Olympic Dam Smelter Refinery Expansion (SRE) Project.

Application Number: **02733** Commencement Date: **23/12/2024** Status: **Locked**

1. About the project

1.1 Project details

1.1.1 Project title *

Olympic Dam Smelter Refinery Expansion (SRE) Project.

1.1.2 Project industry type *

Mining

1.1.3 Project industry sub-type

Other

1.1.4 Estimated start date *

23/12/2026

1.1.4 Estimated end date *

21/12/2085

1.2 Proposed Action details

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

BHP Olympic Dam Corporation Pty Ltd (BHP) is proposing to develop the Smelter and Refinery Expansion (SRE) Project (the Action), located at the existing Olympic Dam (OD) mine in far north South Australia (SA), approximately 580 km north-north-west of Adelaide.

Key elements of the proposed Action include:

- expansion of, and additions to, the existing smelter and refinery to enable production of up to 650,000 tonnes per annum (tpa) copper plus associated products (gold, silver, uranium and acid)
- introduction of two-stage smelting (TSS) involving the installation of a new primary Flash Smelting Furnace (FSF) to produce copper matte, adding material smelting capacity
- conversion of the existing direct blast furnace (DBF) to a flash converting furnace, that will process the matte into blister
- additional acid plants of similar nature and scale to the existing acid plant
- expanded electro-refinery and expansion of, or new, precious metals recovery facilities to produce cathode copper and gold, and silver ingot.

The proposed Action excludes operations which enable existing approved production of up to approximately 200,000 tpa total copper or activities associated with scheduled campaign maintenance 2027 (SCM27). The Action does not involve increasing the production of underground mining at Olympic Dam beyond already approved production rates. The expansion of the smelter and refinery relies on ore from existing approved mines (including Olympic Dam, Carrapateena and Prominent Hill), and the yet to be constructed Oak Dam (which is subject to separate approval). It is a brownfields project and if approved, existing business as usual facilities will be utilised until such time as those facilities require replacement or expansion (at which time approvals will be sought).

Purpose

The objective of the SRE Project is to expand BHP's smelter and refinery capacity, enabling the Copper South Australia (CuSA) growth plan by:

- increasing copper production capacity up to 650,000 tpa of total copper (plus associated products) from the current average output of approximately 200,000 tpa
- delivering a sustainable, highly productive, and more resilient smelting and refining flowsheet that enables the OD copper growth pathway
- delivering reliable and predictable production outcomes to realise regional opportunities.

Existing OD operations include a mining concentrator, smelter and refinery, with the smelter treating high grade copper concentrates through a single-stage DBF smelter, with an average output of approximately 200,000 tpa of total copper (and associated products).

The current smelting process has suited OD's high (>1.5) copper to sulphur (Cu:S) Northern Mining Area (NMA) resource since the expanded mine and surface operation was commissioned in 1998. Since 2017, mining has gradually moved away from the NMA into the Southern Mining Area (SMA), providing a lower Cu:S ore feed. Mining from higher Cu:S areas in the NMA will occur for the Life of Asset, however the NMA volumes will reduce in proportion to the increase in SMA volumes over time.

Since 2021, further drilling and associated mineralogy studies have confirmed that the Cu:S ratios of the smelter feed will decline to a point where a change in configuration of the smelter is required to maintain the current sulphur removal efficiency.

In addition, BHP's 2023 acquisition of OZ Minerals' assets (including the Carrapateena and Prominent Hill) has resulted in the establishment of a CuSA province similar to other commodity-based integrated operations established by BHP. As part of the establishment of the CuSA province, and subject to further approvals, the proposed Action would enable OD to receive, blend and smelt copper concentrates from Carrapateena and Prominent Hill mining operations, as well as possible future mining operations (e.g. Oak Dam) and maintain the ability to receive copper concentrate from other third-party suppliers.

Activities needed to deliver the proposed Action

Key project and supporting infrastructure elements which form part of the proposed Action include:

- a new concentrate handling and blending facility

- additional concentrate leach capacity (note the proposed Action will not materially change existing uranium production, refer to Section 4.1.6).
- upgrade and expansion of existing smelter feed preparation
- a new primary smelting furnace to produce copper matte and conversion of the existing DBF to convert matte to blister, including additional anode furnace and anode casting infrastructure
- a new slag concentrator
- new off-gas management infrastructure, including additional gas and dust handling equipment
- new acid plants
- a new electro-refinery and associated infrastructure
- a new slimes treatment plant and expansion of, or new, precious metals refinery facility.

Associated with the change in smelter configuration and additional refinery and acid plant infrastructure, the SRE Project would require new supporting facilities, infrastructure and services and the upgrade, removal and/or relocation of existing facilities and services within the existing OD Special Mining Lease (SML).

In addition to the above SRE Project components, changes to the electricity power transmission requirements through the existing 275 kilovolt (kV) line from Davenport substation to Olympic Dam mine, within Clause 28 land under the *Roxby Downs (Indenture Ratification) Act 1982* (SA)), will require isolated areas of vegetation clearance to maintain the regulatory safe distances between the 275kV line and the ground surface.

See **Att 1 – Project Description Summary Report** for further details of the proposed Action and **Att 2 – Map Series (Map 1** for locality & **Map 4** for layout**)**.

Additional developments occurring as part of the proposed Action

The Action would be supported by existing and new facilities, infrastructure and processes on and off the SML, which are the subject of existing approvals and/or regulation or will be subject to approval and implementation prior to the commencement of the implementation of the Action. These supporting activities are business-as-usual (BAU) operations associated with enabling and maintaining existing copper production and activities associated with preparation for, and execution of, SCM27 works.

Prefabricated modules associated with both SCM27 and the Action would be transported directly to site for assembly. However, additional laydown areas, upgraded road intersections and/or road widening may be required to enable safe transport of large, modularised components during construction.

The locations of these potential activities are currently not defined. However, these would to the extent required, be established as a component of the SCM27 works with only minor, if any, modifications required to support the logistics of the Action.

Project Area and Disturbance Footprint

The ‘Project Area’ is the boundary around the SRE Project including the SML Area (located within the SML) and the Electricity Infrastructure Ground Re-Profiling Area (EIGR Area), located off the SML on Clause 28 land.

Within the Project Area and Disturbance Footprint, the following terms are used to reference discrete components of the Action which represent different potential construction and operational impacts. These include:

- SML Area: the extent of the proposed SRE Project required for construction and operation within the SML encompassing the following discrete areas:
- SRE Area: includes the existing brownfield plant area, proposed facility relocation(s), proposed plant and laydown areas
- General Infrastructure Area: includes the Proposed infrastructure laydown areas, stormwater dam location and topsoil/subsoil storage

- Water Infrastructure Area: the extent of the proposed water infrastructure and ancillary activities including pipeline and water storage dam locations.
- EIGR Area: the extent of the isolated proposed vegetation disturbance required to maintain regulatory clearance distances between the 275 kV transmission line and the ground surface within Clause 28 land. It is noted that the transmission line and infrastructure are already in place, but additional electricity loads required for the SRE Project will result in increased transmission line temperature and more pronounced line sagging and therefore changes to existing clearance distances to enable safe operation.

The Disturbance Footprint is the area of disturbance required within the Project Area, excluding existing disturbance, for the infrastructure associated with the Action, and buffer areas to enable safe construction and execution of the Action. The buffers included within the Disturbance Footprint are also considered to allow for potential indirect impacts to vegetation (and habitat) because of dust deposition, or saline overspray from dust suppression. The Disturbance Footprint of the Action is approximately 249.3ha.

