Visy Glass Recycling and Manufacturing Facility

Application Number: **01189** Commencement Date: **06/05/2022** Status: **Locked**

1. About the project

1.1 Project details

Project title *

Visy Glass Recycling and Manufacturing Facility

Project industry type *

Waste Management (non-sewerage)

Project industry sub-type

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Estimated start date *

1/09/2022

Estimated end date *

30/06/2024

1.2 Proposed Action details

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

Visy Glass Operations (Australia) Pty Ltd (Visy) proposes to develop a glass recycling and manufacturing facility comprising integrated recycled glass cullet plant (furnace-ready recycled glass), container glass manufacturing facility and finished goods warehouse and distribution centre. The proposed development will initially process approximately 145,000 tonnes per annum of recycled material into furnace-ready cullet and will manufacture approximately 200,000 tonnes (960,000,000 containers) per annum. The project is on Lot 2 on WD4654 and Lot 2 SP189558 which has existing Visy manufacturing facilities and other industrial businesses.

Visy's existing glass manufacturing operation site in South Brisbane is being sought for acquisition by government in association with hosting the Brisbane Olympics in 2032. The site has been a glass manufacturing operation since at least 1920. One of the two existing glass furnaces, which produce molten glass and are therefore fundamental to glass production, is approaching end-of-life and must undergo a complete rebuild in the near future to maintain its production capacity. The fundamental need for the proposed development is therefore to relocate Visy's existing Queensland glass manufacturing operation to ensure continuity of container glass supply for customers in South East Queensland. The proposed facility will also integrate an existing Visy glass recycling operation in Crestmead to provide strategic logistic and commercial efficiencies through the co-located operations. The proposed site is adjacent to existing Visy can manufacturing and cardboard box manufacturing facilities and will create a beverage container precinct.

The facility operation onsite will largely involve the following:

- Recycling:
- Manufacturing:
- Warehousing and distribution:

The EPBC Act referral relates to Stage 1 of the process only. Stage 1 involves the construction of integrated glass facility to process 145,000 tonnes per year of waste container glass, manufacture 200,000 tonnes glass (960,000,000 containers) per year on 4 production lines, and warehouse 80,000 pallets of glass containers. Stage 1 involves the following key activities:

- Erosion and sediment control, vegetation clearing and grubbing.

- Bulk earthworks, excavation and filling.
- Installation of infrastructure
- Concreting for footings, slabs and roadways.
- Construction of building packages (warehouse, production building etc.).
- Process equipment installation and building fit outs.
- Landscaping

For Stage 1 the total disturbance area within the project area is:

- Lot 2 WD4654 =11.95 ha
- Lot 2 SP189558 = 1.012 ha

An area of vegetation buffer will be retained along the boundary of the project area adjoining Stapylton Jacobs Well Road reserve. The vegetation buffer area has a total area of area of 1.15 ha. 11.95 ha of koala habitat within the project area will be impacted by vegetation clearing and it comprises of

- 4.80 ha of moderate value koala habitat
- 7.15 ha of low value movement habitat with either absent or scattered koala food trees within cleared and grassy areas

Refer to Section 1 and Section 4 of the Matters of National Environmental Significance Assessment - Glass Manufacturing and Recycling Facility 222 & 298 Stapylton Jacobs Well Road, Stapylton (2022) attached.

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

Yes

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

Yes

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

A phased approach to constructing the proposed Glass Recycling and Manufacturing Facility and increasing production capacity to achieve an end state production of glass containers has been undertaken. The EPBC Act referral relates to Stage 1 of the process only. Stage 1 involves the construction of integrated glass facility to process 145,000 tonnes per year of waste container glass, manufacture 200,000 tonnes glass (960,000,000 containers) per year on 4 production lines, and warehouse 80,000 pallets of glass containers. This stage will involve the following key activities:

- Erosion and sediment control, vegetation clearing and grubbing.
- Bulk earthworks, excavation and filling.
- Installation of infrastructure
- Concreting for footings, slabs and roadways.
- Construction of building packages (warehouse, production building etc.).
- Process equipment installation and building fit outs.
- Landscaping

The expected stages and timing of development are outlined below.

Stage 1 - Late 2022

Construction of integrated glass facility to process 145,000 tonnes per year of waste container glass, manufacture 200,000 tonnes of glass (960,000,000 containers) per year on 4 production lines, and warehouse 80,000 pallets of glass containers (current phase).

Stage 2 - A 5 year timeframe is anticipated for Stage 2 (Approx. 2027)

Construction of an extension to glass manufacturing facility and warehouse to process up to 175,000 tonnes per year of waste container glass, manufacture 250,000 tonnes glass per year on 5 production lines, and warehouse 95,000 pallets of glass containers.

Stage 3 - A 10+ year timeframe is anticipated for Stage 3, depending on market demand and commercial factors (Approx. 2032)

Construction of an extension to glass manufacturing facility and upgrade of glass cullet plant to process up to 240,000 tonnes per year of waste container glass, manufacture 300,000 tonnes glass (1,440,000,000 containers) per year on 6 production lines, and warehouse 96,000 pallets of glass containers. In the final phase of the expansion approximately 800 tonnes per day (tpd) of waste glass will be received over a six (6) day working week, delivered by 20-35 tonne vehicles.

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

A legislative review of approval triggers associated with the ecological matters identified on site has been undertaken to identify potential statutory approvals triggered by the proposed development associated with the clearing of vegetation, impacts to fauna habitats and other direct and indirect impacts such as hydrological flows and contamination.

The development site is located within the City of Gold Coast Council local government area and is subject to assessment against the *Gold Coast City Plan* (Planning Scheme). The site is located within the medium impact industry zone. The proposed works will involve a high impact industry and will require impact assessment, in accordance with the Planning Scheme and the Planning Act 2016.

The purpose of the Medium impact industry zone code is *"to provide for medium impact industry uses. It may include non-industrial and business uses that support the industrial activities where they do not compromise the long-term use of the land for industrial purposes. Activities considered appropriate in this zone are defined as medium impact industry in the schedule of definitions."*

The proposed development application has been assessed against Strategic Intent of the Planning Scheme, the intent of the Industry Zone, relevant code requirements and any other development provisions pertinent to the proposed development and the merits of the proposal.

The proposed development will trigger a number of referrals. Compliance has been demonstrated against the relevant SDAP State Codes, as follows:

- State Code 1: Development in a State-controlled road
- State Code 25: Development in South East Queensland koala habitat areas
- State Code 22: Environmentally relevant activities.

The *Environmental Protection Act 1994* aims to protected Queensland's environment, while also allowing for development that improves the total quality of life, now and into the future, that maintains ecological processes. The activities being undertaken on site trigger the following Environmentally Relevant Activities (ERAs):

- ERA 44 (Glass or glass fibre manufacturing)
- ERA 33 (Crushing, Milling, Grinding or Screening)
- ERA 62 (Resource recovery and transfer facility operation).

Having regard to the features of the surrounding locality, it is deemed that this proposal is in keeping with the character and overall built form of the local area.

The State Planning Policy 2017 (SPP) describes the State's interests in land use planning and development, administered through the former Department of Infrastructure, Local Government and Planning (now Department of State Development, Infrastructure, Local Government and Planning). There are 17 state interests under five broad themes: liveable communities and housing, economic growth, environment and heritage, safety and resilience to hazards, and infrastructure. All aspects of the SPP have been integrated in the local categorising assessment and therefore do not require individual assessment.

