proposing to take the action is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

1.4 Payment details: Payment exemption and fee waiver

1.4.1 Do you qualify for an exemption from fees under EPBC Regulation 5.23 (1) (a)? *

No

1.4.3 Have you applied for or been granted a waiver for full or partial fees under Regulation 5.21A? *

No

1.4.5 Are you going to apply for a waiver of full or partial fees under EPBC Regulation 5.21A?

No

1.4.7 Has the department issued you with a credit note? *

No

1.4.9 Would you like to add a purchase order number to your invoice? *

No

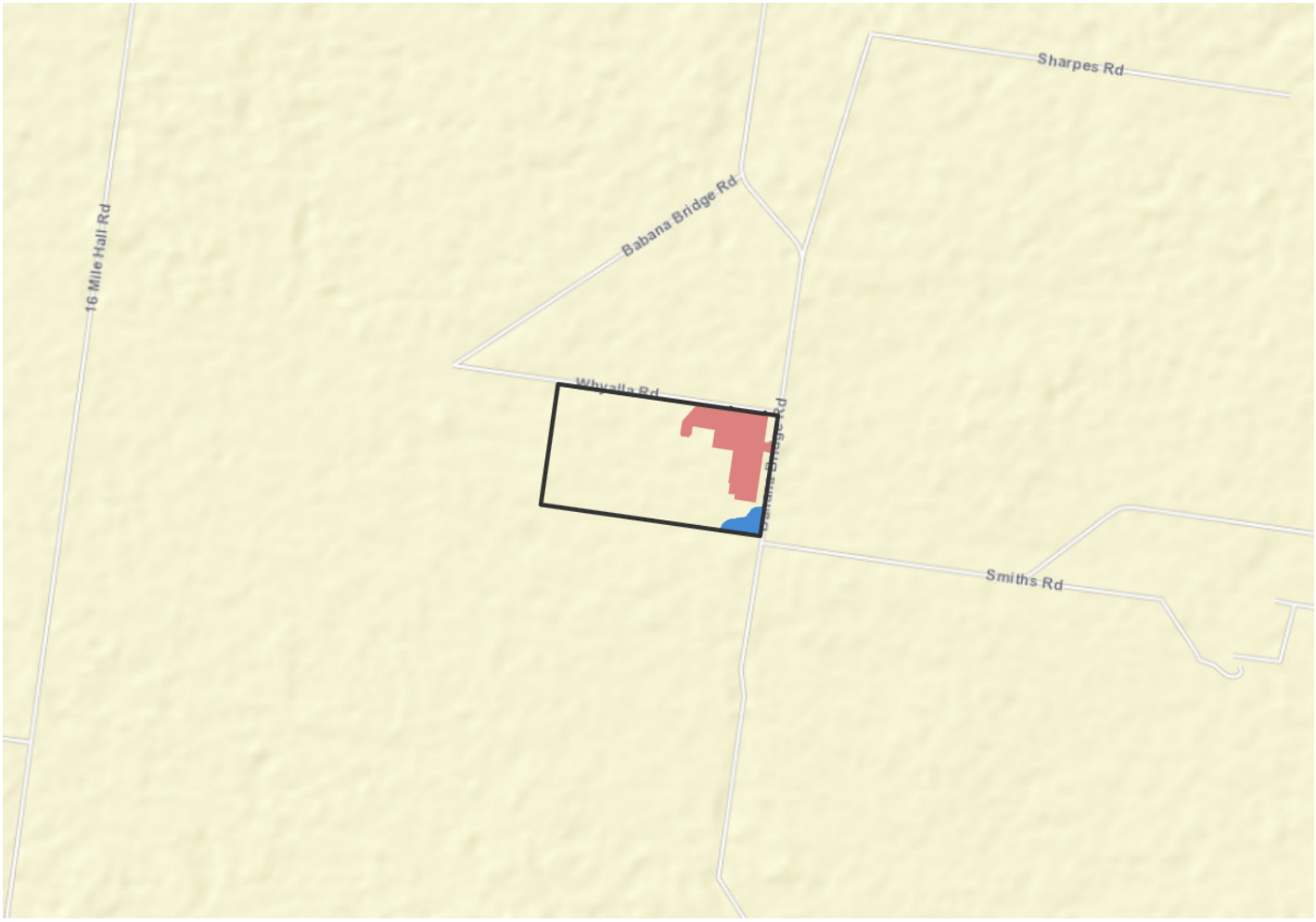
1.4 Payment details: Payment allocation

1.4.11 Who would you like to allocate as the entity responsible for payment? *

Person proposing to take the action

2. Location

2.1 Project footprint


Sharpes Rd
16 Mile Hall Rd
Babana Bridge Rd
Whyalla Rd
Babana Bridge Rd
Smiths Rd

2.2 Footprint details

2.2.1 What is the address of the proposed action? *

Corner of Banana Bridge Road and Whyalla Road, Hopeland, Queensland

2.2.2 Where is the primary jurisdiction of the proposed action? *

Queensland

2.2.3 Is there a secondary jurisdiction for this proposed action? *

No

2.2.5 What is the tenure of the action area relevant to the project area? *

The action is proposed on Lot 2 RP176346 held in freehold tenure by Kogan Creek Power Station (a subsidiary company of CS Energy Limited). The Project footprint extends in the Council owned road reserve (Whyalla Road) in two locations to all for access to Lot 2.

3. Existing environment

3.1 Physical description

3.1.1 Describe the current condition of the project area's environment.

Project Location and Land use/zoning

The Project is located on land owned by CS Energy at Hopeland, approximately 13 km north of Kogan and 22 km south-east of Chinchilla, Queensland. The plant will be located opposite the existing Kogan Creek Power Station (also owned and operated by CS Energy). The Project site is located in a Rural Zone under the WDRC Planning Scheme. Land surrounding the site is zoned Rural and Community Facilities.

The site is also designated as a Special Industry Area under the Strategic Framework section of the Planning Scheme. Designated Special Industry Areas indicate WDRC's preferred location for high impact and special industry land uses (including power generation) that have the potential to generate off-site impacts and require separation distances from sensitive land uses.

The Project site is preferred for development over CS Energy's other landholdings within the designated Special Industry Area due to its location in close proximity to the existing transmission network, away from flood-prone land and areas of higher ecological value associated with the Condamine River, and away from areas flagged for future mining for the Kogan Creek Mine.