Land tenure

The OD mine is located on freehold land held by BHP subject to a Special Mining Lease granted to BHP under the Olympic Dam and Stuart Shelf Indenture and the ratifying *Roxby Downs (Indenture Ratification) Act 1982* (SA).

The SML Area is located entirely within the OD SML. The EIGR Area comprises 11 discrete parcels located along the existing transmission line corridor on Clause 28 land.

See **Att 1 Project Description Summary Report, Section 1.2.1, pg 9** for land tenure details**.**

Nature of impacts to the environment due to the action

Direct impacts to listed species as a result of the Action include vegetation clearance and potential for vehicle strike to fauna. Additional indirect impacts are also plausible, such as dust deposition on vegetation resulting in decline in vegetation health, weed introduction resulting in reduced habitat quality, or noise or vibration disturbance resulting in avoidance of habitat or less successful breeding. All plausible impact pathways (direct and indirect) are considered where relevant. refer to **Att 3 Significant Impact Assessment (Table 4.1, pg 29)**.

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

No

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

Commonwealth Legislation

Under the *Environment, Protection and Biodiversity Conservation Act 1999* (EPBC Act), proposed actions (i.e. activities or projects) with the potential to significantly impact matters protected by the EPBC Act must be referred to the Australian Minister for the Environment to determine whether they are controlled actions and require approval from the Minister.

The following matters are defined as protected matters by Part 3 of EPBC Act:

- matters of national environmental significance (MNES)
- the environment of Commonwealth land
- the environment in general if they are being carried out by a Commonwealth Government agency.

MNES, as defined under the EPBC Act, include:

- world heritage properties
- places listed on the National Heritage Register
- Ramsar wetlands of international significance
- threatened flora and fauna species and ecological communities
- migratory species
- Commonwealth marine areas
- nuclear actions (including uranium mining)
- water resources, in relation to coal seam gas or large coal mining development.

The Action is being referred to the commonwealth minister for the Environment given the Action's potential impacts to threatened fauna species. No other MNES are considered to be potentially impacted by the Action.

SA State Legislation

Development approval is required for the Action under the *Planning, Development and Infrastructure Act 2016* (SA) (PDI Act).

The SRE Project was declared an Impact Assessed development pursuant to section 108(1)(c) and 108(7) of the PDI Act in August 2024. The declaration subjects the SRE Project to an Environment Impact Statement (EIS) process requiring detailed environmental, social and economic assessment.

A scoping application is being prepared by BHP to inform the development of EIS Assessment Requirements by the State Planning Commission. The EIS assessment requirements issued by the State Planning Commission will summarise all potential issues needing to be addressed by BHP at a South Australian State-level and may also highlight any further information required by the Minister to enable a proper assessment of the proposed SRE Project.

See **Att 1 – Project Description Summary Report, Section 2, pg 14** for further details of the proposed Action.

Other SA Approvals

There are several other approvals, permits, licences or authorisations required under other SA legislation. South Australian legislation applicable to the Action are outlined below.

Native Vegetation Act 1991 (SA)

The Action will require clearance of remnant native vegetation. The *Native Vegetation Act 1991* (SA) (NV Act) provides protection for native vegetation in South Australia and sets out a process for applying to clear vegetation. Approval to clear native vegetation in South Australia is required under the NV Act unless exempted under the *Native Vegetation Regulations 2017*.

Native vegetation clearance approval will occur concurrently with the EIS process under the PDI Act.

National Parks and Wildlife Act 1972 (SA)

Potential impacts to state-listed species under the *National Parks and Wildlife Act 1972* (NPW Act) are considered within vegetation clearance approval and offset calculations.

Landscape South Australia Act 2019 (SA)

The Action falls within the South Australian Arid Lands Region, with the Landscape South Australia Act 2019 providing guidance for biodiversity management including management of pests, exotic flora and fauna, and plant diseases if relevant. The location of the Action also influences the type of vegetation assessments required for any proposed impacts to native vegetation and associated approvals.

Environment Protection Act 1993 (SA)

The *Environment Protection Act 1993* (EP Act) sets up a framework that imposes both a general environmental duty and a licensing regime where activities of prescribed environmental significance require a licence from the Environment Protection Authority (EPA) to operate. A valid development approval or EPA-issued Works Approval is required prior to granting a licence for a new development.

Olympic Dam currently operates under an existing EPA licence (EPA 1301). It is envisaged that additional licensing requirements for the Action (if any) would be incorporated into the existing licence in accordance with Section 46 of the EP Act.

Aboriginal Heritage Act 1979 (SA)

Olympic Dam operates under the Olympic Dam and Stuart Shelf Indenture (Indenture), ratified by the *Roxby Downs (Indenture Ratification) Act 1982* (Ratification Act). Section 9 of the Ratification Act gives the *Aboriginal Heritage Act 1979* (SA) (AHA 1979) application to Olympic Dam operations that are carried out under the Indenture and occur within the Olympic Dam Area or the Stuart Shelf Area.

Olympic Dam holds ministerial consents under the AHA 1979 that authorise Olympic Dam Corporation to excavate land, explore for items of Aboriginal heritage and to remove or interfere with items of Aboriginal heritage in and around the SML.

Miscellaneous permits and licences

The Action may require permits and licences under the *Dangerous Substances Act 1979* (SA) and *Controlled Substances Act 1984* (SA), *Explosives Act 1936* (SA), *Public and Environmental Health Act* 1987 (SA) and *Radiation Protection and Control Act 2021* (SA).

Radiation protection aspects of the proposed activities would be managed in accordance with the *Radiation Protection and Control Act 2021* (SA).

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. *

BHP is committed to ongoing and meaningful engagement with its stakeholders and ensures that each of its operating mines and proposed projects has its own, tailored Stakeholder Engagement Plan which identifies its key stakeholders and provides an action plan for engagement.

The Stakeholder Engagement Plan(s) developed for the Action are live documents that are reviewed and updated on a regular basis. Key stakeholders recognised in the plan include Indigenous Peoples, pastoral lease holders, government stakeholders, the community and the general public.

An SRE Project Stakeholder Engagement and Management Plan and Indigenous Peoples Engagement Strategy has been developed by BHP, with reference to our partnering approach and the Better Together engagement principles (Government of South Australia 2020) – see **Att 5 Stakeholder Engagement Plan**. Open and honest dialogue with stakeholders, providing opportunities to be involved and to provide feedback on expectations, concerns and interests are important components of BHP's engagement approach.

Consultation to date

BHP maintains ongoing consultation with stakeholders regarding current and proposed operations through a number of avenues including regular meetings and/or briefings with Traditional owners and other Indigenous stakeholders, the Roxby Downs community, pastoral lease owners and government agencies.

On the first of October 2024 a presentation was given by the Asset President to the Upper Spencer Gulf Cities (common purpose group) which consists of the Mayors and CEOs of Port Augusta, Whyalla and Port Pirie. The presentation gave a general overview of the Copper South Australia Growth Program and spoke

specifically to the SRE Project including the EPBC referral and future stakeholder engagement.

A presentation was given to the Roxby Stakeholder Engagement Group (SEG) on Monday 18th November 2024, and two drop-in community sessions were held in Roxby Downs on the 11th December 2024. These sessions were advertised on social media, local radio and bulletin boards across Roxby Downs. The SEG is made up of a diverse range of stakeholders and members of the community who have an interest in Olympic Dam, membership is 10 people external to BHP.

BHP is developing engagement materials in the form of an information sheet and an animation which will be made available on the BHP website.

1.3.1 Identity: Referring party

Privacy Notice:

Personal information means information or an opinion about an identified individual, or an individual who is reasonably identifiable.