The development is within the boundaries of the *South East Queensland Regional plan 2017: Shaping SEQ.* The site sits within the Urban Footprint, where the intent is to provide for the region's urban development needs until 2041. Land supply in the urban footprint identifies future expansion land supply on a 60% consolidation and 40% expansion supply ratio. The Urban Footprint is intended to support urban uses such as *"housing, industry, business, infrastructure, community facilities sand urban open spaces".* The proposed development location is within the Yatala-Stapylton-Beenleigh Regional Economic Cluster (REC) which the Shaping SEQ identifies *"represents a significant manufacturing cluster, with specialisation in priority sectors of integrated food and beverage supply chains, and transport and logistics."* The development seeks an approval for a high impact industry use, which is considered to be an urban activity and will not compromise the achievement if the outcomes perused by the Regional Plan.

The clearing of native vegetation protected under the *Vegetation Management Act 1999* within the site, is exempt from development approval under Schedule 21 of the Planning Regulation 2017, as it is exempt clearing work for an urban purpose on an urban area and therefore, is not a state interest. The unmapped waterway within the site has been determined to be a drainage channel under the *Water Act 2000* and no approvals are triggered under the *Water Act 2000*.

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. *

No public consultation has been formally undertaken for this proposed development to date, including with Indigenous stakeholders. Pre-lodgement discussions were undertaken with City of Gold Coast Council, State Assessment Referral Agency (SARA), Department of Environment and Science (DES) and the Department of Transport and Main Roads.

1.3 Identity - Referring party

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Is Referring party an organisation or business? *

Yes

Referring party organisation details

ABN	39008488373
Organisation name	GHD PTY LTD
Organisation address	Level 13, The Rocket, 203 Robina Town Centre Drive, Robina QLD 4226

Referring party details

Name	Sarah Wilson
Job title	Senior Environmental Planner
Phone	07 5413 8133
Email	sarah.wilson@ghd.com
Address	Level 13, The Rocket, 203 Robina Town Centre Drive, Robina QLD 4226

1.3 Identity - Person proposing to take the action

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

No

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

Yes

Person proposing to take the action organisation details

ABN	94004230326
Organisation name	Visy Glass Operations (Australia) Pty Ltd
Organisation address	Level 11, 2 Southbank Boulevard, SOUTHBANK VIC 3006

Person proposing to take the action details

Name	Anne Trevena
Job title	Environment Manager
Phone	0400 866 436
Email	anne.trevena@visy.com.au
Address	Level 11, 2 Southbank Boulevard, SOUTHBANK VIC 3006

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

No

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

No

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. *

Visy is a global leader in packaging and resource recovery with over 120 sites throughout Australasia and over 7,000 employees. Visy's innovation, manufacturing and logistic capabilities are organised around integrated closed loops of manufacturing and resource recovery. A snapshot of Visy's 'What we make we take' from the website includes that in FY2021, Visy produced 2.2 billion beverage cans, 905,000 tonnes of fibre packaging, and 843,000 tonnes of glass and diverted recyclable material from landfill including 1.3 million tonnes of paper and cardboard and 521,000 tonnes of glass.

All Visy sites must adhere to the Visy Management System (VMS), which is an integrated business management system that standardises and integrates the safety, environmental, food safety, quality and safe transport management systems and supports key business strategy and decision making. VMS uses the Plan, Do, Check, Act approach based on the quality system structures of ISO9001 Quality Management System, ISO45001 & AS4801 Safety Management System and ISO14001 Environmental Management System. Some of Visy's business units have achieved certification of the VMS to these standards.

Directing VMS framework are the Visy policies, including Environment Policy, to support the strategic direction of the organisation and provide a framework to establish and review objectives.

Visy, including subsidiary companies, operate over 120 sites throughout Australia and hold over 30 environment licenses in Australia. Visy has no present proceedings or proceedings in the past 5 years since 2017 under environmental protection legislation.

1.3 Identity - Proposed designated proponent

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

Yes

Proposed designated proponent organisation details

ABN	94004230326
Organisation name	Visy Glass Operations (Australia) Pty Ltd
Organisation address	Level 11, 2 Southbank Boulevard, SOUTHBANK VIC 3006

Proposed designated proponent details

Name	Anne Trevena
Job title	Environment Manager
Phone	0400 866 436
Email	anne.trevena@visy.com.au
Address	Level 11, 2 Southbank Boulevard, SOUTHBANK VIC 3006

1.3 Identity - Summary of allocation

Confirmed Referring party's identity

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

ABN	39008488373
Organisation name	GHD PTY LTD
Organisation address	Level 13, The Rocket, 203 Robina Town Centre Drive, Robina QLD 4226
Representative's name	Sarah Wilson
Representative's job title	Senior Environmental Planner
Phone	07 5413 8133
Email	sarah.wilson@ghd.com
Address	Level 13, The Rocket, 203 Robina Town Centre Drive, Robina QLD 4226

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	94004230326

Organisation name	Visy Glass Operations (Australia) Pty Ltd
Organisation address	Level 11, 2 Southbank Boulevard, SOUTHBANK VIC 3006
Representative's name	Anne Trevena
Representative's job title	Environment Manager
Phone	0400 866 436
Email	anne.trevena@visy.com.au
Address	Level 11, 2 Southbank Boulevard, SOUTHBANK VIC 3006

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

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

No

Has the department issued you with a credit note? *

No

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

No

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

No

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

No

1.4 Payment details - Payment allocation

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

Proposed designated proponent

2. Location

2.1 Project footprint

2.2 Footprint details

What is the address of the proposed action? *

222 and 298 Stapylton Jacobs Well Road, Stapylton

Where is the primary jurisdiction of the proposed action? *

Queensland

Is there a secondary jurisdiction for this proposed action? *

No

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

The proposed development area is freehold land with no recorded easements.

The certificate of titles for the development site state that the registered landowner is Visy Packaging properties Pty Ltd.

A review of the certificate of tiles indicates that there are no easements or encumbrances recorded onsite.

3. Existing environment

3.1 Physical description

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

The project area is located within the suburb of Stapylton in the City of Gold Coast local government area. The proposed development area is situated within a semi-developed industrial landscape, with the adjacent land uses comprising various industrial or commercial operations and undeveloped blocks, including for conservation. The area beyond remains rural, with agriculture cropping and farmland uses. Lot 2 on WD4654 is currently vacant and generally undeveloped. The site is partially cleared to the east and more densely vegetated to the west. The project area is zoned as medium impact industry under the City of Gold Coast City Plan. The project area has frontage to Stapylton Jacobs Well Road (State-controlled road) to the northwest and Quinns Hill Road East (local road) to the south. The project will require access from Stapylton Jacobs Well Road.

The eastern side of the proposed development area has been historically cleared and now supports introduced grass species. Large trees were generally absent from that area, with only a few scattered stags remaining in the northern eastern corner. This area had also recently been mown and discussions with site personnel implied this was routinely conducted. The northern, southern and western boundaries of the proposed development area were well vegetated and supported mixed woodlands of eucalypts, acacias and allocasuarinas.

A review of historical aerial imagery identified that the proposed development area appears to have been cleared of vegetation in 1993, apart from a selection of larger trees remaining scattered across the property. The currently mapped remnant vegetation has regrown since that time, with some areas within the regrowth mapped areas being selectively cleared around the edges and along access tracks. A large portion of the eastern proposed development area contains previously cleared and disturbed land with dense grass groundcover and scatter eucalypt trees and weedy shrubs and herbs. Remnant vegetation occurs in two locations, along the southern boundary and in a large patch of woodland near the southwestern corner and represents mature eucalypt woodland to open forest. High value regrowth occurs across the majority of the centre of the proposed development area and extends along the central northern boundary.