Site Description

The Project site is generally flat and supports predominantly remnant native vegetation. A review of historical aerial photography in QImagery indicates a long history of clearing and disturbance:

- Approximately the western half of the Project site was completely cleared by 1959 and maintained as cleared land until the 1980s.

- In the 1970s the central and eastern portions of the site were substantially cleared of vegetation, and quarrying occurred in the far north-eastern portions of the site.
- The site appeared to be actively managed in the early 1990's but has subsequently been left to regenerate with limited evidence of land management. Most of the vegetation on the site is regrowth vegetation of around 30 years of age, with some small portions of the site not cleared since at least the 1950s.

There is a minor drainage line in the south-eastern corner of the site which is moderately disturbed and subject to minor scour as a result of inflows from the culvert under Banana Bridge Road.

The Project site supports predominantly Category B remnant vegetation with a smaller area of Category C high value regrowth mapped in the centre of the site in accordance with Queensland *Vegetation Management Act 1994*. The vegetation communities within the disturbance footprint are dominated by woodland eucalypt species, with *Allocasuarina luehmannii* and *Acacia* species at the low tree layer. Further information on the mapped vegetation communities can be found at **Section 4.1 of the Ecological Assessment Report (EAR) (see Attachment 2A)**.

3.1.2 Describe any existing or proposed uses for the project area.

Existing Land Use

The Project site has historically been cleared with large areas of clearing maintained for 30 years. Excavation has occurred within the Project Area, with material removed from site for other purposes not known or related to this development. Since 1990, the Project site has been left to revegetate, with no activities currently occurring across the site.

Surrounding land uses are predominantly rural and industrial comprising the following in proximity to the site:

- Kogan Creek Power Station – the power station and associated coal mine owned and operated by Aberdare Collieries (a subsidiary of CS Energy) is located on the opposite side of Banana Bridge Road.
- Western Downs Substation – located on the property immediately to the south of the Project site. Powerlink also own the lots to the south and west of the substation.
- Western Downs Solar Farm – approved and under construction, located to the west of the proposed development.
- Rural and rural residential properties – located to the north (on the opposite side of Whyalla Road) and south of the Project site.
- CSG development – properties owned by CSG developer Arrow Energy are located to the north (Lot 30 DY478) and north-west of the site (Lot 32 SP232241). These properties are within a 10 km exclusion zone around the former Linc Energy coal gasification site imposed by Arrow's Environmental Authority.

Proposed Land Use

The proposed land use within the Project site consists of the Project described in Section 1 of this referral, namely components for a power station, electrical switchyards and ancillary infrastructure. These uses are supported by the local Planning Scheme's Special Industry Area zoning and aligns with the activities occurring and proposed adjacent to the Project site.

The Project site offers strategic advantages over CS Energy's other landholdings in and around Kogan Creek Power Station as it is located:

- on land owned by CS Energy in close proximity to existing transmission networks. This avoids the need to establish and clear longer corridors for transmission infrastructure.
- away from flood-prone land and areas of higher ecological significance associated with Kogan Creek and the Condamine River.
- away from areas flagged for future mining associated with the Kogan Creek Power Station.

Adjoining areas owned by third party entities are either under development (e.g. Western Downs Solar Farm, coal seam gas), flagged for future development (e.g. in and around Powerlink's Western Downs Substation), subject to existing industrial or agricultural land uses or under native vegetation of potentially higher conservation significance.

3.1.3 Describe any outstanding natural features and/or any other important or unique values that applies to the project area.

There are no outstanding natural features within or in proximity to the Project site. The nearest natural features are Dalby Nature Refuge located 17.90 km south-east and the Chinchilla Rifle Range Nature Refuge 16.90km north-west.

3.1.4 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

The Project site is relatively flat with a gentle (1-2%) slope from north-east to south-west. The highest point of the main Project footprint is in the north-east corner (approximately 385 m AHD at the intersection of Whyalla Road and Banana Bridge Road) with the lowest points at the southern end of the power island (approximately 376 m AHD) and western edge of the construction laydown area (approximately 375 m AHD).

3.2 Flora and fauna

3.2.1 Describe the flora and fauna within the affected area and attach any investigations of surveys if applicable.

Flora

Flora surveys were undertaken between 2-4 November 2022 across the whole Project site and within the Disturbance Footprint. The purpose of these surveys was to verify the location, extent and condition of vegetation across the Project area according to the Queensland Regional Ecosystem framework and criteria for threatened ecological communities (TECs) listed under the EPBC Act, where applicable, and to identify preferred habitat types for threatened flora species.

A total of 112 flora species were recorded on the Project site, including one listed as 'special least concern' (the Tiger Orchid, *Cymbidium canaliculatum*) and 7 invasive flora species. The invasive flora included two species listed as Category 3 restricted matter under Queensland's *Biosecurity Act 2014* - Prickly Pear (*Opuntia stricta*) and Velvety Tree Pear (*Opuntia tomentosa*). However, these species were sparse and weed cover is generally low.

The PMST identified 5 threatened ecological communities (TEC) as potentially occurring in the search area. Ground-truthing vegetation did not confirm any of these RE types for the Project site.

The PMST identified 7 threatened flora species as potentially occurring in the search area. No MNES flora were recorded or are considered likely to occur on the Project site.

Further information on the methodology and results of the flora surveys can be found at **Section 3.2.2, 4.2, 4.3 and Section 8.1 of the Brigalow Power Station EAR (see Attachments 2A, 2B and 2C)**.

Fauna

Fauna surveys were undertaken in autumn between 17-21 April 2023 across the Project site and Disturbance Footprint. A total of 103 fauna species were recorded, including 11 mammals, 76 birds, 11 reptiles and 5 amphibians. There appears to be a relatively low density of introduced fauna, with only one (cat) detected during fauna surveys.

Fauna surveys included a number of methods to target species within the Brigalow Belt Bioregion. Based on a likelihood of occurrence and results from the fauna survey, habitat for two MNES were determined as known to occur within the Project site. These species are:

- Fork-tailed swift (*Apus pacificus*) – listed as Migratory – call recorded during autumn survey
- Brigalow woodland snail (*Adclarkia cameroni*) – listed as Endangered – recorded at drainage line in the south-eastern corner of Project Area during autumn survey.