By completing and submitting this form, you consent to the collection of all personal information contained in this form. If you are providing the personal information of other individuals in this form, please ensure you have their consent before doing so.

The Department of Climate Change, Energy, the Environment and Water (the department) collects your personal information (as defined by the Privacy Act 1988) through this platform for the purposes of enabling the department to consider your submission and contact you in relation to your submission. If you fail to provide some or all of the personal information requested on this platform (name and email address), the department will be unable to contact you to seek further information (if required) and subsequently may impact the consideration given to your submission.

Personal information may be disclosed to other Australian government agencies, persons or organisations where necessary for the above purposes, provided the disclosure is consistent with relevant laws, in particular the Privacy Act 1988 (Privacy Act). Your personal information will be used and stored in accordance with the Australian Privacy Principles.

See our Privacy Policy to learn more about accessing or correcting personal information or making a complaint.

Alternatively, email us at privacy@awe.gov.au.

☑ **Confirm that you have read and understand this Privacy Notice ***

1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details

ABN/ACN	99007835761
Organisation name	BHP OLYMPIC DAM CORPORATION PTY LTD
Organisation address	3000 VIC

Referring party details

Name	John Wynne
Job title	Principal Environment - Asset Approvals
Phone	0411624716
Email	john.wynne@bhp.com
Address	10 Franklin Street, Adelaide, 5000, SA

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	99007835761
Organisation name	BHP OLYMPIC DAM CORPORATION PTY LTD
Organisation address	3000 VIC

Person proposing to take the action details

Name	Sally Lamb
Job title	Manager Asset Environment Approvals & Sustainability
Phone	0488036077
Email	sally.lamb@bhp.com
Address	Level 6, 10 Franklin Street, Adelaide, SA, 5000

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. *

BHP Olympic Dam Corporation Pty Ltd (BHP) has operated the Olympic Dam mine, where the Action is located, since 2005. Extensive monitoring, regulation, reporting and review of the operation has occurred over that time and the operation has had no significant adverse impacts on the environment. Environmental performance is reported annually to the State Government. Past copies of the annual environmental management and monitoring report are available on the website of the SA Government Department for Energy and Mining.

(https://www.energymining.sa.gov.au/industry/minerals-and-mining/mining/major-projects-and-mining-activities/major-operating-and-approved-mines/olympic-dam)

BHP will maintain this high standard of environmental management for the proposed Action activities. The Olympic Dam mine is implementing an AS/NZS ISO 14001:2015 certified Environmental Management System, which will be amended (where necessary) to incorporate the proposed Action.

Within BHP, the management of environment and community is guided by the BHP Charter and Our Requirements Standards (ORS). The ORS cover the entire lifecycle of operations, from exploration and planning through to operation and closure (decommissioning, remediation and rehabilitation).

The relevant objectives of the ORS are to support the implementation of the Charter and the Guide to Business Conduct across BHP and include:

- Providing a risk-based environment and community management system framework, consistent with BHP Risk Management Policy; international policies, standards and management practices to which BHP has committed. These international standards and management practices include United Nations Global Compact; United Nations Universal Declaration of Human Rights; International Council on Mining and Metals (ICMM) Sustainable Development Framework; World Bank

Operational Directive on Involuntary Resettlement; US-UK Voluntary Principles on Security and Human Rights; recommendations of the International Commission on Radiological Protection (specifically the system of dose limitation); negotiated agreements with local communities and other regional commitments.
- Setting out and formalising the expectations for progressive development and implementation of more specific and detailed Environment and Community management systems at all levels of BHP.
- Providing auditable criteria, against which environment and community management systems across BHP can be measured.
- Driving continual improvement towards leading industry practice.

In line with current requirements for the Olympic Dam mine, the Environmental Performance of the proposed Action will be reported annually in compliance with a State Government approved Environment Protection and Management Program. The compliance report will be submitted to the State Government and will be publicly available.

There are no past or present 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 the action.

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

BHP Olympic Dam Corporation Pty Ltd (BHP) has operated the Olympic Dam, where the Action is located, since 2005. Extensive monitoring, regulation, reporting and review of the operation has occurred over that time and the operation has had no significant adverse impacts on the environment. Environmental performance is reported annually to the State Government. Past copies of the annual environmental management and monitoring report are available on the website of the SA Government Department for Energy and Mining.

(https://www.energymining.sa.gov.au/industry/minerals-and-mining/mining/major-projects-and-mining-activities/major-operating-and-approved-mines/olympic-dam)

BHP will maintain this high standard of environmental management for the proposed Action activities. The Olympic Dam mine is implementing an AS/NZS ISO 14001:2016 certified Environmental Management System, which will be amended (where necessary) to incorporate the proposed Action.

BHP Environmental Management System (EMS)

Within BHP, the management of environment and community (EC) is guided by the BHP Charter and Group Level 'Our Requirements' Documents. The 'Our Requirements' Documents cover the entire lifecycle of operations, from exploration and planning through to operation and closure (decommissioning, remediation and rehabilitation). The relevant objectives of 'Our Requirements' are to:

- Support the implementation of the Charter and the Guide to Business Conduct across BHP.
- Providing a risk-based environment and community management system framework, consistent with BHP Risk Management Policy; international policies, standards and management practices to which BHP has committed. These international standards and management practices include United Nations Global Compact; United Nations Universal Declaration of Human Rights; ICMM Sustainable Development Framework; World Bank Operational Directive on Involuntary Resettlement; US-UK Voluntary Principles on Security and Human Rights; recommendations of the International Commission on Radiological Protection (specifically the system of dose limitation); negotiated agreements with local communities and other regional commitments.
- Set out and formalise the expectations for progressive development and implementation of more specific and detailed EC management systems at all levels of BHP.
- Provide auditable criteria, against which EC management systems across BHP can be measured.

- Drive continual improvement towards leading industry practice.

Guided by the Charter and 'Our Requirements' documents, the EMS (and EPMP) AT Olympic Dam are implemented through a four-tiered approach. These consist of an overarching policy (in the form of an Intergrated Management System (IMS) Policy – **refer to Att 7** of the referral submission), followed by the standards and procedures (the Environmental Management Manual (EMM), Environmental Management (EM) Program and Monitoring Programs (MPs)) that together make up the EPMP.

In line with current requirements for the Olympic Dam mine, the Environmental Performance of the proposed Action will be reported annually in compliance with a State Government approved Environment Protection and Management Program. The compliance report will be submitted to the State Government and will be publicly available.

There are no 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 the action.

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	99007835761
Organisation name	BHP OLYMPIC DAM CORPORATION PTY LTD
Organisation address	3000 VIC

Proposed designated proponent details

Name	Sally Lamb
Job title	Manager Asset Environment Approvals & Sustainability
Phone	0488036077
Email	sally.lamb@bhp.com
Address	Level 6, 10 Franklin Street, Adelaide, SA, 5000

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	99007835761
Organisation name	BHP OLYMPIC DAM CORPORATION PTY LTD
Organisation address	3000 VIC
Representative's name	John Wynne
Representative's job title	Principal Environment - Asset Approvals
Phone	0411624716
Email	john.wynne@bhp.com
Address	10 Franklin Street, Adelaide, 5000, SA

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	99007835761
Organisation name	BHP OLYMPIC DAM CORPORATION PTY LTD
Organisation address	3000 VIC
Representative's name	Sally Lamb
Representative's job title	Manager Asset Environment Approvals & Sustainability
Phone	0488036077
Email	sally.lamb@bhp.com
Address	Level 6, 10 Franklin Street, Adelaide, SA, 5000

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

Maptaskr © 2025

Powered By Esri - Sources: Esri, TomTom, Garmin, F…

2.2 Footprint details

2.2.1 What is the address of the proposed action? *

OD mine SML (CT Volume 5140 Folio 575) and Clause 28 land (see Att 1 Section 1.2.1, pg 9).