In the southwestern corner, the remains of an abandoned residential dwelling has been overgrown by lantana and left in disarray. This area was heavily infested by lantana and other invasive species, as were the access tracks on the northern proposed development boundary. The numerous types of disturbances across the proposed development area include clearing, access tracks, an abandoned house, fences, weed infestations (particularly relating to road verges, clearings and areas lacking vegetation structure), areas of canopy dieback, and dumped rubbish.

Lot 2 on SP189558 is currently occupied by Visy glass manufacturing operations, with buildings and hardstand areas. Refer to Section 3 of the Matters of National Environmental Significance Assessment Glass Manufacturing and Recycling Facility 222 & 298 Stapylton Jacobs Well Road, Stapylton for more information about the existing environment.

Describe any existing or proposed uses for the project area.

The proposed development area is located on Manufacturing and Industrial (Lot 2 SP189558) land, with the extended area to be on Lot 2 WD4654, which is classified as Other Minimal Use land. The current land use for Lot 2 WD4654 is vacant and undeveloped, and is zoned as medium impact industry. The site partially cleared to the east, with dense vegetation on the western side of the lot. An unnamed, non-perennial drainage line intersects the property on the western side of the lot. The site adjoins Staplyton Jacobs Well Road to the north and Quinns Hill Road East to the south. Visy Packaging properties Pty Ltd currently operates over Lot 2 SP189558. A review of recent aerial imagery of surrounding areas adjacent to the site are detailed below:

North

- Stapylton Jacobs Well Road bounds the site from northeast to southwest.
- Low-rise commercial warehouses and industrial sites, including SEQ Transport and Pallets Pty and Tip Truck Solutions Pty.
- Gem Bait & Tackle, including fuel station, and The Gem Hotel pub and bistro, including outdoor dining and events.
- Fulton Hogan Stonemaster Quarry and Yellowwood Quarry is located approximately 200 m north of the site.
- Woolshed Parklands and Conservation area, respectively at the northeast and northwest portions of the site

East:

- Various commercial and industrial sites, including for storage of earthmoving equipment and shipping containers, and medical waste.

South:

- Quinns Hill Road East bounds the site along the south.
- Industrial sites, including beverage manufacturer and civil works.
- Undeveloped sites with uncleared vegetation.
- Rural site with a residential dwelling directly across from the site. A mixed commercial estate including an early learning childcare centre.
- A number of manmade dams are located within 300 m of the site. Two of these dams connect to the non-perennial watercourse that intersects Lot 2 on WD4654.

West:

- Five way intersection of Stapylton Jacobs Well Road with Quinns Hill Road East, Quinns Hill Road West, and Stonemaster Drive.
- Commercial site for funeral director and memorial park.
- A number of manmade dams are located within 350 m of the site.
- A number of rural sites with residential dwellings.

Visy proposes a high impact industry within the medium impact industry which is compatible with the existing and future intent industrial development within Stapylton. The proposed development will include construction of the following key components:

- A highbay warehouse
- Glass manufacturing building and batch house
- Recycled glass beneficiation plant and storage bunkers
- Production building
- Batch house and cullet (waste glass) silos
- Fire pumps and tanks
- Transformer yard
- Canteen and amenities room
- Equipment parking area
- Workshop
- Visitor and staff parking
- Ancillary office space
- Landscaping.

Refer to Section 1 and Figure 1-2 on P5 of the Matters of National Environmental Significance Assessment Glass Manufacturing and Recycling Facility 222 & 298 Stapylton Jacobs Well Road, Stapylton for more information.

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

The proposed development area comprises remnant and regrowth vegetation. Remnant vegetation occurs in two locations, along the southern boundary and in a large patch of woodland near the southwestern corner and represents mature eucalypt woodland to open forest. High value regrowth occurs across the majority of the centre of the proposed development area and extends along the central northern boundary. This area of the site has been more frequently disturbed (i.e. thinned) than the remnant vegetation. The field survey confirmed the following regional ecosystems (REs) within the proposed development area: Least concern status RE 12.11.5 (*Corymbia citriodora subsp. variegata* woodland to open forest +/- *Eucalyptus siderophloia/E. crebra*, *E. carnea*, *E. acmenoides*, *E. propinqua* on metamorphics +/- interbedded volcanics), Least concern RE 12.11.24, (*Eucalyptus carnea* or *E. tindaliae*, *Corymbia intermedia* +/- *E. siderophloia* or *E. crebra* woodland on metamorphics +/- interbedded volcanics).

No TECs and/or conservation significant flora species listed under the EPBC Act or NC Act were observed within the proposed development area. The northern, southern and western boundaries of the proposed development area were well vegetated and supported mixed woodlands of eucalypts, acacias and allocasuarinas. A large remnant woodland patch exists within the centre of the proposed development area which contained a mix of mature eucalypts species and supported high avian diversity. This community provided foraging habitat for a diverse range of fauna and suitable nesting habitat for an array of woodland birds. Despite the presence of mature eucalypts, few tree hollows were observed within the proposed development area. Regrowth woodland was also present, distinguished by a dense midstorey or acacias and casuarinas and a number of large, mature eucalypts. Fallen woody debris was abundant within this community and is likely to provide suitable microhabitats for small reptiles and ground-dwelling mammals. High leaf deposition from the regenerating acacias added further complexity to the ground layer within this habitat type. In the southwestern corner, the remains of an old residential dwelling has been overgrown by lantana and left in disarray. This area was heavily infested by lantana and other invasive species, as were the access tracks on the northern proposed development boundary.

No conservation significant bird, reptile or amphibian species were confirmed present or assessed as likely to occur in the likelihood of occurrence. No conservation significant mammal species were confirmed present during field surveys. However, three species, the koala (*Phascolarctos cinereus*), grey-headed flying-fox (*Pteropus poliocephalus*) and Queensland listed short-beaked echidna (*Tachyglossus aculeatus*) were assessed as likely to occur in the likelihood of occurrence assessment. State core koala habitat mapped throughout the remnant and regrowth woodland communities within the proposed development area. The proposed development area is outside of a Koala Priority Area and no locally-refined koala habitat areas or koala habitat restoration areas are present on site. Essential habitat for the koala is broadly mapped across the eucalypt vegetation with the middle of the proposed development area, only where regulated vegetation is mapped. No evidence of koalas was recorded during targeted surveys undertaken within the project area. Known food and shelter tree species including *Eucalyptus siderophloia, E. propinqua, Corymbia intermedia, C. tessellaris* and *Lophostemon suaveolens* were present within the remnant and regrowth woodlands within the project area and surrounding landscape.

The grey-headed flying-fox was not recorded within the project area during field surveys for the proposed development. However, suitable foraging habitat was present and a known roost camp that has been continuously utilised by the grey-headed flying-fox is located 5 km to the west at Mt Warren Park. No roost camps occur on or adjacent to the project area, and the vegetation on the project area would not constitute a potential roosting habitat. Vegetation within the project area does however represent valuable foraging habitat. No evidence of short-beaked echidna was recorded within the project area. The proposed development supports connectivity between areas of suitable habitat external to the project area (i.e., Woolshed Parklands, Eco Memorial Park and the Yellowood Reserve). This potential corridor has been maintained along the northern boundary of the project area. However, the majority of this area supports sub-optimal habitat with dense acacia regrowth, heavy weed infestations and limited mature eucalypt canopy cover.

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

The site topography ranges between 40 m and 10 m AHD, based on available 10 m interval contour mapping, and is generally sloping in an easterly direction.

A survey plan for Lot 2 on WD4654 (Masters Surveying Drawing No 64255-DET-001 Rev 0 dated 6 February 2022) indicates the site slopes generally to the east but also to the south in the western quarter, from a ridge line crossing the site in a southeast direction from Stapylton-Jacobs Well Road to Quinns Hill Road East.