The Project site also contains eucalypt woodland that is potential habitat for Koala (*Phascolarctos cinereus*). Further information on the fauna survey effort and results can be found at **Section 3.2.3, 5.7 and 8.1 of the EAR (see Attachments 2A, 2B and 2C)**.

3.2.2 Describe the vegetation (including the status of native vegetation and soil) within the project area.

The Project site is located approximately 5 km north of Kogan in the Inglewood Sandstone sub-region of the Brigalow Belt Bioregion. It is generally flat, with a gentle slope from north-east to south-west. Ecological values described for the Project site have been derived from a combination of the desktop and field assessments described above. The site's ecological values are heavily influenced by its clearing history, with most areas having been cleared and used for agricultural purposes between 1950 and the 1990s.

Geology

The Project site is located on the western boundary of the highly productive Condamine River Alluvial Aquifer and is underlain by the Springbok Sandstone formation, which forms part of the Great Artesian Basin.

Connectivity

Although the Project site is predominantly remnant vegetation, the property is not well connected. The Project site does not connect directly to either statewide or regional biodiversity corridors nor does the Project site and land parcels in the immediate area provide landscape scale connectivity given the historical and current land uses that have severely fragmented these tracts of vegetation.

The existing Kogan Creek Power Station, Kogan Creek Mine and associated access roads and linear infrastructure have fragmented remaining habitat in the locality and introduced a high level of vehicular activity as well as lighting and noise impacts. This is likely to have functionally isolated some patches of habitat. This degree of fragmentation is likely to have adversely impacted fauna movement and population dynamics within the patch. In particular the following impacts are expected to have occurred:

- Functional isolation of the patch for some fauna groups such as gliders, which although theoretically capable of crossing large canopy gaps, rarely glide and show a strong aversion to moving across cleared lands.
- Reduced diversity and abundance of bird and small mammal species. Research has shown that remnants of less than 10 ha in area support a simplified bird community with few species occurring and dominance by edge specialists such as Noisy Miners.

Loss of forest interior species of birds, reptiles, mammals and amphibians which depend on large, interconnected stands of habitat and show an aversion to forest edges.

Vegetation

A description of the applicable/present vegetation communities are as follows:

- RE 11.7.4: *Eucalyptus decorticans* and/or *Eucalyptus* spp., *Corymbia* spp., *Acacia* spp., *Lysicarpus angustifolius* woodland on Cainozoic lateritic duricrust.
- RE 11.5.20/11.5.1: *Eucalyptus moluccana* and/or *E. microcarpa* and/or *E. woollsiana +/- E. crebra* woodland on Cainozoic sand plains / *Eucalyptus crebra* and/or *E. populnea, Callitris glaucophylla, Angophora leiocarpa, Allocasuarina luehmannii* woodland on Cainozoic sand plains and/or remnant surfaces.

Vegetation communities mapped for the Project site can be seen in **Figure 5.3 of the EAR (see Attachment 2B)**.

Habitat Types

Habitat is characterised by eucalypt woodlands to open woodlands dominated by Gum-topped Box (*Eucalyptus moluccana*) in the west of the Project site and/or ironbark species in the centre and east. Due to historical clearing, in many parts of the site the ecologically dominant layer now comprises dense regrowth of white cypress pine and bulloak, with scattered Eucalypts occurring as emergent trees. Associated microhabitat features include hollow-bearing trees, stag trees and fallen timber.

Habitats include:

- A minor drainage line in the south-east of the site fringed by *Eucalyptus tereticornis* with a high abundance of leaf litter around the bases of these and coarse woody debris littering the ground storey.
- Mixed open eucalypt woodland with grassy understory.
- A single farm dam in the south-west with evidence of historical use by cattle and other macropods and very sparse ground storey and shrub layer comprising of *Chenopodaceae* species.

3.3 Heritage

3.3.1 Describe any Commonwealth heritage places overseas or other places recognised as having heritage values that apply to the project area.

The proposed action does not have a Commonwealth heritage place overseas or other places recognised as having heritage value apply to the Project site.

3.3.2 Describe any Indigenous heritage values that apply to the project area.

CS Energy has an existing cultural heritage management agreement (CHMA) with the Barunggam People. The Project site will be subject to the CHMA. Surveys were conducted by the Barunggam of the entirety of Project Area (Lot 2) between 27 February and 1 March 2023. A number of sites were identified. The proposed Disturbance Footprint and project layout/design has been designed to avoid all identified sites, including a buffer of all values by 50m.

Further management actions will be implemented during construction to mitigate the risk of impacts to Indigenous heritage values in accordance with the duty of care obligations under the Queensland *Aboriginal Cultural Heritage Act 2003.*

3.4 Hydrology

3.4.1 Describe the hydrology characteristics that apply to the project area and attach any hydrological investigations or surveys if applicable. *

The Project site forms part of the Kogan Creek catchment which runs into the Condamine River approximately 4 km to the north-east. The Condamine system ultimately drains into the Murray-Darling Basin, which supports a number of Ramsar wetland sites in western New South Wales and South Australia that were identified in the PMST search. The closest of these sites (Narran Lakes near Brewarrina) is approximately 400-500 km downstream of the Project. Given this distance, hydrological connectivity between these features is considered limited.

There are no watercourses or drainage features mapped as occurring on the Disturbance Footprint. However, there is an unmapped minor ephemeral drainage line in the south-eastern corner near Banana Bridge Road. This area supports some larger trees including forest red gum (*Eucalyptus tereticornis*). One small man-made farm dam is present within the Project site, with evidence of historical use by cattle (low to no vegetation cover, high turbidity).

4. Impacts and mitigation

4.1 Impact details

Potential Matters of National Environmental Significance (MNES) relevant to your proposed action area.