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

South Australia

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 Olympic Dam mine is located on freehold land held by BHP as a SML granted under the *Olympic Dam and Stuart Shelf Indenture and the ratifying Roxby Downs (Indenture Ratification) Act 1982* (SA). The SML covers an area of approximately 17,800 hectares. Approximately 859.3 ha of the Project Area is located on the SML. The remaining approximately 29.0 ha is associated with the EIGR Area on Clause 28 land, south of the SML.

Relevant Land Parcels and Land Tenure are indicated in **Att 1 – Project Description Summary Report, Section 1.2.1, pg 9 (Table 1.2 and Table 1.3), Att 2– Map Series, Map 5: Land tenure at Olympic Dam**.

The Action (Project Area) is approximately 888.3 ha. Within the bounds of the proposed Project Area, the Total Disturbance for the Project is 475.6 ha (including existing disturbance), with a Disturbance Footprint of approximately 249.3 ha (which excludes existing disturbance). Both the Project Area and the Disturbance Footprint are shown in **Att 2 – Map Series, Maps 3-4: SRE Project Area** and **Map 6: SRE Project Disturbance Footprint**, and corresponding GIS shapefiles for each are uploaded with this referral.

3. Existing environment

3.1 Physical description

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

Context and zoning

Olympic Dam is located approximately 560 kilometers (km) north-north-west of Adelaide and 16 km north of the Roxby Downs Township in the far north of South Australia. The proposed Action is predominantly located within the southern portion of the Olympic Dam SML, within and to the south of the existing processing area (refer to **Att 2 – Map Series, Map 2: Indicative location of key surface infrastructure**). In addition, there are 11 discrete areas comprising the EIGR Area located between the SML and Port Augusta (refer to **Att 2 – Map Series, Map 4: SRE Project areas (Clause 28 land)** for locations).

The Action is located within the Remote Areas Zone of the Planning and Design Code (PlanSA 2023). There will be no changes to zoning to facilitate the Action.

Approximately 47.6 % (226.3 ha) of the Total Disturbance has already been disturbed/cleared of native vegetation for other BAU activities.

Most of the remaining approximately 52.4 % of the Total Disturbance (i.e. the Disturbance Footprint) is remnant native vegetation (~245.8 ha), with small areas of claypans (3.22 ha) and planted vegetation (~0.25 ha).

The Action will use existing road infrastructure for transport of construction materials, import of third-party concentrate to the Olympic Dam mine, and transport of copper and associated products to Port Adelaide for export. The Olympic Dam Highway and Stuart Highway (connecting Olympic Dam Highway to Port Augusta) are the key regional roads that will be used.

See **Att 1 – Project Description Summary Report, Section 2, pg 14** for further details of the proposed Action.

Existing environment description

The Project Area is located within the Gawler Interim Biogeographic Regionalisation of Australia (IBRA) Bioregion which spans approximately 123,605 km2 (Thackway and Cresswell 1995). The Gawler Bioregion is characterised by semi-arid to arid flat to rounded landscapes, rocky hills, plains and salt-encrusted lake beds. Vegetation types across the bioregion include open woodlands of Black Oak (*Casuarina pauper*) and Wattles, open mallee scrub, chenopod shrublands (bluebush / saltbush) and tall Mulga (*Acacia aneura*) shrublands. The native vegetation across the area is generally relatively intact, but highly disturbed in some areas particularly near stock watering points or infrastructure.

More specifically, the majority of the Project Area sits within the Roxby IBRA Subregion (Project Area in SML and northern four EIGR Areas) which is characterised by low sand dunes with low open woodland and mixed grasses, sandy interdune swales within Acacia low open woodland over Chenopod low open shrubland and interdune swales with clay soils supporting Cane-grass tall grasslands. The central and southern seven EIGR Areas occur within the adjacent Arcoona Plateau IBRA Subregion.

The surrounding landscape of the majority of Project Area include the Olympic Dam mine, airport, and village, and the nearby township of Roxby Downs which is connected by a network of established roads. Beyond this, there are large areas of native vegetation to which are subject to pastoral leasing (with a long history of livestock grazing) and/or other land uses such as the Woomera Prohibited Area (Department of Defence). The closest conservation area is the Arid Recover Reserve (ARR) (20 km north of Roxby Downs, 4.7 km north of the Project Area). Lake Torrens is located approximately 40 km to the east of the Project Area (a gazetted National Park). There are no vegetation Heritage Agreements located within 50 km of the Project Area.

The ARR spans a total of 12,300 ha across six large enclosures and is Australia's largest feral proof fenced reserve. It is located north of the Olympic Dam mine and spanning 4.7 to 21 km from the SRE Project Area.

In relation to vegetation condition, the Olympic Dam SML has been fenced to exclude livestock since approximately 1988. However, rabbits are present in high numbers resulting in persistent grazing pressure, and a number of weed species are present in relatively low numbers.

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

The Olympic Dam mining and metallurgical facilities are located on the SML which includes the following existing land uses:

- underground mining.
- metallurgical processing.
- quarrying.
- storage of solid and liquid wastes (tailings retention system).
- storage of solid wastes (landfill).
- sewage treatment.
- water treatment and storage.
- extraction of saline water for mining and construction activities.
- supply of electricity (substation).
- buffer areas (vegetation/habitat).
- part of the Arid Recovery Reserve (ARR).

The proposed Action is predominantly within the Olympic Dam SML and will expand the smelter and refinery capacity at Olympic Dam. Other than the proposed Action, there are no planned future developments for this part of the SML. The EIGR Areas to the south of the SML will be located on 11 discrete areas along the existing 275 kV transmission line corridor between Davenport Substation and Olympic Dam mine. No land use change is proposed in the EIGR Areas.

The proposed Project Area has been designed to reflect the connectivity that is required between existing smelting, refining and ancillary infrastructure and upgraded and new infrastructure and facilities. It considers both construction and operation requirements, including buffers.

The areas cleared for the Proposed Action will be rehabilitated where practicable in accordance with BHP's internal standards and procedures.

Refer to **Att 1: Project Description Summary Report** for additional details about the proposed Action and **Att 2: Map Series**, **Map 2**: **Indicative location of key surface infrastructure** and **Map 4: SRE Project areas (Clause 28 land).**

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

Except for the threatened species assessed in section 3.2, the Project Area does not support any outstanding natural features. The Arid Recovery Reserve which is partially within the SML represents an important or unique value, which is within proximity to the Action and may potentially be impacted by the Action (refer to **Att 2 – Map Series, Map 8: Location of conservation areas and ARR** for the location of the ARR and conservation area in the vicinity of Olympic Dam).

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 topography in the Project Area is of generally low relief, dominated by a landform of low undulating dunes, swales and clay pans.

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.