The natural ground level of Lot 2 on SP189558 has largely been altered due to Visy's existing development.

3.2 Flora and fauna

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

The proposed development area comprises remnant and regrowth vegetation. The remnant areas have regrown since that time, with some areas within the regrowth mapped areas being selectively cleared around the edges and along access tracks. Remnant vegetation occurs in two locations, along the southern boundary and in a large patch of woodland near the southwestern corner and represents mature eucalypt woodland to open forest. High value regrowth occurs in the centre of the proposed development area and extends along the northern boundary. The eastern side of the proposed development area has been historically cleared and now supports introduced grass species. The northern, southern and western boundaries of the proposed development area were well vegetated and supported mixed woodlands of eucalypts, acacias and allocasuarinas. A large remnant woodland patch exists within the centre of the proposed development area which contained a mix of mature eucalypts species and supported high avian diversity. This community provided foraging habitat for a range of fauna and suitable nesting habitat for an array of woodland birds. Despite the presence of mature eucalypts, few tree hollows were

observed within the proposed development area. Regrowth woodland was also present, distinguished by a dense midstorey or acacias and casuarinas and a number of large, mature eucalypts. Fallen woody debris was abundant within this community and is likely to provide suitable microhabitats for small reptiles and ground-dwelling mammals. High leaf deposition from the regenerating acacias added further complexity to the ground layer within this habitat type. In the southwestern corner, there is a derelict dwelling that has been overgrown by lantana.

Six fauna habitat types within the proposed development area include: Remnant eucalypt woodland, Mixed eucalypt and acacia regrowth, Ephemeral drainage line with fringing, vegetation, Eucalypt and Allocasuarina regrowth, Highly disturbed woodland and Routinely managed grasslands and open spaces. No conservation significant bird, reptile or amphibian species were confirmed present during field surveys. No conservation significant mammal species were confirmed present during field surveys. However, three species, the koala, grey-headed flying-fox and short-beaked echidna were assessed as likely to occur in the likelihood of occurrence assessment. DES core koala habitat is mapped over remnant and regrowth woodland communities within the proposed development area. The proposed development area is not within a Koala Priority Area. Essential habitat for the koala is broadly mapped across the eucalypt vegetation with the middle of the proposed development area, only where regulated vegetation is mapped. No evidence of koalas was recorded during targeted surveys. Food and shelter tree species including *Eucalyptus siderophloia, E. propinqua, Corymbia intermedia, C. tessellaris* and *Lophostemon suaveolens* were present within the remnant and regrowth woodlands within the project area and surrounding landscape. The koala was assessed as likely to occur due to the proximity of historical koala records within the surrounding landscape and the presence of suitable foraging and shelter habitat within the project area. The grey-headed flying-fox was not recorded within the project area. Suitable foraging habitat was present and a known roost camp that has been continuously utilised by the grey-headed flying-fox is located 5 km to the west at Mt Warren Park. No roost camps occur on or adjacent to the project area, and the vegetation on the project area would not constitute a potential roosting habitat. No evidence of short-beaked echidna was recorded during targeted surveys. The species was assessed as likely to occur due to the proximity of historical records within the surrounding landscape and the presence of suitable foraging and shelter habitat within the project area. The proposed development supports connectivity between areas of suitable habitat external to the project area (i.e., Woolshed Parklands, Eco Memorial Park and the Yellowood Reserve). This corridor has been maintained along the northern boundary of the project area. This patch of vegetation will facilitate ongoing koala movements between the project area and the Woolshed parklands. Eco Memorial Park and the Yellowood Reserve. Koala habitat within the centre of the project area supports sub-optimal habitat with dense acacia regrowth, heavy weed infestations and limited mature eucalypt canopy cover. Two species of invasive fauna were confirmed present within the proposed development area, there being, the European fox and the black rat. Several additional invasive fauna species are likely to occur within the proposed development area, particularly feral cats, cane toads, dogs and various invasive dove species. Refer to Section 3 MNES Glass Manufacturing and Recycling Facility.

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

The field survey confirmed the following regional ecosystems (REs) are present within the proposed development area:

- Least concern status RE 12.11.5, which is described as *Corymbia citriodora subsp. variegata* woodland to open forest +/- *Eucalyptus siderophloia/E. crebra*, *E. carnea*, *E. acmenoides*, *E. propinqua* on metamorphics +/- interbedded volcanics.
- Least concern RE 12.11.24, which is described as *Eucalyptus carnea* or *E. tindaliae*, *Corymbia intermedia* +/- *E. siderophloia* or *E. crebra* woodland on metamorphics +/- interbedded volcanics.

No EPBC Act listed TECs were observed in the proposed development area.

A meandering flora survey method was undertaken in accordance with the Flora Survey Guidelines - Protected Plants (DES 2020), encompassing the protected plant high risk trigger areas mapped under the NC Act that occurred within the proposed development area, and 100 m buffer areas. The flora survey covered all the habitat types present within the clearing extent and 100 m buffer area.

No conservation significant flora species listed under the EPBC Act or NC Act were observed within the proposed development area during the protected plant flora surveys. No conservation significant flora species are considered likely to occur within the proposed development area, based on the habitat preferences of conservation significant flora that have potential to occur within the 2 km search area. There are five conservation significant flora species that may occur within the proposed development area, based on previous records within the desktop search area, however with no suitable habitat present, or without previous records but with marginal habitat present within the proposed development area. Refer to Section 3 Matters of National Environmental Significance Assessment Glass Manufacturing and Recycling Facility.

A number of restricted invasive flora species listed under the Queensland *Biosecurity Act 2014* were observed during the field surveys, including three Weeds of National Significance (lantana, Singapore daisy and asparagus fern)

The Department of Natural Resources and Mines (DNRME 2018), 1:100,000-scale digital geological mapping indicates that the site's lithology is from the Devonian Carboniferous and Holocene age. The site is largely underlain by the Neranleigh-Fernavale beds, which is a stratified sedimentary unit. The rock types in this unit include mudstone, shale, arenite, chert, jasper, basic metavolcanics, pillow lava and conglomerate. Along the eastern boundary of the site a stratified alluvium unit exists. The rock types in this unit are described as gravel, sand, silt, clay and second alluvial terrace.

The site is mapped as comprising a number of soil types, as mapped on the Australian Soil Resource Information System (ASRIS). The dominant soil types present include:

- Chromosols: This soil type is generally located within flat alluvial areas and characteristically have texture contrast profiles with a clear boundary between the surface loamy soil and the clay subsoil. The surface condition of the soil ranges from loose to hard

setting and ranges in colour from dark brown to dark grey. Subsoils are generally slightly acidic to slightly alkaline and are non-sodic. Chromosols can be susceptible to sheet, rill and stream bank erosion when disturbed.

- Kurosols: Kurosols are an acidic soil and are common along coastal plains. These soils generally have a strong texture profile with a clear boundary between the sandy to foamy surface soil and the clay subsoil. This soil type has hard setting surface conditions and is generally poorly drained. Kurosols are prone to dispersive subsoils.
- Hydrosols: This soil type is saturated with water for long periods of time and commonly found near coastal areas, like those found on the site. These soils generally occur in lower slope positions where the drainage of the site is poor. Hydrosols are prone to dispersive subsoils and commonly have high salt levels. These soils are typically a grey (or greenish grey) colour.

Coastal areas lower than 5 m AHD (Australian Height Datum) are considered likely to have potential acid sulfate soils (PASS) present. Acid sulfate soils (ASS) can also be found buried beneath newer soils at elevations below 20 m AHD.