EPBC Act section	Controlling provision	Impacted	Reviewed
S12	World Heritage	No	Yes
S15B	National Heritage	No	Yes
S16	Ramsar Wetland	No	Yes
S18	Threatened Species and Ecological Communities	Yes	Yes
S20	Migratory Species	No	Yes
S21	Nuclear	No	Yes

EPBC Act section	Controlling provision	Impacted	Reviewed
S23	Commonwealth Marine Area	No	Yes
S24B	Great Barrier Reef	No	Yes
S24D	Water resource in relation to large coal mining development or coal seam gas	No	Yes
S26	Commonwealth Land	No	Yes
S27B	Commonwealth Heritage Places Overseas	No	Yes
S28	Commonwealth or Commonwealth Agency	No	Yes

4.1.1 World Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.1.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.1.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

In accordance with the Protected Matter Search Tool report (generated 3 October 2023, see **Attachment 3**), there are no World Heritage areas within 10km of the Project site. The activities proposed as part of the action and subsequent impacts identified in **Section 7.0 of the Brigalow Power Station EAR (see Attachment 2B)** will not have direct or indirect impacts on World Heritage as there are no World Heritage properties located in or near the Project site.

4.1.2 National Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.2.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.2.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

In accordance with the Protected Matter Search Tool report (generated 3 October 2023), there are no National Heritage areas within 10km of the Project site. The activities proposed as part of the action and subsequent impacts identified in **Section 7.0 of the Brigalow Power Station EAR (see Attachment 3)** will not have direct or indirect impacts on National Heritage.

4.1.3 Ramsar Wetland

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Ramsar wetland
No	No	Banrock Station Wetland Complex
No	No	Narran Lake Nature Reserve
No	No	Riverland
No	No	The Coorong, and Lakes Alexandrina and Albert Wetland

4.1.3.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.3.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The closest of the Ramsar sites identified by the PMST search (Narran Lakes near Brewarrina) is approximately 400-500 km downstream of the Project with the other sites in excess of 1,000 km downstream. Given this distance and the lack of any significant drainage features on the Project site, hydrological connectivity between these features is considered limited. The scale of the Project and the nature of the anticipated emissions from the Project site (treated stormwater only) means that is highly unlikely to result in impacts this far downstream.

4.1.4 Threatened Species and Ecological Communities

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Threatened species

Direct impact	Indirect impact	Species
No	Yes	Adclarkia cameroni
No	No	Adclarkia dulacca
No	No	Anomalopus mackayi
No	No	Aphelocephala leucopsis

Direct impact	Indirect impact	Species
No	No	Cadellia pentastylis
No	No	Calidris ferruginea
No	No	Calyptorhynchus lathami lathami
No	No	Chalinolobus dwyeri
No	No	Climacteris picumnus victoriae
No	No	Dasyurus hallucatus
No	No	Delma torquata
No	No	Dichanthium setosum
No	No	Egernia rugosa
No	No	Erythrotriorchis radiatus
No	No	Falco hypoleucos
No	No	Furina dunmalli
No	No	Geophaps scripta scripta
No	No	Grantiella picta
No	No	Hemiaspis damelii
No	No	Hirundapus caudacutus
No	No	Homopholis belsonii
No	No	Lathamus discolor
No	No	Lepidium monoplocoides
No	No	Nyctophilus corbeni
No	No	Petauroides volans
No	No	Petaurus australis australis
Yes	Yes	Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)
No	No	Pteropus poliocephalus
No	No	Rostratula australis
No	No	Stagonopleura guttata
No	No	Turnix melanogaster
No	No	Xerothamnella herbacea

Ecological communities

Direct impact	Indirect impact	Ecological community
No	No	Brigalow (Acacia harpophylla dominant and co-dominant)
No	No	Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions
No	No	Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland

Direct impact	Indirect impact	Ecological community
No	No	Poplar Box Grassy Woodland on Alluvial Plains
No	No	Weeping Myall Woodlands

4.1.4.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.4.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

The primary impact associated with the Project is the clearing of 15.73 ha of remnant eucalypt woodland. This will result in a reduction in area of habitat available across the Project site. Potential impacts associated with this clearing and other Project activities may include:

- Loss of breeding places for fauna;
- Fauna injury or mortality during vegetation clearing;
- Fauna injury or mortality due to vehicle strike during construction and/or operation of the Project;
- Wildlife disturbance due to dust, air, noise, light and vibration emissions during construction and operation of the Project;
- Changes in site drainage patterns due to increased hardstand, resulting in changes to microhabitat features.

These impacts on general fauna assemblages also have the potential to affect two MNES species, namely Brigalow Woodland Snail (*Adclarkia cameroni*) and Koala (*Phascolarctos cinereus*) which are addressed below (refer also to **Section 4.2, 4.3 and 4.4 and Appendix A of the EAR (see Attachment 2A)**. Further details on the nature, scale and duration of likely impacts are provided in **Section 7.0 of the Brigalow Power Station EAR (see Attachment 2B)**.

Brigalow Woodland Snail (*Adclarkia cameroni*)

This species was detected in the ephemeral drainage line in the south-eastern corner of the Project site. No direct impacts on this area are proposed. Indirect impacts could theoretically result from changes in overland flow as a result of diversion of stormwater that has a flow-on impact on soil moisture in the drainage line where this species was located, weed invasion and the intensity of fires.

Koala (*Phascolarctos cinereus*).

The Project will also result in the removal of 15.73 ha of eucalypt woodland containing ‘Locally Important Koala Trees’ and ‘Ancillary Habitat Trees’ for Koala. As local records are associated with linear remnants along Kogan Creek and the Condamine River and there is no evidence of Koala using the Project site, this habitat is considered marginal for Koala. Koalas are also susceptible to injury or mortality during clearing and by vehicle strike.

4.1.4.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.4.6 Describe why you do not consider this to be a Significant Impact. *

Koala (*Phascolarctos cinereus*)

Despite detailed ecological survey effort undertaken in accordance with Survey guidelines for Australia’s threatened mammals (DSEWPC 2011a), including methods such as balanced koala scat survey, habitat assessments and spotlighting across 12 locations, Koala was not detected nor was there any evidence of Koala using the Project site. The nearest historical record is from 2009 and located approximately 14 km to the south-east in riparian vegetation along the Condamine River. There are no records within 20 km of the Project site within the last 10 years.