Summary

A number of field studies and reports have been completed for Olympic Dam over several years which provide valuable data to inform the current understanding of vegetation, habitat and existing ecological values of the Project Area. This includes recent targeted MNES surveys and vegetation/habitat assessments and mapping undertaken specifically for the SRE Project (Lathwida 2024, provided here as **Att 4 SRE Project Ecology Baseline Assessment**) as well as numerous historic targeted threatened species surveys, vegetation and habitat mapping and full biological surveys as part of the ODX EIS (BHP 2009). There is also ongoing annual compliance monitoring as part of EPMP obligations for Olympic Dam, which includes several established monitoring sites within the SRE Area (e.g. 8 bird monitoring sites and three mammal trapping sites). There are also Arid Recovery monitoring inside and outside of the ARR enclosure. **Att 3 Significant Impact Assessment, Table 1-2, pg 8** provides a summary of the historical and recent investigations undertaken. **Att 4 SRE Project Ecology Baseline Assessment** provides a summary of recent survey effort and habitat assessments conducted for the SRE Project**.**

Flora

EPBC listed threatened flora species

No flora species of national conservation significance, listed under the EPBC Act have been recorded within the Olympic Dam SML. *Frankenia plicata* (listed as Endangered under the EPBC Act) is known in the region and Desert Greenhood (*Pterostylis xerophila*, listed as Vulnerable under the EPBC Act) may occur within the region. Recent vegetation and habitat assessments for the SRE Project did not identify either species, or habitat considered suitable to support either species. Both species were EPBC Act-listed in 2000, and extensive historical surveys since this time have not recorded either species on the Olympic Dam SML. These species are discussed further in Section 4 below.

State threated flora species

One species listed as Rare under the SA NPW Act, Western Tarvine (*Gilesia biniflora*), has been recorded within the SML (BHP 2009). Western Tarvine was recorded from canegrass (*Eragrostis australasica*) grassland in the northern part of the SML (both inside and outside of the ARR) and may occur in similar habitats in drainage areas throughout the SML.

Weeds

Monitoring conducted by BHP during FY23 (BHP 2023a) identified the following pest plant species declared under the *Landscape South Australia Act 2019* in the Olympic Dam area of influence:

- Prickly Pear (*Genus: Opuntia*)
- Buffel Grass (*Cenchrus ciliaris*)
- Innocent Weed (*Cenchrus incertus*)
- Fountain Grass (*Cenchrus setaceus*)
- Caltrop (*Tribulus terrestris*)
- Salvation Jane (*Echium plantagineum*)
- Athel Pine (*Tamarix aphylla*).

Fauna

Species diversity

Surveys and opportunistic observations in the immediate area of the Olympic Dam SML and Roxby Downs Municipality over the past 30 years have identified over 260 fauna species within the Olympic Dam region including 184 birds, 29 native mammals, 47 reptiles and one amphibian (BHP 2009). Species commonly observed around the Olympic Dam region include Red Kangaroo (*Macropus rufus*), Black faced Woodswallow (*Artamus cinereus*), Zebra Finch (*Taeniopygia guttata*), Gould's Goanna (*Varanus gouldii*), Western Brown Snake (*Pseudonaja mengdeni*) and Sudell's Frog (*Neobatrachus sudellai*).

The local reptile community is diverse by world standards, although the regional pool of 47 species is less than that found in some other Australian arid zone habitats. Several large reptile species, including three venomous elapid snakes, are conspicuous elements of the local fauna (BHP 2023b). By contrast, most of the 31 native mammal species recorded in the region (including ARR species) are small and nocturnal and hence rarely seen. Notably, the Plains Rat (*Pseudomys australis*) (discussed further in Section 4 and below) and the Hopping Mouse (*Notomys alexis*) have historically been recorded within the SML (BHP 2023b).

The ARR is the most significant habitat for fauna in the local region. The project was initiated in 1997 with the aim of facilitating ecological restoration of arid ecosystems by removing and excluding feral animals and re-establishing locally extinct threatened species such as the Greater Bilby (*Macrotis lagotis*), Burrowing Bettong (*Bettongia lesueur lesueur*), Shark Bay Bandicoot (formerly Western Barred Bandicoot) (*Perameles bougainville*), Western Quoll (*Dasyurus geoffroii*), Greater Stick-nest Rat (*Leporillus conditor*), and Kowari (*Dasyuroidesbyrnei*).

EPBC listed threatened fauna species

The Plains Rat is listed as Vulnerable under both the EPBC Act and NPW Act and it has been recorded on the SML outside of the ARR. There are 51 records in the BHP database for the species, but no records from the three mammal monitoring sites located in the proposed SRE Project Area (sites EV321, EV320, EV326). Few records of the Plains Rat existed in the region until it was first recorded in the ARR in 2006 (Arid Recovery 2024). A large population of Plains Rats has since become established within the predator-free ARR (Moseby 2012). While the species has been recorded within the SML numerous times, their critical habitat is not prevalent on the SML and records are assumed to occur during favourable conditions when populations have temporarily irrupted and expanded into a broader range of habitat types. The Plains Mouse is considered as possibly occurring in the Project Area, during irruption years only.

Only marginal habitat considered potentially suitable during boom years is present at six locations within the EIGR Areas, with only small and shallow gilgais recorded in some locations (**Att 4 SRE Project Ecology Baseline Assessment**). A total area of this potential 'boom period' habitat is 19.6 ha, representing 0.00098% of the species area of occupancy (AOO).

Thirty-one bird species that have an EPBC Act-listing (threatened category and/or listed Migratory species) were identified by searches of the Protected Matters Search Tool (PMST) as potentially present in the Project Area (refer to **Att 3 Significant Impact Assessment, Table 4-1, pg 29**). Of these:

- Southern Whiteface (*Aphelocephala leucopsis*), which is listed as Vulnerable under the EPBC Act, is considered known to occur in the Project Area
- Blue-winged Parrot (*Neophema chrysostoma*), which is listed as Vulnerable under both the EPBC Act and NPW Act, is considered as possibly occurring in the Project Area during winter migration (foraging only)
- Grey Falcon (*Falco hypoleucos*), which is listed as Vulnerable under the EPBC Act and Rare under the NPW Act, is considered as possibly occurring in the Project Area (foraging only)

Fork-tailed Swift / Pacific Swift (*Apus pacificus*), which is listed as Migratory Marine under the EPBC Act and Rare under the NPW Act, is considered possible as a flyover species. Bird species are discussed further in Section 4 below.

No EPBC threatened Amphibians or Reptiles have been identified or are considered potentially and /or likely to occur in the Project Area.

State listed threatened fauna species

In addition to EPBC-listed species, 11 species listed under the NPW Act have been recorded on the SML, including:

- Vulnerable listing - Freckled Duck (*Stictonetta naevosa*)
- Rare listings - Australasian Darter (*Anhinga novaehollandiae),* Australasian Shoveler (*Spatula rhynchotis*), Intermediate Egret (*Ardeaintermedia*), Musk Duck (*Biziura lobata*), Little Egret (*Egretta garzetta*), Blue-billed Duck (*Oxyura australis*), Bluebonnet (*Northiellanarethae*), Common Sandpiper (*Actitis hypoleucos*,also EPBC-listed), Peregrine Falcon (*Falco peregrinus macropus*) and Great Crested Grebe (*Podiceps cristatus*).

Pests

Thirteen introduced vertebrate species have been recorded in the SML area. The main introduced pests are the Red Fox (*Vulpes vulpes*), Cat (*Felis catus.*), House Mouse (*Mus musculus*) and Rabbit (*Oryctolagus cuniculus*).

Monitoring of introduced pest species during FY23 (BHP 2023a) showed that rabbits existed at a higher density compared to other introduced species (i.e. foxes, cats and wild dogs). Rabbit numbers overall have continued to remain below numbers observed before the release of rabbit hemorrhagic disease virus in March 2017.

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

The Total Disturbance Footprint of the Action is 475.6 ha (of which 226.3 is existing disturbance and 249.3 ha is new disturbance). Of this new disturbance approximately 245.8 ha is native vegetation, 3.22 ha is claypans and 0.25 ha is planted vegetation.