The entire site is mapped under the ASS overlay map under the City of Gold Coast City Plan. The site is mapped as land at/or below 5 m AHD and land at/or below 20 m AHD. Therefore, potential or actual ASS are likely to impact the site.

The proposed development area is located within the fire ant biosecurity zone 2, meaning a Biosecurity Instrument Permit under the Queensland Biosecurity Act will be required if any soil from site is moved outside the biosecurity zone.

3.3 Heritage

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

There are no Commonwealth Heritage Places listed for the proposed development area. Searches from the Queensland Heritage Register and Gold Coast City Council Heritage list did not identify listed heritage features, heritage items or places within the proposed development area.

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

A search of the Department of Seniors, Disability Services, and Aboriginal and Torres Strait islander Partnerships cultural heritage database and register, in partial fulfilment of the *Aboriginal Cultural Heritage Act 2003 duty of care obligations*, revealed that no Aboriginal cultural heritage sites are located within the proposed development Area and surrounds.

Additionally, searches of the Gold Coast City Council Planning Scheme returned no Indigenous heritage features, heritage items or places within the proposed development Area.

3.4 Hydrology

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

No major watercourses occur within the proposed development area, with the nearest major watercourse being the Albert River which is situated 1.2 km to the west. No Queensland waterways for waterway barrier works are mapped over the project area. There is one unnamed non-perennial drainage line that extends across the southwestern corner of the project area. According to the QLD Department of Regional Development, Manufacturing and Water online mapping, it is an unmapped feature that is not defined as a watercourse under the *Water Act 2000*. This drainage line flows south / southwest before joining the Albert River approximately 2 km downstream. The watercourse originates in a culvert and gully the northwestern boundary, immediately adjacent to Stapylton Jacobs Well Road. From here, the flow path heads south through a mix of disturbed, remnant and regrowth woodland. No flow or standing water was recorded during the field survey and the drainage line is likely to hold water temporarily following rain events only. A small channel was present at one location, however the majority of the watercourse had no defining features or banks and no riparian habitat present. A small culvert on the southern boundary of the site facilitated the flow of water under Quinns Hill Road East to downslope areas.

No Ramsar wetland of international importance, Directory of Important Wetlands in Australia or State-significant wetlands / wetland values occur within the proposed development area. The Moreton Bay Ramsar wetland is located 7.5 km east, or approximately 20 km downstream, from the proposed development area. This area is protected under the EPBC Act. Moreton Bay is also a Marine Park protected under the Queensland *Marine Parks Act 2004*. The nearest wetland to the proposed development is a State-significant wetland of high ecological significance, which occurs along the eastern bank of the Albert River, approximately 1.2 km west of the proposed development. This wetland is hydrologically connected, to some extent but through constructed road culverts and drainage channels, by the unnamed drainage line which originates in the southwestern corner of the proposed development area. Two lacustrine wetlands are mapped 300 northwest and 500 m southwest of the proposed development area, whilst a palustrine wetland is mapped approximately 450 m east of the proposed development area. Neither wetland is hydrologically connected to the proposed development area, however the wetland to northwest converges with a drainage 1 km southeast of the proposed development. The drainage line originates in the southwestern corner of the proposed development area. One lacustrine wetland is also mapped approximately 350 m south of the proposed development area; however this mapped area relates to a constructed dam. These wetlands are not listed as MNES or matters of State environmental significance (MSES) but are mapped under the DES Queensland Wetlands Mapping layer.

A locally-significant wetland is mapped by the Gold Coast City Plan overlay mapping across the eastern portion of the proposed development area. A small area of inundated swamp was identified in the south-western corner of the mapped locally-significant wetland area, comprising dense grasses and reeds, including *Phragmites australis*. This area is likely to receive runoff from the western elevated areas within the proposed development area due to gradual downhill slope that would direct water towards the proposed development's eastern boundary. *Phragmites australis* is listed as a wetland indicator species (DES 2013). Several additional indicative species were also recorded in the woodland occurring along the edge of the wetland, specifically, dirty dora (*Cyperus difformis*), *Cyperus aquatilis,* river club-rush (*Schoenoplectus tabernaemontani*), mangrove club rush (*Schoenoplectus subulatus*) and C*yperus polystachyos* (bunchy sedge). These species are likely to have occurred in the wetland prior to clearing, which historical imagery shows to have occurred between 1971 and 1974.

A flood assessment has been undertaken to assess flood impacts and development and understand the changes to flood volumes across the wider catchment in the pre- and post-development scenarios. Refer to Section 3.2 Matters of National Environmental Significance Assessment Glass Manufacturing and Recycling and Section 1-3 Flood and Stormwater Assessment Glass Manufacturing and Recycling Facility.

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
S23	Commonwealth Marine Area	No	Yes

EPBC Act section	Controlling provision	Impacted	Reviewed
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

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

No

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

There is no world heritage site within or surrounding the project area, therefore the proposed development is not considered to have direct and/or indirect impacts to world heritage site.

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

No

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

There is no national heritage site within or surrounding the project area, therefore the proposed development is not considered to have direct and/or indirect impacts to national heritage site.

Ramsar Wetland

Please note: duplicates have been removed.

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	Moreton Bay

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

No

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

No Ramsar wetland of international importance, Directory of Important Wetlands in Australia (DIWA) or Matter of State Environmental Significance (MSES) wetlands / wetland values occur within or are adjacent to the project area. The Moreton Bay Ramsar wetland is located 7.5 km east, or approximately 20 km downstream, from the project area. Moreton Bay is also a Marine Park protected under the Queensland *Marine Parks Act 2004*. The proposed development is not considered to have direct and/or indirect impacts to Ramar wetlands for the following reasons:

• The proposed development will not result in wetlands of international importance being destroyed or substantially modified. No Ramsar wetland of international importance, Directory of Important Wetlands in Australia (DIWA) or Matter of State Environmental Significance (MSES) wetlands / wetland values occur within the project area. The Moreton Bay Ramsar wetland is located 7.5 km east, or approximately 20 km downstream, from the project area. The nearest wetland to the proposed development is a MSES wetland of high ecological significant which occurs along the eastern bank of the Albert River, approximately 1.2 km west of the proposed development. The mapped locally significant wetland in the eastern portion of the project area consists mainly of weedy grasses and shrubs with scattered trees, with only a small area of inundated swamp in the south-western edge. To address impacts to the loss of the local significant wetland and vegetation, the proposed development landscape plan includes landscaping of the expanded bioretention basin with the wetland native vegetation.

• The proposed development is not considered to result in a substantial and measurable change in the hydrological regime of the wetland as the Moreton Bay Ramsar wetland is located 7.5 km east, or approximately 20 km downstream, from the project area. The nearest wetland to the proposed development is a MSES wetland of high ecological significant which occurs along the eastern bank of the Albert River, approximately 1.2 km west of the proposed development. A stormwater management plan and erosion and sediment control plan have been development and will be implemented during the relevant phases of the project.

• The proposed development is not considered to result in adverse impacts to the habitat or lifecycle of native species, including invertebrate fauna and fish species, dependent upon the wetland. As the Moreton Bay Ramsar wetland is located 7.5 km east, or approximately 20 km downstream, from the project area. The nearest wetland to the proposed development is a MSES wetland of high ecological significant which occurs along the eastern bank of the Albert River, approximately 1.2 km west of the proposed development. A stormwater management plan and erosion and sediment control plan have been development and will be implemented during the relevant phases of the project.

• The proposed development is not considered to result in a substantial and measurable change in the water quality of the wetland, a stormwater management plan and erosion and sediment control plan have been development and will be implemented during the relevant phases of the project.