However, the assessment of this species has been conservative due to the presence of vegetation communities within the Project site containing known browse species including gum-topped box (*Eucalyptus moluccana*) and narrow-leaved ironbark (*E. crebra*), a small number of forest red gums (*E. tereticornis*) along the unmapped drainage line in the south-east (adjacent to Banana Bridge Road) and a relatively low abundance of *E. decorticans* which is listed as an ancillary tree species that may be used as alternative forage in the absence of Locally Important Koala Trees (LIKT). The presence of LIKT within the Project site meets habitat requirements described in *A review of koala habitat assessment criteria and methods* (Youngentob et al. 2021).

Vegetation across the majority of the Project site, including the Disturbance Footprint is considered remnant however, due to historical clearing, remains poor quality with a grassy groundstorey. Trees along the drainage line in the south-east corner are larger with a high abundance of leaf litter around the bases of these and coarse woody debris littering the ground storey.

The vegetation described above does not meet the definition of habitat critical to the survival of the species, as discussed in **Section 6.2.1.1 of the Brigalow Power Station EAR (see Attachment 2B)**. The definition of habitat critical to the survival of the species is also described in the species conservation advice (DAWE, 2022). This definition does not apply to the vegetation within the Project Area.

A significant impact assessment for the species has been undertaken in accordance with the EPBC Act Significant Impact Guidelines (DOE 2013). This assessment is presented in **Section 8.2.2 of the Brigalow Power Station EAR (see Attachment 2B)** where it is concluded that overall, the Project is unlikely to have a significant impact on Koala. While the Project site does form part of the broader habitat mosaic, it is not known to support a population of this species and is considered marginal habitat given historical clearing, fragmentation and vegetation quality. As such, this referral has been submitted on the basis that the action will not have a significant impact on Koala.

Brigalow woodland snail (*Adclarkia cameroni*)

The Brigalow woodland snail was recorded from the Project site, in habitat associated with a drainage feature in the south-eastern corner. Survey methodology for this species includes active searches, searching microhabitats including fallen timber, leaf litter, bark and debris. Both juveniles and sub-adults were detected in the drainage feature.

A significant impact assessment for the species has been undertaken in accordance with the EPBC Act Significant Impact Guidelines (DEWHA, 2013). This assessment is presented in **Section 8.2.1 of the EAR** (see **Attachment 2B**) where it is concluded that overall, it is considered that the project impacts are unlikely to have a (indirect) significant impact on Brigalow woodland snail.

Although an indirect impact to the 2.75 ha of habitat has been identified, this is considered unlikely as the Disturbance Footprint has been designed an appropriate distance from the mapped habitat. **Section 6.1.1.1 of the Brigalow Power Station EAR** outlines the regional ecosystems which constitute as habitat critical to the survival of the species, which includes regional ecosystem 11.5.20 (see **Attachment 2B**). As per the conservation and management priorities listed in the conservation advice (TSSC 2016) the Project Footprint has been located a minimum distance of 110 m from the south-east corner of the Project site and a 50m buffer has been placed around all native vegetation and leaf litter where the species was recorded.

With respect to indirect impacts associated with bushfire, potential ignition sources associated with the Project will be managed through the inclusion of cleared Asset Protection Zones surrounding the facility in accordance with the Bushfire Management Plan for the Project (see **Attachment 4**). A Stormwater Management Plan will also be developed for the Project and implemented to minimise changes to the quality and quantity of stormwater leaving the Project site.

4.1.4.7 Do you think your proposed action is a controlled action? *

No

4.1.4.9 Please elaborate why you do not think your proposed action is a controlled action. *

The MNES values of the Project site are limited to:

- habitat for Brigalow Woodland Snail associated with a drainage line in the south-east corner of the lot; and
- relatively low densities of Locally Important Koala Trees and Ancillary Habitat Trees as defined by Youngentob (2021).

The Project design has been modified to avoid any direct impacts on habitat for the Brigalow Woodland Snail, and a 50 m buffer placed around this habitat to minimise potential for indirect impacts on soil moisture and microhabitat features in accordance with Conservation Advice for this species. The actual distance between this habitat and the development is 110 metres. As such, no adverse impacts are expected to result.

While the Project site contains known browse species for Koala, there is no evidence that the Project site or surrounding landholdings support a population of this species. Eucalypt woodlands on the Project site are considered marginal for Koala due to past clearing, with 'habitat critical for survival' restricted to riparian corridors associated with Kogan Creek and the Condamine River which also contain the most recent records for this species. As such, while clearing of 15.73 ha of these woodlands represents a reduction in the overall resource for Koala, it is considered unlikely that this impact will be significant.

As no significant impacts are anticipated as a result of the proposal, it is concluded that the Brigalow Peaking Power Plant Project is not a controlled action under the EPBC Act.

4.1.4.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

Avoidance

Avoidance of potential direct and indirect impacts on MNES has been considered during early project planning stages resulting in a Project Footprint redesign. Informed by desktop and field verification, higher-valued habitat supporting MNES/may be defined as MNES habitat was identified in the south-eastern corner of the Project site. This avoidance area of 2.75ha contains an unmapped drainage feature and associated vegetation and microhabitat supporting MNES; specifically, the area that is confirmed as habitat critical to the survival of the Brigalow woodland snail (*Adclarkia cameroni*). The vegetation associated with the unmapped drainage feature contains scattered larger

forest red gum (*Eucalyptus tereticornis*), a tree species determined as a Locally Important Koala Trees. Refer to response in **Section 4.1.4.6 of this Referral** for further detail on the habitat present within the Project Area for these two MNES species, and the assessment of the impacts from the alternative Project Footprint at **Section 4.3 of this Referral**.

The redesign of the Project Footprint demonstrates avoidance of impact to MNES.

Mitigation

The proposed action may result in impacts as described in **Section 4.1.4.2 of this Referral** and further in **Section 7.0 of the Brigalow Peaking Power Plant EAR (see Attachment 2B)**.

Section 7.0 of the EAR outlines minimisation and mitigation measures for each impact that will be implemented to manage the environmental effects of the proposed action.