Vegetation

The native vegetation across the broader Action area is generally relatively intact, but highly disturbed in some areas particularly near stock watering points or infrastructure. Most of the Project Area is characterised by low sand dunes with low open woodland and mixed grasses, sandy interdune swales within Acacia low open woodland over Chenopod low open shrubland and interdune swales with clay soils supporting Cane-grass tall grasslands.

Two in-field assessments were undertaken to inform updated vegetation mapping for the SRE Project area (refer to **Att 2 Map Series, Map 7** and **Map 8** for vegetation association mapping). The assessments indicated that the following vegetation communities / habitats are present within the overall Disturbance Footprint of the Action (SML Area and EIGR Area):

- Loamy swales with Chenopod low open shrubland and emergent Mulga (*Acacia aneura*)
- Run-on depressions with River Red Gum (*Eucalyptus camaldulensis*), Willow Wattle (*Acacia salicina*) open woodland (only present in one area near the Water Infrastructure Area)
- Sand dunes with Umbrella Wattle (*Acacia ligulata*) / Bullock Bush (*Alectryon oleifolius*) tall shrubland over mixed shrubs and tussock grasses
- Sand dunes with White Cypress-pine (*Callitris glaucophylla*) open woodland and mixed tall shrubs and tussock grasses
- Sandy swales with mixed Acacia tall shrubland and tussock grasses
- Sandy plain with low open chenopod shrubland including *Atriplex vesicaria*, *Maireana eriatha* and *M. astrotricha*
- Stony plains with varied low open chenopod shrubland and minor shallow gilgai formations
- Stony plains with low open chenopod shrubland and minor gilgai formations, and shallow drainage lines containing Cotton-bush (*Maireana aphylla*).
- Undulating plain with Chenopod low open shrubland and emergent Dead Finish (*Acacia tetragonophylla*)
- Claypans – small shallow unvegetated clay-based basins in interdune swales that may hold water for short-periods of time, no cracking clays present, some have small amount of salt crust.

In addition, there are areas that have already been cleared for infrastructure and may include non-native and native plantings / emergent exotic species. These areas are not considered to provide suitable habitat for threatened fauna species but may provide occasional habitat for common species.

Soil and terrain

The footprint of the Action is within an area dominated of low undulating dunes, swales and clay pans. To the north the land is generally flat to undulating and comprised mainly of gibber plains and rises, outwash plains and dunefields. To the south are various tablelands, dunefields and plains, occasionally separated by plateaus and steep escarpment. Surface materials range from stones through sands, silts and clays (BHP 2009).

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.

A search of Commonwealth Heritage Places Database identified that no Commonwealth heritage places apply to the Project Area.

The closest World Heritage site to the Action is the Willandra Lakes Region in New South Wales (NSW) which is approximately 660 km from the Action. The closest National Heritage Places to the proposed Action are the Ediacara Fossil Site in Nilpena (located over 110 km to southeast of the Project Area on the eastern side of Lake Torrens) and Kati Thanda-Lake Eyre National Park and Elliot Price Conservation Park / Lake Eyre South (located over 110 km north east of the Project Area (DEW 2024).

Two sites listed on the South Australian Heritage Places Database are located at Andamooka, approximately 25 km east of the Action (the Andamooka Historic Reserve and Dick Clark's Residence). None of these sites are considered to be impacted by the Action.

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

The SRE Project is located entirely within the Native Title determination boundary of the Kokatha People (Part A), tribunal file number SCD2014/004 determined in September 2014.

With respect to cultural values, BHP has undertaken, and would continue to undertake:

- identification of Aboriginal cultural heritage values compiled through background research, Aboriginal consultation, archaeological field investigations and anthropological assessments
- cultural heritage surveys in accordance with the Olympic Dam Agreement (ODA).

The presence of any artefacts or identified Aboriginal cultural heritage values, including landscape features, within the SRE Project will be handled in accordance with legislation and the agreed procedures and protocols for heritage management with the Kokatha Aboriginal Corporation (KAC), Kuyani Yartah Association (KYA) and Barngarla Determination Aboriginal Corporation (BDAC) Indigenous Groups.

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. *

Rainfall in the Project Area is unpredictable and sporadic throughout the year, often occurring in intense short bursts. The Project Area receives approximately 150 millimeters (mm) of annual rainfall (1997-2024 data from Roxby Downs (Olympic Dam Aerodrome) monitoring station) (BoM 2024). Evaporation data is not available for the closest monitoring stations of Roxby Downs or Andamooka. Data from Woomera Aerodrome indicates a high annual evaporation rate of around 3,000 mm.

Long sustained periods of intense rainfall are very rare, but large intensity and short duration storm events associated with thunderstorm activity can occur in any month. The 1-in-100 72-hour Annual Exceedance Probability (AEP) rainfall event is 158 mm and the 1-in-500 AEP is 272 mm (12-hour duration) (BHP, 2023b). These storms can lead to localised flooding given the flat topography of the local area. Stormwater is held temporarily in swales or clay pans before it evaporates or infiltrates. Large events may fill the saline lakes that occur in the region.

The SML falls within the Roxby land system, characterised by many small, enclosed catchments, individually bound by east-west trending dunes, generally up to eight metres high. Typically, each catchment contains a boundary formed by the crest of sand dunes, a swale and a lower depression, often a clay pan (BHP 2009).

Olympic Dam Hydrogeology considerations

Groundwater in the Olympic Dam region generally occurs in fractured rocks tens of metres below the surface. It moves very slowly (<1 m per year) from a west to east direction, ultimately discharging to Lake Torrens (BHP 2009).

Mining operations at Olympic Dam have altered local groundwater levels. BHP extracts groundwater from the Andamooka Limestone and Tent Hill aquifer systems within the SML. The shallow Andamooka Limestone is completely dewatered in the underground mine area with inflows into the underground mine only from the deeper Tent Hill aquifer. In the tailings storage facilities (TSF) area and around the process plant there is considerable saturated thickness in the limestone due to seepage-induced mounding.

Underground mine dewatering and seepage from the TSFs has resulted in altered groundwater levels in both the Andamooka Limestone and Tent Hill aquifers. Pre-mining, the potentiometric surface was approximately 50 m below the surface. With mining operations, groundwater is constantly being depleted in both aquifers, creating a cone of drawdown that extends approximately 5 km in the Tent Hill aquifer and approximately the same distance to the north, south and east in the Andamooka Limestone aquifer.

To the west, seepage from the TSFs has created a groundwater mound in the Andamooka Limestone aquifer that has risen to a maximum height of approximately 30 m below the ground surface. This mounding has changed very little over an extended period (years) because of the low transmissivity of the limestone aquifer, limited hydrogeological connection to the Tent Hill aquifer and the limited number of man-made connections (such as exploration drill holes and ventilation shafts).

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	Yes	Yes
S21	Nuclear	Yes	Yes
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	Yes	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.

—

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. *

There are no World Heritage places or items within or in proximity to the Project Area (confirmed via the EPBC Act Protected Matters Reports (refer to **Att 3 – Significant Impact Assessment, Appendix A1 and A2**)).

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.

—

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. *

There are no National Heritage Places within or in close proximity to the Proposed Action (confirmed via the EPBC Act PMST reports (refer to **Att 3 – Significant Impact Assessment, Appendix A1 and A2**).

A search of the National heritage register via the Australian Heritage Database identified the nearest National Heritage Places to the proposed Action are the Ediacara Fossil Site in Nilpena (located over 110 km to southeast of the Project Area on the eastern side of Lake Torrens) and Kati Thanda-Lake Eyre National Park and Elliot Price Conservation Park / Lake Eyre South (located over 110 km north east of the Project Area (DEW 2024).