• The proposed development is not considered to result an invasive species that is harmful to the ecological character of the wetland being established in the wetland. Pest and weed management measures will be captured in the construction environmental management plan that will be implemented during construction.

Refer to Section 4.1 in Matters of National Environmental Significance Assessment Glass Manufacturing and Recycling Facility.

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

Please note: duplicates have been removed.

Direct impact	Indirect impact	Species
No	No	Acronychia littoralis
No	No	Anthochaera phrygia
No	No	Argynnis hyperbius inconstans
No	No	Arthraxon hispidus
No	No	Baloghia marmorata
No	No	Botaurus poiciloptilus

Direct impact	Indirect impact	Species
No	No	Calidris canutus
No	No	Calidris ferruginea
No	No	Chalinolobus dwyeri
No	No	Charadrius leschenaultii
No	No	Coeranoscincus reticulatus
No	No	Corchorus cunninghamii
No	No	Cryptocarya foetida

Direct impact	Indirect impact	Species
No	No	Cryptostylis hunteriana
No	No	Cupaniopsis shirleyana
No	No	Cyclopsitta diophthalma coxeni
No	No	Dasyurus maculatus maculatus (SE mainland population)
No	No	Delma torquata
No	No	Endiandra floydii
No	No	Erythrotriorchis radiatus

Direct impact	Indirect impact	Species
No	No	Falco hypoleucos
No	No	Geophaps scripta scripta
No	No	Grantiella picta
No	No	Hirundapus caudacutus
No	No	Lathamus discolor
No	No	Limosa lapponica baueri
No	No	Macadamia integrifolia

Direct impact	Indirect impact	Species
No	No	Macadamia tetraphylla
No	No	Macroderma gigas
No	No	Mixophyes fleayi
No	No	Numenius madagascariensis
No	No	Persicaria elatior
No	No	Petauroides volans
No	No	Petaurus australis australis

Direct impact	Indirect impact	Species
No	No	Phaius australis
Yes		Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)
No	No	Planchonella eerwah
No	No	Potorous tridactylus tridactylus
No	No	Pseudomys novaehollandiae
Yes		Pteropus poliocephalus
No	No	Rhodamnia rubescens

Direct impact	Indirect impact	Species
No	No	Rhodomyrtus psidioides
No	No	Rostratula australis
No	No	Samadera bidwillii
No	No	Sternula nereis nereis
No	No	Thesium australe
No	No	Turnix melanogaster
No	No	Vincetoxicum woollsii

Direct impact	Indirect impact	Species

Ecological communities

Direct impact	Indirect impact	Ecological community
No	No	Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland
No	No	Lowland Rainforest of Subtropical Australia

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

Yes

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

Impacts to koala *(Phascolarctos cinereus)* and grey-headed flying-fox *(Pteropus poliocephalus)*.

Koala (*Phascolarctos cinereus*)

The Koala is listed as endangered under the EPBC Act and is likely to occur within the proposed development area. Koalas utilise a range of woodland habitats feeding on species of Eucalyptus, Corymbia, Lophostomen, Angophora and Melaleuca and the species is known to occur from north-eastern Queensland to the south-east corner of South Australia; withthe species widespread in coastal and inland areas. There were six habitat types identified in the proposed development area:

- Remnant eucalypt woodland
- Mixed eucalypt and acacia regrowth
- Ephemeral drainage line with fringing vegetation
- Eucalypt and Allocasuarina regrowth
- Highly disturbed woodland
- Routinely managed grasslands and open spaces

Potential impacts on koala populations and koala habitat (as defined in MNES Assessment Report) include:

- Loss of habitat – In total there is 11.95 ha of koala habitat mapped within the proposed development area. 7.15 ha of moderate value koala habitat, and 4.80 ha of low value movement habitat.
- Increased fragmentation of remaining koala habitat in the local region and restriction of koala movement
- Injury and mortality
- Habitat degradation by increased dust run-off and sedimentation
- Deterrent to koala movement through the landscape through an increase in noise, light and vibration and operation.
- Increased spread and proliferation of invasive and intrusive species.

A significance of impacts assessment undertaken for the species in accordance with the MNES Significant impact guidelines 1.1 (DotE 2013) determined that the proposed development is likely to have a significant impact on the species. Refer to Section 4 Matters of National Environmental Significance Assessment Glass Manufacturing and Recycling Facility.

Grey-headed Flying Fox *(Pteropus poliocephalus)*

The grey-headed flying fox is listed as Vulnerable under the EPBC Act. The species was no recorded within the proposed development area during field surveys, however vegetation representing suitable foraging habitat was present within the proposed development area. A known roosting camp that has been continuously used by the grey-headed flying-fox is located 5km west of the proposed development area at Mt Warren Park. No roost camps occur within or adjacent to the proposed development area and the vegetation within the proposed development area does not constitute potential roosting habitat.

Potential impacts include:

- Habitat loss and fragmentation – The proposed development is anticipated to result in the loss of 4.80 ha of grey-headed flying-fox habitat. Due to the presence of winter and spring flowering food trees species, habitat is considered habitat critical to the survival of the species.
- Exploitation, particularly in commercial fruit growing areas
- Competition and hybridisation
- Pollutants, electrocution and pathogens.

A significance of impacts assessment undertaken for the species in accordance with the MNES Significant impact guidelines 1.1 (DotE 2013) determined that the proposed development is unlikely to have a significant impact on the species. Refer to Section 4 and 5 Matters of National Environmental Significance Assessment Glass Manufacturing and Recycling Facility. Refer to Section 4 Koala habitat values assessment – Tree Survey Plan Glass Manufacturing and Recycling Facility.

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

Yes

Describe why you consider this to be a Significant Impact. *

Koala (*Phascolarctos cinereus*)

A significance of impacts assessment undertaken for the species in accordance with the MNES Significant impact guidelines 1.1 (DotE 2013) determined that the proposed development is likely to have a significant impact on the species. Refer to Section 5 Matters of National Environmental Significance Assessment Glass Manufacturing and Recycling Facility.

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

No

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

The proposed development area is unlikely to support a permanent koala population due the small spatial scale, limited availability of foraging resources and presence of multiple threats. Rather, the species is likely to occur in a temporary nature or as a dispersal pathway to alternative areas of habitat. The proposed development is unlikely to be necessary to maintain genetic diversity and long-term evolutionary development. Whilst the proposed development is likely to be utilised for dispersal, alternative routes are available to surrounding areas of suitable habitat. These areas include the Woolshed Parklands and the Yellowood Reserve which are situated to the east and north of the project, respectively. The proposed development is unlikely to represent habitat necessary to ensure the long-term future of the species or ecological community through reintroduction or re-colonisation. This is owing to a long history of disturbance within the proposed development area (clearing beginning in 1971), sub-optimal condition of vegetation and presence of multiple threats within the surrounding landscape.

The proposed development area is not located within a flood prone area and the surrounding landscape has been converted into cane farming and urban development areas. The remaining area of suitable habitat for the koala are not listed as flood prone areas. Additionally, the proposed development areas utilisation by the koala following fire is unknown. Whilst several barriers to fire spread occur in the surrounding landscape (mostly major roads) the proposed development area could function as refugia habitat if a fire was ignited in the woodland communities adjacent to the proposed development. However, there is potential for the proposed development area to be considered habitat critical to the survival of the koala, due to the potential for the species to temporarily utilise the proposed development area for foraging and dispersal, with some restrictions due to existing developed areas and heavily trafficked road corridors.