Particularly, the following minimisation and mitigation measures are proposed to manage the potential indirect impact to and maintain the quality of the Brigalow woodland snail (*Adclarkia cameroni*) habitat within the Project site:

- Implementation of a 50m buffer between the Project Footprint and the drainage feature providing habitat for species in accordance with Conservation Advice for this species. The 50m buffer is the minimum buffer, with the disturbance footprint located a minimum distance of 110 m away from the drainage line itself, which is considered adequate to prevent significant changes to the microhabitat including the soil moisture content, ground debris and overstorey vegetation.
- Management of overland flow from the project through the implementation of a Stormwater Management Plan (SMP) to ensure the management to changes to the hydrological regime that feeds the drainage feature. The SMP will manage the stormwater flow from the Project Footprint where potential changes / the diversion of flow may alter the soil moisture within the drainage line.
- Management of weed and pest species through a Weed and Pest Management Plan to prevent the introduction and spread of weeds, and weed control (mechanical or chemical) applied, where appropriate.
- Management of bushfire risk through the implementation of a Bushfire Management Plan and a buffer providing separation between Project and surrounding vegetation.

Further detail of how the proposed measures will manage the indirect impact to the species is discussed in the Significant Impact Assessment at **Section 8.2.1 of the EAR (see Attachment 2B)**.

4.1.4.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

Offsets for this action are not proposed as a significant impact to MNES is unlikely to occur.

As an outcome of the site selection process for this project, CS Energy initiated a strategic review of the landholdings in and around the Kogan Creek Green Energy Hub to identify opportunities to support and improve the environmental values of the local area. To implement this initiative, CS Energy is proposing to develop a Biodiversity Management Strategy (BMS) across its landholdings in and around the proposed Peaking Power Plant, which will establish objectives for identifying, protecting and re-establishing natural habitat and habitat connections across the broader precinct. This will involve:

- Description of MNES, MSES and other biodiversity values, including TECs, threatened REs and threatened species habitat (including habitat for Koala);
- Identification of existing and potential ecological corridors, including strategic linkages with the potential to enhance landscape connectivity beyond CS Energy landholdings;
- Key issues and threats to biodiversity such as weeds, pests, rubbish dumping, inappropriate fire regimes, altered hydrology and erosion;
- A restoration strategy which identifies priorities for retention, natural regeneration and restoration, including restoration targets for specific ecosystems;
- Habitat enhancement strategies
- Management zones and associated performance criteria.

The BMS will inform the development of the Kogan Creek Clean Energy Hub and identify strategic land and mitigation measures to be undertaken to protect and enhance MNES, MSES and other biodiversity values across CS Energy's landholdings.

4.1.5 Migratory Species

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Species
No	No	Actitis hypoleucos
No	No	Apus pacificus

Direct impact	Indirect impact	Species
No	No	Calidris acuminata
No	No	Calidris ferruginea
No	No	Calidris melanotos
No	No	Cuculus optatus
No	No	Gallinago hardwickii
No	No	Hirundapus caudacutus
No	No	Motacilla flava
No	No	Myiagra cyanoleuca
No	No	Rhipidura rufifrons

4.1.5.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.5.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

Apus pacificus (Fork-tailed Swift) was recorded on the passive acoustic detection during the fauna surveys undertaken across the Project site. The record was note captured within the Disturbance Footprint. In accordance with the SPRAT species description the species mostly occurs over inland plains but sometimes above foothills, settled areas, treeless grasslands, above rainforests, wet sclerophyll forest, open forest or plantations of pines (Higgins 1999), or in coastal areas over cliffs and beaches. The species exhibits foraging and movement that is completely aerial, with heights from 1-300m above ground (SPRAT 2021).

In accordance with the habitat description, habitat for the species does not occur within the Project site (see **Section 6.3 of the EAR - see Attachment 2B**). However, as the species was recorded via acoustic detection, the species is considered known to occur. A significant impact assessment was undertaken in accordance with the EPBC Act Significant Impact Guidelines (DOE 2013) for migratory species and presented in **Section 8.2.3 of the EAR (see Attachment 2B)**. The assessment concluded that the action is unlikely to have a significant impact on the Fork-tailed Swift due to the species being predominately aerial and the absence of important habitat. It is considered unlikely that the Project Area supports ecologically significant proportion of the population of the species.

Based on an assessment of likelihood of occurrence (attached at **Appendix B of the EAR - see Attachment 2C**) and supported by fauna surveys undertaken in accordance with the *Draft referral guideline for 14 birds listed as migratory species under the EPBC Act*, all other migratory birds (other than Fork-tailed Swift) were not recorded at the site and not considered likely to occur within the Project site.

4.1.6 Nuclear

4.1.6.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.6.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

There are no nuclear activities proposed as part of the action. The activities proposed as part of the action and subsequent impacts identified in **Section 7.0 of the Brigalow Power Station EAR (see Attachment 2B)** do not include nuclear activities, therefore there are no direct or indirect impacts.

4.1.7 Commonwealth Marine Area

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.7.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.7.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

In accordance with the Protected Matter Search Tool report (generated 3 October 2023), there are no Commonwealth marina areas within 10km of the Project site. The activities proposed as part of the action and subsequent impacts identified in **Section 7.0 of the EAR** will not have direct or indirect impacts on Commonwealth marine areas.

4.1.8 Great Barrier Reef

4.1.8.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.8.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

In accordance with the Protected Matter Search Tool report (generated 3 October 2023), the Great Barrier Reef (GBR) is not a triggered controlling provision. The Project site has no hydrological connection to the Great Barrier Reef, instead draining into the Condamine River and ultimately into the Murray-Darling Basin. As such the Project will have no direct or indirect impacts on the GBR.

4.1.9 Water resource in relation to large coal mining development or coal seam gas

4.1.9.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.9.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The proposed action does not include large coal mining development or coal seam gas, therefore does not trigger the water resource controlling provision. The activities proposed as part of the action and subsequent impacts identified in **Section 7.0 of the EAR** will not have direct or indirect impacts on water resourcse.

4.1.10 Commonwealth Land

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.10.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.10.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

In accordance with the Protected Matter Search Tool report (generated 3 October 2023), Commonwealth Lands is not a triggered controlling provision. There is no Commonwealth Land within 10km of the Project site. The activities proposed as part of the action and subsequent impacts identified in **Section 7.0 of the EAR** will not have direct or indirect impacts on Commonwealth Land.

4.1.11 Commonwealth Heritage Places Overseas

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.11.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.11.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

In accordance with the Protected Matter Search Tool report (generated 3 October 2023), Commonwealth Heritage Places overseas is not a triggered controlling provision. There is no Commonwealth Heritage Places overseas within 10km of the Project site. The activities proposed as part of the action and subsequent impacts identified in **Section 7.0 of the EAR** will not have direct or indirect impacts on Commonwealth Heritage Places overseas.