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.

—

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. *

There are no Wetlands of International Importance (Ramsar Wetlands) within or in close proximity to the Proposed Action (confirmed via the EPBC Act PMST reports (refer to **Att 3 – Significant Impact Assessment, Appendix A1 and A2**)).

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	Common name
No	No	Amytornis modestus	Thick-billed Grasswren
Yes	Yes	Aphelocephala leucopsis	Southern Whiteface
No	No	Calidris acuminata	Sharp-tailed Sandpiper
No	No	Calidris ferruginea	Curlew Sandpiper
Yes	Yes	Falco hypoleucos	Grey Falcon
No	No	Frankenia plicata	
No	No	Gallinago hardwickii	Latham's Snipe, Japanese Snipe
Yes	Yes	Neophema chrysostoma	Blue-winged Parrot

Direct impact	Indirect impact	Species	Common name
No	No	Pedionomus torquatus	Plains-wanderer
Yes	Yes	Pseudomys australis	Plains Rat, Palyoora, Plains Mouse
No	No	Pterostylis xerophila	Desert Greenhood
No	No	Tringa nebularia	Common Greenshank, Greenshank

Ecological communities

—

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. *

Threatened Ecological Communities (TECs)

The PMST reports (refer to **Att 3 Significant Impact Assessment, Appendix A1 and A2**) and all the desktop and field assessments undertaken to date in the Project Area indicate that no TECs occur within the proposed Project Area. The PMST report for the EIGR Area (**Att 3, Appendix A2**) indicated that the Subtropical and Temperate Coastal Saltmarsh TEC is considered likely to occur within the buffer area only (assumed to be from the southern most EIGR Area) however, this area is outside of any tidally influenced areas and as such the TEC does not occur here. It is considered that there will be no direct or indirect impact to any TECs as a result of the proposed Action.

Listed Threatened Flora Species

Two EPBC listed threatened flora species were identified in the PMST reports for both the SML area and the EIGR Areas (refer to **Att 3 Significant Impact Assessment, Appendix A1 and A2**) and assessed for likelihood of occurrence in the Project Area and Disturbance Footprint, and subsequently potential for significant impacts as a result of the Action; *Frankenia plicata* (endangered) and Desert Greenhood (*Pterostylis xerophila*) (vulnerable). Both species were considered unlikely to occur based on a lack of suitable habitat in the Project Area and limited or no records in the surrounding 50 km buffer area around the SML. Neither species was detected during vegetation and habitat surveys within the overall Project Area (**Att 4 SRE Project Ecology Baseline Assessment**). No direct or indirect impacts are expected to either of these flora species.

Refer to **Att 3 – Significant Impact Assessment, Table 4-1, pg 29** for likelihood and significant impact assessments.

Listed Threatened Fauna Species - Overview

Several EPBC listed threatened fauna species are identified as either potentially occurring or present in the Project Area which may potentially be impacted by the Action. **Att 3– Significant Impact Assessment, Table 4-1, pg 29** provides a comprehensive description of the likelihood of occurrence of each threatened fauna species identified by the PMST reports (**Att 3, Appendix A1 and A2)** as potentially present. It

provides a review of the findings of desktop and in-field assessments along with historic records of the species and provides an assessment of the potential impacts arising from the Action by addressing the Significant impact Criteria (DotE 2013).

In summary, the proposed Action has potential for direct and indirect impact on the following EPBC-Act listed threatened species.

Listed Threated Birds

Southern Whiteface (*Aphelocephala leucopsis*)

The Southern Whiteface is listed as Vulnerable under the EPBC Act and is considered known to be present in the Project Area. There are 23 Biological Databases of South Australia (BDBSA) records (1990-2017) and 164 Birdlife records (1982-2015) of the species within 50 km of the SML portion of the Project Area (BDBSA 2024). There are also 232 records within the BHP Birds Database, including from 6 regular monitoring sites in /adjacent the SML Area (EV386, EV394, EV398, EV404, EV409, EV41 (BHP 2024a). In addition, the species was detected during targeted surveys of the SML Area in July 2024 (4 sites, 3 pairs and one individual (sites LEVC11 in the WIA, and EV393, EV409, EV394 in the SRE) (Lathwida 2024, presented here as **Att 4 SRE Project Ecology Baseline Assessment**).

There are also numerous, but scattered, records of the species between Port Augusta and Olympic Dam within proximity to the EIGR Areas, which are reflective of the low level of survey effort within this remote region (refer to **Att 3 Significant Impact Assessment, Table 4-1, pg 29**). The species was not detected during survey of the EIGR Area, however, habitat within this area is considered suitable (Lathwida 2024).

Potential direct and indirect impact pathways relevant to the Southern Whiteface are:

- Clearance of potential habitat for proposed infrastructure and roadway connectors creating a loss of potential general foraging habitat, and or temporary roosting habitat.
- Injury or mortality from collisions with vehicles traversing roadway connector.
- Introduction of invasive weed species or disease impacting on habitat.
- Injury or mortality from collisions with powerline conductors.
- Cumulative impact of two or more impact pathways referenced above.

Blue-winged Parrot (*Neophema chrysostoma*)

Blue-winged Parrot is listed as Vulnerable under the EPBC Act and is considered as possibly occurring in the Project Area during winter migration (foraging only). There are suitable occasional foraging habitats in the Project Area that would support the species if present during winter migration, such as Sandhill Wattle low shrubland on dunes and low chenopod shrubland on swales. These habitats are extensive in the region, including the EIGR Area (Lathwida 2024). No breeding habitat is present and the species does not breed in SA (Lathwida 2024) (refer to **Att 3 Significant Impact Assessment, Table 4-1, pg 29**).

Potential direct and indirect impact pathways relevant to the Blue-winged Parrot are:

- Clearance of potential winter migration foraging or temporary roosting habitat.
- Injury or mortality from collisions with vehicles.
- Introduction of invasive weed species or disease impacting on potential habitat.
- Increased feral animal predation or competition.

Grey Falcon (*Falco hypoleucos*)

Grey Falcon is listed as Vulnerable under the EPBC Act and is considered as possibly occurring in the Project Area (foraging only). There are no BDBSA records, but one Birdlife record of the species within the 50 km buffer surrounding the SML (BDBSA 2024). The species was recorded in 2000 near a Cane-grass Swamp on Borefield Road, over 51 km from the SML Area. There is a single Birds SA record on NatureMaps on the eastern fringes of Port Augusta from 2001 around 13 km to the southeast of the southern-most EIGR Area.

There are no suitable timbered plains or tree-lined watercourses in the Project Area for breeding and foraging. The Project Area contains sparse dune and swales which may be suitable for foraging only (refer to **Att 3 Significant Impact Assessment, Table 4-1, pg 29**).

Potential direct and indirect impact pathways relevant to the Grey Falcon are:

- Clearance of potential habitat for proposed infrastructure and roadway connectors creating a loss of potential general foraging habitat, and or temporary roosting habitat.
- Injury or mortality from collisions with vehicles traversing roadway connector.
- Introduction of invasive weed species or disease impacting on habitat.
- Injury or mortality from collisions with powerline conductors.
- Increased feral animal predation or competition.
- Cumulative impact of two or more impact pathways referenced above.