The proposed development is unlikely to lead to a long-term decrease in the size of an important population for the species. Whilst the proposed development area supports a range of known feed trees for the koala and remnant vegetation provides both suitable foraging and resting habitat, the site is surrounded on all sides by busy roads and industry allotments. The proposed development is unlikely to reduce the area of occupancy for the koala. Eucalypt regrowth occurring along the northern boundary of the proposed development will be retained to facilitate ongoing dispersal for the species. Therefore, although the removal of vegetation is likely to reduce the species dispersal capabilities, the proposed works are unlikely to fragment an existing important population into two or more populations. The proposed development is not expected to disrupt the breeding cycle of the population. Although clearing will generate additional habitat fragmentation and reduce the area of available habitat at a local level, the extent of habitat disturbance is not likely to decrease the availability or quality of habitat available to the local population to the extent that the species will decline.

With mitigation measures implemented as proposed for feral species control, the proposed development is unlikely to result in the introduction of invasive species that are harmful to the koala.

The proposed development is not anticipated to introduce new diseases that may cause the species to decline. Mitigation measures have been recommended to reduce stress during proposed development construction and operation, including sequential clearing, site speed limits, the use of an experienced spotter-catcher during clearing and the requirement to allow koalas to self-disperse. Together, these measures are designed to reduce disturbance-related stress and risk of disease emergence and transmission. Additionally, the species is susceptible to Phytophthora cinnamomi due the soil fungus's ability to infect eucalypt species. Given the low quality of habitat within the proposed development area and the relative abundance of suitable habitat remaining within the region, the proposed development is not expected to interfere with the recovery of the species.

Considering the proposed development will require the removal of all vegetation within the proposed development footprint (11.95 ha in total), including areas that represent suitable foraging habitat for the species, as well as areas that contain low value habitat for koala (such as the cleared land with dense grass cover and absent or scattered trees, which would serve as movement habitat only), the proposed works have potential to adversely affect habitat critical to the survival of a species. Refer to Section 4.1 and 5.1 Matters of National Environmental Significance Assessment Glass Manufacturing and Recycling Facility.

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

Development of the proposed Glass Recycling and Manufacturing Facility will require the removal of all vegetation within the greenfield Lot 2 on WD4654, excluding retention of an existing vegetation buffer along Stapylton Jacobs Well Road, and the removal of selected vegetation within the brownfield Lot 2 on SP189558. The following measures will be undertaken for the proposed development to avoid or reduce impacts to MNES species:

A Flora and Fauna Management Plan to be developed and include:

- details relevant to the general management of flora and fauna

- protocols to limit injury and mortality to fauna

- a wildlife incident response procedure

- contact details for local wildlife carers and veterinary practices

- protocols for management of risks associated with open excavations and trenching

It will include a Koala Management Plan.

A High-Risk Species Management Program (SMP) will be required for tampering with special least concern breeding places in accordance with the requirements of Section 332 of the Nature Conservation (Wildlife Management) Regulation 2006.

Pre-clearance surveys for animal breeding places and resident animals by a qualified fauna spotter/catcher, with relocation of animals to suitable habitat areas in the region.

Educate all workers onsite regarding the presence of the EPBC Act and NC Act listed species, particularly species with increased risk of injury and mortality such as the koala.

Outdoor waste bins to contain rubbish and food scraps should be designed/located and managed to prevent access by animals (native or feral).

Employees will not bring domestic animals to the site.

Fencing will be established between remaining buffer vegetation and cleared areas of the site.

Sequential clearing practices and the use of a suitably qualified koala spotters in accordance with guidelines will be employed to reduce the extent of impacts on koalas.

Enforce on-site speed limits to restrict the incidence of vehicle strike.

An area of vegetation buffer will be retained along the northern boundary of the site referred to to as a vegetation buffer area.

Lighting should be directed to minimise light spill into adjacent areas of vegetation.

A landscape and vegetation management plan will include:

- measures to minimise weeds

- use of salvaged or artificial habitat features and nesting sites, such as hollow logs

- use of native vegetation for plantings.

Use of wetland vegetation species to create an artificial wetland area (i.e where the bio retention basin is proposed).

Refer to Section 4.1.9 Matters of National Environmental Significance Assessment Glass Manufacturing and Recycling Facility.

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

Development of the proposed Glass Recycling and Manufacturing Facility will require the removal of all vegetation within the greenfield Lot 2 on WD4654, excluding retention of an existing vegetation buffer along Stapylton Jacobs Well Road, and the removal of selected vegetation within the brownfield Lot 2 on SP189558. The following measures will be undertaken for the proposed development to avoid or reduce impacts to MNES species:

A Flora and Fauna Management Plan to be developed and include:

- details relevant to the general management of flora and fauna

- protocols to limit injury and mortality to fauna

- a wildlife incident response procedure

- contact details for local wildlife carers and veterinary practices

- protocols for management of risks associated with open excavations and trenching

It will include a Koala Management Plan.

A High-Risk Species Management Program (SMP) will be required for tampering with special least concern breeding places in accordance with the requirements of Section 332 of the Nature Conservation (Wildlife Management) Regulation 2006.

Pre-clearance surveys for animal breeding places and resident animals by a qualified fauna spotter/catcher, with relocation of animals to suitable habitat areas in the region.

Educate all workers onsite regarding the presence of the EPBC Act and NC Act listed species, particularly species with increased risk of injury and mortality such as the koala.

Outdoor waste bins to contain rubbish and food scraps should be designed/located and managed to prevent access by animals (native or feral).

Employees will not bring domestic animals to the site.

Fencing will be established between remaining buffer vegetation and cleared areas of the site.

Sequential clearing practices and the use of a suitably qualified koala spotters in accordance with guidelines will be employed to reduce the extent of impacts on koalas.

Enforce on-site speed limits to restrict the incidence of vehicle strike.

An area of vegetation buffer will be retained along the northern boundary of the site referred to to as a vegetation buffer area.

Lighting should be directed to minimise light spill into adjacent areas of vegetation.

A landscape and vegetation management plan will include:

- measures to minimise weeds

- use of salvaged or artificial habitat features and nesting sites, such as hollow logs

- use of native vegetation for plantings.

Use of wetland vegetation species to create an artificial wetland area (i.e where the bio retention basin is proposed).

Refer to Section 4.1.9 Matters of National Environmental Significance Assessment Glass Manufacturing and Recycling Facility.

Visy will propose an environmental offset to counter the identified impacts as per the requirements of the Queensland Environmental Offsets Policy 2014 and the offset strategy is being developed for the project as part of the development application.

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
No	No	Calidris acuminata
No	No	Calidris canutus
No	No	Calidris ferruginea

Direct impact	Indirect impact	Species
No	No	Calidris melanotos
No	No	Charadrius leschenaultii
No	No	Cuculus optatus
No	No	Gallinago hardwickii
No	No	Hirundapus caudacutus
No	No	Limosa lapponica
No	No	Monarcha melanopsis
No	No	Myiagra cyanoleuca
No	No	Numenius madagascariensis
No	No	Rhipidura rufifrons
No	No	Symposiachrus trivirgatus
No	No	Tringa nebularia

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

No

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

The PMST search identified 17 migratory species that are predicted to occur within the project area based on bioclimatic modelling, knowledge of species' distributions and habitat preferences. Of these, five species have been previously recorded within the study area (DES, 2021a; Biomaps, 2021). However, no migratory species have been historically recorded within the project area. A likelihood of occurrence assessment was undertaken for migratory species and was based on a review of species distributions and habitat requirements, historical records for the region, and the results of habitat assessments and information recorded during field surveys and details are provided in the MNES Assessment Report. The proposed development is not considered to have a direct or indirect impact on migratory species for the following reasons:

- The proposed development will result in the clearing of vegetation, however it is not considered to be optimal habitat for the five species have been previously recorded within the study area. Due to the low current utilisation of the project area by the species, the lack of suitable habitat within the project area, and suitable foraging habitat is more widely distributed within the wider surrounding landscape, the project is unlikely to have any significant impact to migratory species. To address the loss of vegetation within the project area, an area of vegetation will be retained along the boundary of the project area adjoining Stapylton Jacobs Well Road reserve and vegetation within this area will be retained. The vegetation buffer area has a total area of 1.15 ha. Landscaping is also proposed in this area and will consist of native species endemic to the area. Visy will also implement a Flora and Fauna Management Plan during the construction phase which will include:
    - Details relevant to the general management of flora and fauna
    - Protocols to limit injury and mortality to fauna
    - A wildlife incident response procedure
    - Contact details for local wildlife carers and veterinary practices
    - Protocols for management of risks associated with open excavations and trenching.
- While activities during construction have the potential to facilitate establishment of invasive species, management measures will be implemented to mitigate the risk of invasive species introduction and/or spread of invasive species and this will be addressed by a construction environmental management plan.
- The proposed development is not considered to disrupt the lifecycle of the migratory species. Of the 5 migratory species that may occur the project area there is sub-optimal habitat within the project area and the species are not considered to use the project area to forage or nest. Furthermore, any disturbance during construction will be highly localised and therefore unlikely to impact an ecologically significant proportion of the migratory species population. An area of vegetation will be retained along the boundary of the project area adjoining Stapylton Jacobs Well Road reserve and vegetation within this area will be retained. The vegetation buffer area has a total area of 1.15 ha. Landscaping is also proposed in this area and will consist of native species endemic to the area. Visy will also implement a Flora and Fauna Management Plan during the construction phase which will include:
    - Details relevant to the general management of flora and fauna
    - Protocols to limit injury and mortality to fauna
    - A wildlife incident response procedure
    - Contact details for local wildlife carers and veterinary practices

- Protocols for management of risks associated with open excavations and trenching.

Refer to Section 4.2 Matters of National Environmental Significance Assessment Glass Manufacturing and Recycling Facility.

Nuclear

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

No

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

The proposed action will not have direct and/or indirect impact on this protected matter.

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

No

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

There are no Commonwealth marine areas within or surrounding the project area, therefore the proposed development is not considered to have direct and/or indirect impacts Commonwealth marine areas.

Great Barrier Reef

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

No

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

The proposed action is not located near or within the Great Barrier Reef.

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

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

No

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

The proposed action does not involve mining or coal seam gas.

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

No

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

The proposed action is not located near or within the Commonwealth land.

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

No

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

The proposed action is not located near or within Commonwealth heritage places overseas.

Commonwealth or Commonwealth Agency

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:

- Threatened Species and Ecological Communities (S18)

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)
- 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

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

No

Describe why alternatives for your proposed action was not possible. *

As part of the Queensland State Government and the Brisbane City Council's success in securing the Olympics for Brisbane in 2032, Visy's site in South Brisbane had been identified in planning as the preferred site for an International Broadcasting Centre. Visy recognises the priority given to planning for the Olympics and engaged with the State Government and the Brisbane City Council to achieve a mutually agreed solution in acquiring Visy's site. Visy's existing glass manufacturing facility in South East Queensland is located on the South Brisbane site. The sale of the site to the Brisbane City Council will see Visy's existing glass manufacturing facility remain on the site for at least the next 2 ½ to 3 years to enable the construction of a new facility at Stapylton. This will promote a smooth and managed transition for our customers.

The existing South Brisbane site has been a glass manufacturing operation since at least 1920 with various development and modernisation upgrades of the facility occurring over time. One of the two existing glass furnaces, which produce molten glass and are therefore fundamental to glass production, is approaching end-of-working-life and must undergo a standard glass furnace complete refurbishment in a couple of years to maintain its production capacity. A glass furnace refurbishment cost is of the order $60-70 million. The fundamental need for the proposed modern Glass Recycling and Manufacturing Facility is therefore to relocate Visy's existing South Brisbane glass manufacturing facility, in particular, to ensure continuity of container glass supply for customers in South East Queensland. The investment will also ensure local glass manufacturing capacity can cater for sustainable growth as the Queensland market continues to expand.

Beyond this fundamental need, the proposed facility will also integrate an existing Visy glass recycling operation in Crestmead to provide strategic logistic and commercial efficiencies through the co-located operations. The proposed site is adjacent to existing Visy can manufacturing and cardboard box manufacturing facilities and will create a beverage container precinct.

The key objectives of the proposed development are to:

- Develop a state of the art glass recycling and manufacturing facility in SE Qld to improve local container glass manufacturing performance and productivity and ensure continuity of supply to Qld based beverage customers
- Integrate glass recycling and manufacturing into a single facility to provide strategic logistic, commercial and environmental efficiencies
- Invest in local glass manufacturing to facilitate a path to support and enable anticipated growth in the Queensland beverage market.
- Enable Visy to continue to Close the Loop on Glass and increase the average recycled content of container glass from the current 30% to 70%, supporting Qld's strategy to move towards a circular economy for waste[1]
- Future proof glass recycling in Qld with modern oxy fired glass furnace technology with potential to utilise hydrogen fuel and modern glass beneficiation technology to maximise cullet yield and quality with potential to increase throughput
- Realise the infinite recycling potential of glass and keep container glass circulating in Australia in line with national recycling regulations[2] which aim to reduce the impacts of waste material and build capacity to turn recyclable waste into high-value, recycled commodities.

In section 1.5 of the Matters of National Environmental Significance Assessment Glass Manufacturing and Recycling Facility, Visy has considered alternative sites, alternative design; and do nothing approach.

5. Lodgement

5.1 Attachments

3.1 Current condition of the project area's environment

#1.	Matters of National Environmental Significance Assessment Glass Manufacturing and Recycling Facility	Document	The report has been prepared to identify and assess any potential impacts to MNES from activities associated with construction and operation of the proposed development. The report specifically determines whether any activities associated with the proposed development are likely to have a significant impact on MNES.

3.4 Hydrology characteristics that apply to the project area

#1.	Flood and Stormwater Assessment Glass Manufacturing and Recycling Facility	Document	The purpose of this report was to conduct a flood assessment of the subject site to understand the flood impacts to the site and development and understand the changes to flood volumes across the wider catchment in the pre- and post-development scenarios.

4.1 (Threatened Species and Ecological Communities) Why your action has a direct and/or indirect impact on the identified protected matters

#1.	Koala habitat values assessment – Tree Survey Plan Glass Manufacturing and Recycling Facility 222 &	Document	This report details the findings of the koala tree survey undertaken within the project area.

5.2 Declarations

Completed Referring party's declaration

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

ABN	39008488373
Organisation name	GHD PTY LTD
Organisation address	Level 13, The Rocket, 203 Robina Town Centre Drive, Robina QLD 4226
Representative's name	Sarah Wilson
Representative's job title	Senior Environmental Planner
Phone	07 5413 8133
Email	sarah.wilson@ghd.com
Address	Level 13, The Rocket, 203 Robina Town Centre Drive, Robina QLD 4226

☑ 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, **Sarah Wilson of GHD 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	94004230326
Organisation name	Visy Glass Operations (Australia) Pty Ltd
Organisation address	Level 11, 2 Southbank Boulevard, SOUTHBANK VIC 3006
Representative's name	Anne Trevena
Representative's job title	Environment Manager
Phone	0400 866 436
Email	anne.trevena@visy.com.au
Address	Level 11, 2 Southbank Boulevard, SOUTHBANK VIC 3006

☑ 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, **Anne Trevena of Visy Glass Operations (Australia) 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.

☑ 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, **Anne Trevena of Visy Glass Operations (Australia) 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. *

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