4.1.12 Commonwealth or Commonwealth Agency

4.1.12.1 Is the proposed action to be taken by the Commonwealth or a Commonwealth Agency? *

No

4.2 Impact summary

Conclusion on the likelihood of significant impacts

You have indicated that the proposed action will likely have a significant impact on the following Matters of National Environmental Significance:

None

Conclusion on the likelihood of unlikely significant impacts

You have indicated that the proposed action will unlikely have a significant impact on the following Matters of National Environmental Significance:

- World Heritage (S12)
- National Heritage (S15B)
- Ramsar Wetland (S16)
- Threatened Species and Ecological Communities (S18)
- Migratory Species (S20)
- Nuclear (S21)
- Commonwealth Marine Area (S23)
- Great Barrier Reef (S24B)
- Water resource in relation to large coal mining development or coal seam gas (S24D)
- Commonwealth Land (S26)
- Commonwealth Heritage Places Overseas (S27B)
- Commonwealth or Commonwealth Agency (S28)

4.3 Alternatives

4.3.1 Do you have any possible alternatives for your proposed action to be considered as part of your referral? *

Yes

4.3.2 Do you have an alternative timeline you are proposing for your proposed action? *

No

4.3.3 Briefly describe why an alternate timeline for your proposed action was not possible. *

Under the Queensland Energy and Jobs Plan, the Queensland Government has committed to delivery of the Brigalow Peaking Power Plant Project by 2026 to provide appropriate firming capacity as renewables generation increases.

4.3.4 Do you have an alternative location you are proposing for your proposed action? *

Yes

4.3.6 Do you have alternative activities you are proposing for your proposed action? *

No

4.3.7 Briefly describe why an alternative activity for your proposed action was not possible. *

The Brigalow Peaking Power Plant Project is part of a suite of actions proposed under the Queensland Energy and Jobs Plan as part of Queensland's transition to 80% renewable energy by 2035. It provides ‘firming’ capacity for the grid for intermittent renewables such as wind or solar, ensuring security of supply under so-called ‘dunkelflaute’ conditions. The fast-start capability of the turbines enables them to be deployed to address ‘energy droughts’ due to the storage limitations of other firming technologies (i.e. grid-scale batteries and pumped hydro). As such, the Project as proposed fills a particular ‘niche’ that cannot easily be filled by alternative technologies.

4.3.2 Alternatives: Location


Gulf of Carpentaria
Cairns
Northern Territory
Queensland
AUSTRALIA
Western Australia
South Australia
Perth
Great Australian Bight
New South Wales
Sydney
Adelaide
Canberra
Victoria

4.3.2.1 Describe how the impacts and mitigation measures are different for your alternative location.

Site Selection Process

A broad site selection investigation process was undertaken to determine the most suitable site for project from an environmental and planning perspective, considering avoidance of impacts to both MNES and MSES. CS Energy undertook investigations and ecology surveys across their landholdings within the Kogan Creek Clean Energy Hub to inform this site selection process. Other potential development sites within CS Energy landholdings were not progressed based on the presence of environmental values, including potential MNES values, including:

- Avoidance of Kogan Creek and Condamine River - landholdings adjacent to the Kogan Creek and Condamine River were not pursued due to the proximity to the watercourses and associated values. Values of the watercourses will not be impacted by the proposed action, avoiding potential direct impacts to riparian vegetation and connectivity values.
- Avoidance of Threatened Ecological Communities (TECs) - Poplar Box and Brigalow TEC have been mapped on other landholdings investigated during site selection. These TECs were verified during ecological surveys. The vegetation diagnostics meant the description of the two TECs. The TECs are also associated with the vegetation along the watercourses. By not pursuing the other landholdings, direct impacts (vegetation clearing) to TECs have been avoided.
- Remnant vegetation and potential habitat - other landholdings contained remnant vegetation not previously cleared which will likely constitute as important/higher-valued MNES habitat.
- Cultural heritage - a search of cultural heritage databases indicates that the landholdings are subject to a broad range of cultural heritage finds. The density of cultural heritage values on other landholdings is greater than on the selected site. Potential impacts to cultural heritage values have been avoided (and will be avoided on the selected site through active management and procedures) through the site selection process.

Project Disturbance Footprint selection

After the outcomes of the broader site selection process, the nominated Project site was identified. Detailed environmental and planning assessments were undertaken to identify values and constraints across the Project site. A base-case project design was developed and is shown as the proposed alternative for your proposed action. This polygon represents the alternative Disturbance Footprint within the same Project site subject to this referral. As the proposed alternative location is within the Project site, the existing environment description and identified environmental values in the EAR are relevant to this site. In particular, **Section 4.0 of the Brigalow Power Station EAR (see Attachment 2A)** describes the vegetation values based on desktop analysis and broader ecological values are discussed in **Section 5.0 of the EAR (see Attachment 2B)**.

Of note, an unmapped minor ephemeral drainage line in the south-eastern corner of the Project site near Banana Bridge Road. This area supports some larger trees including forest red gum (*Eucalyptus tereticornis*).

4.3.2.2 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders in relation to the proposed alternative location.

As the proposed alternative location (Disturbance Footprint) is within the same Project site, the consultation described in **Section 1.2.7 of this Referral** incorporates consideration of this Disturbance Footprint.

4.3.2.3 What Commonwealth or state legislation, planning frameworks or policy documents are relevant to the proposed alternative location, and how are they relevant?

In accordance with **Section 1.2.6 of this Referral**, the same Commonwealth, State and Local legislation and planning frameworks would apply if the alternative location was selected.

4.3.4 Alternatives: Impact and mitigation

4.3.4.1 Do these alternatives have a different impact, avoidance, or mitigation measure compared to what you have already provided? *

Yes

4.3.4.2 On World Heritage properties *

No

4.3.4.4 On National Heritage places *

No

4.3.4.6 On the ecological character of a Ramsar wetland *

No

4.3.4.8 Listed threatened species, their habitat, or threatened ecological communities *

Yes

4.3.4.9 Describe how this alternative has different impacts or mitigations from the original proposal relating to listed threatened species, their habitat, or threatened ecological communities. *

The alternative Disturbance Footprint in the south-eastern corner of the Project Area contains higher-valued habitat and additional environmental values/features in comparison to the site selected to proceed.

The alternative location would result in the same potential impacts to MNES as discussed in **Section 4.1 of this Referral**, including:

- indirect impacts on Koala (*Phascolarctos cinereus*).

Differing impacts of the alternative location to the proceeding site is:

- direct impacts on 2.75 ha of Brigalow woodland snail (*Adclarkia cameroni).* The Disturbance Footprint selected, and the subject of this referral, may have indirect impacts on this species (as discussed in **Section 4.1 of this Referral**).

Due to the presence of the unmapped minor ephemeral drainage line in the south-eastern corner of the Project site, the alternative Disturbance Footprint would directly impact on habitat for the Brigalow woodland snail. Habitat characteristics are described as a high abundance of coarse woody debris, leaf litter and moisture content from the drainage line. The habitat within this area has been identified as habitat critical to the survival of the species. Further detail on the species is considered in the significant impact assessment presented in **Section 8.2.1 of the EAR (see Attachment 2B)**.

This alternative location was not selected due to the presence of habitat for the Brigalow woodland snail. The project design was revised and a Disturbance Footprint avoiding the habitat was determined. As well as avoidance of direct impacts to 2.75 ha of habitat, a buffer of 50m has been applied as per the conservation advice management priorities (TSSC 2016).

4.3.4.10 Listed migratory species or their habitat *

No

4.3.4.12 Is a Nuclear action *

No

4.3.4.14 On Commonwealth Marine Areas *

No

4.3.4.16 Taking place in or flowing into the Great Barrier Reef Marine Park *

No

4.3.4.18 Impacts a water resource relating to a coal seam gas or large coal mining development *

No

4.3.4.20 On or near Commonwealth Land *

No

4.3.4.22 On Commonwealth heritage places overseas *

No

4.3.4.24 Action undertaken by the Commonwealth or a Commonwealth Agency *

No

4.3.5 Alternatives: Considered alternatives

4.3.5.1 Do you have any other alternative actions, including not taking the action, that you have considered but are not proposing as part of this referral? *

No

5. Lodgement

5.1 Attachments

1.2.7 Public consultation regarding the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Link	Brigalow Peaking Power Plant https://www.csenergy.com.au/what-we-do/firming-a..			High

1.3.2.17 (Person proposing to take the action) Proposer's history of responsible environmental management

	Type	Name	Date	Sensitivity	Confidence
#1.	Link	Annual Reports https://www.csenergy.com.au/who-we-are/reports-a..			High

1.3.2.18 (Person proposing to take the action) If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 1 - CS Energy Environment Policy - Oct 2021.PDF CS Energy Environment Policy	01/10/2023	No	High
#2.	Document	Att 1A - Environmental Management System EMS Manual.pdf Environmental Management System Manual	10/03/2022	No	High

3.1.1 Current condition of the project area's environment

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 2A - Brigalow Power Station EAR - Part 1.pdf Brigalow Power Station - Ecological Assessment Report - Part 1	18/10/2023	No	High
#2.	Document	Att 2B - Brigalow Power Station EAR - Part 2.pdf Brigalow Power Station EAR - Section 5 to Section 10	18/10/2023	No	High

3.2.1 Flora and fauna within the affected area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 2C - Brigalow Power Station EAR - Appendices.pdf Brigalow Power Station EAR - Appendices	18/10/2023	No	High

4.1.1.3 (World Heritage) Why your action is unlikely to have a direct and/or indirect impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 3 - Protected Matters - MNES layers - October 3rd 2023.pdf Brigalow Power Station - Protected Matters Search Tool Results	03/10/2023	No	Medium

4.1.4.6 (Threatened Species and Ecological Communities) Why you do not consider the direct and/or indirect impact to be a Significant Impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Attachment 4 - Bushfire Hazard Assessment.pdf Bushfire Hazard Assessment and Management Plan	17/08/2023	No	High
#2.	Link	A review of koala habitat assessment criteria and methods https://www.dcceew.gov.au/environment/epbc/publi..			High
#3.	Link	Brigalow Woodland Snail Conservation Advice https:///www.environment.gov.au/biodiversity/thr..			Medium
#4.	Link	Significant Impact Guidelines 1.1 - Matters of National Environmental Significance https://www.dcceew.gov.au/environment/epbc/publi..			High
#5.	Link	Survey guidelines for Australia's threatened mammals: Guidelines for detecting mammals listed as thr https://www.dcceew.gov.au/environment/epbc/publi..			Medium

5.2 Declarations

Completed Referring party's declaration

The Referring party is the person preparing the information in this referral.

ABN/ACN	75637138008
Organisation name	ATTEXO GROUP PTY LTD
Organisation address	4006 QLD
Representative's name	Kate Hourigan
Representative's job title	Principal Environmental Planner
Phone	0466618357
Email	Kate.Hourigan@attexo.com.au
Address	T.C. Beirne Building, Level 4, 315 Brunswick Street, Fortitude Valley, QLD 4006

☑ Check this box to indicate you have read the referral form. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

☑ By checking this box, I, **Kate Hourigan of ATTEXO GROUP PTY LTD**, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

Completed Person proposing to take the action's declaration

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	74659177385
Organisation name	CSE H2 PTY LTD
Organisation address	4006 QLD
Representative's name	Andrew Wilson
Representative's job title	Future Energy Development Lead
Phone	+61 7 3854 7521
Email	awilson1@csenergy.com.au
Address	PO Box 2227, Fortitude Valley BC, Qld, 4006

☑ Check this box to indicate you have read the referral form. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

☑ I, **Andrew Wilson of CSE H2 PTY LTD**, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

Completed Proposed designated proponent's declaration

The Proposed designated proponent is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

- [x] Check this box to indicate you have read the referral form. *

- [x] I would like to receive notifications and track the referral progress through the EPBC portal. *

- [x] I, **Andrew Wilson of CSE H2 PTY LTD**, the Proposed designated proponent, consent to the designation of myself as the Proposed designated proponent for the purposes of the action described in this EPBC Act Referral. *

- [x] I would like to receive notifications and track the referral progress through the EPBC portal. *