Listed Threatened Mammals

Plains Rat, Palyoora, Plains Mouse (*Pseudomys australis*)

Plains Mouse is listed as Vulnerable under the EPBC Act and is considered potentially present in the Project Area during irruptive years only. While there is a lack of suitable critical refuge habitat within the SRE Project Area, there are several records of the species during 'boom' periods within proximity to the SRE Project Area (refer to **Att 3 Significant Impact Assessment, Table 4-1, pg 29**).

No critical refuge habitat was identified within the EIGR Areas during surveys undertaken in October 2024 (Lathwida 2024, presented here as **Att 4 SRE Project Ecology Baseline Assessment**). Minor areas of potential foraging or habitat during boom periods (i.e. minor gilgai features within stony plains or open chenopod shrublands were identified at six of the 11 EIGR Areas, representing a total area of 19.6 ha (Lathwida 2024).

Potential direct and indirect impact pathways relevant to the Plains Mouse are:

- Clearance of potential habitat for proposed infrastructure and roadway connectors.
- Increased vehicle strike along roadway connectors.
- Introduction of invasive weed species or disease.
- Increased feral animal predation or competition.

Cumulative impact of two or more impact pathways referenced above.

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. *

Att 3 – Significant Impact Assessment, Table 4-1, pg 29, provides a comprehensive description of the likelihood of occurrence of each species identified as potentially present through a review of the findings of desktop and in-field assessments along with historic records of the species and provides an assessment of the potential impacts arising from the Action by addressing the Significant impact Criteria (DotE 2013).

The assessment of the Action against all potentially relevant MNES by applying the specific significant impact criteria (DotE 2013) has demonstrated that the Action is unlikely to have a significant impact on any threatened species or ecological community. There is the potential for minor impacts to four threatened species, three of which have yet to be confirmed as present within the Project Area.

The four species are, Southern Whiteface (*Aphelocephala leucopsis*) (confirmed present) and potentially present Blue-winged Parrot (*Neophema chrysostoma*), Grey Falcon (*Falco hypoleucos*) and Plains Mouse (*Pseudomys australis*).

Southern Whiteface

There are two subspecies of Southern Whiteface; South-west Southern Whiteface (*A. l. castaneiventris*), occurs in central and southern Western Australia and South-east (*A. l. leucopsis*), occurs in eastern Western Australia to southern Northern Territory, southern Queensland all of South Australia and New South Wales, and northern Victoria (Menkhorst et al. 2017, Garnet and Baker 2021, DCCEEW 2023a). The latter subspecies is considered to have the larger more stable estimated population of the two; 400,000 individuals.

The entire species AOO is 7,000,000 ha across an Extent of Occurrence (EOO) of 419,000,000 ha (DCCEEW 2023a). The AOO estimate for the South-east subspecies is 6,000,000 ha within an EOO of 380,000,000 ha (Garnet and Baker 2021). From a bioregional perspective the Gawler IBRA Bioregion AOO is 375,600 ha (within an EOO of 15,085,800 ha). For the two relevant IBRA subregions, the Roxby IBRA subregion AOO is 49,200 ha (within an EOO of 1,445,100 ha), and the Arcoona Plateau AOO is 20,000 ha (within EOO of 1,671,600 ha) (as calculated within ALA spatial portal using IBRA shapefile import, 0.02 degree grid, ALA 2024).

Vegetation mapping undertaken for the Project Area identifies limited areas of preferred habitat for the Southern Whiteface (i.e. undisturbed open woodland or tall shrubland with grasses and/or dense litter cover, or trees or shrubs supporting hollows). The areas of preferred habitat present are largely avoided by the Proposed Disturbance Footprint. In addition individuals present are expected to be part of the broader population across arid South Australia rather than any specific important population. From a regional perspective, clearance of up to 216.8 ha of potentially suitable habitat within the SML and 29.0 ha within the EIGR Area (245.8 ha total) represents approximately 0.07% of the species area of occupancy within the Gawler IBRA Bioregion. Clearance of approximately 228.1 ha within the Roxby IBRA Subregion (216.8 ha within the SML Area plus 11.3 ha from the 4 northern Electricity Infrastructure Ground Re-profiling Areas) represents approximately 0.46% of the subregion's AOO of the subspecies. Clearance of 17.7 ha within the Arcoona Plateau IBRA Subregion (from the 7 southern Electricity Infrastructure Ground Re-profiling Areas) represents 0.09% of the AOO of the subspecies. Locally, individuals of the species would be expected to move to vast areas of more suitable habitat south of the Project Area at a greater distance from the existing mine. Significant impacts to the species as a result of the Action are not expected.

Blue-winged Parrot

Blue-winged Parrots breed on mainland Australia south of the Great Dividing Range in southern Victoria and sometimes in the far south-east of SA (DCCEEW 2023b). During non-breeding periods (from Autumn to early Spring), they occur from northern Victoria, eastern South Australia, South-western Queensland and western New South Wales (Higgins 1999).

The Blue-winged Parrot has been detected within the 50 km buffer from the Olympic Dam SML boundary, but outside of the SRE Project Area; there are three birdlife records (1998-2004) of the species near Olympic Dam village (1998, 1999) and between Andamooka and Lake Torrens (2004) (BDBSA 2024). There are also numerous records in inland South Australia in the broader region, including in proximity to the central EIGR Areas (e.g. Woomera, Carrapateena mine, near Lake Eyre). There are no BDBSA records of the species within the 50 km buffer from the SML boundary (BDBSA 2024, DEW 2024) and no records in the BHP Birds Database (BHP 2024a).

There are suitable occasional foraging habitats in the Project Area that would support the species if present during winter migration, such as Sandhill Wattle low shrubland on dunes and low chenopod shrubland in swales. These habitats are extensive in the region, including along the EIGR Area (Lathwida 2024). No breeding habitat is present and the species does not breed in SA (Lathwida 2024). Based on the above this

species is considered possible during winter migration (foraging only). The Project Area is unlikely to support an important population of this species, and the species does not breed in South Australia (Lathwida 2024).

The Blue-winged parrot has a broad distribution during non-breeding season across large areas of south-eastern and central Australia and is considered potentially present at times. due to the broad species distribution, limited amount of preferred foraging habitat in the Project Area and the fact that the species does not breed within inland Australia significant impacts to the species are not expected.

Grey Falcon

The Grey Falcon occurs in low densities across much of arid and semi-arid Australia with the species considered as a single continuous population across its entire range (TSSC 2020). The Action will result in regionally insignificant clearance of likely general foraging habitat with an absence of large, treed watercourses which are preferred by this species for nesting and roosting. Only minor areas of taller vegetation within the Project Area (e.g. some low dunes with Native Pine, some River Red Gum adjacent an artificial water area) will be cleared. Most of the proposed disturbance (245.8 ha of native vegetation comprising 216.8 ha in the SML area and 29.0 ha within the EIGR Area) is of sparse very low open chenopod shrubland on swales and sparse acacia shrubland on low dunes with existing disturbance against an existing mine. Significant impacts to the species are not expected.

Plains Mouse

There are over 700 BDBSA records of Plains Mouse located within 50 km of the SML Area (BDBSA 2024). The species is known from within and adjacent the ARR since 2005 (BDBSA 2024, BHP pers com., BHP 2024b). There are 51 records in the BHP database for the species, but no records from the three mammal monitoring sites located in the SML Area (sites EV321, EV320, EV326). Of the 51 records the majority are north of the mine site, SML Area and within the ARR. However there are two records from two sites that are adjacent (EV325, from 1998) and south of (EV338a, from 2010) the SML Area, and five records immediately north of the SML Area within established infrastructure areas, that may not be spatially reliable (2010, 2013, 2017). There are also three records from site EV331A (adjacent the southwest boundary of the ARR) and EV333a (adjacent the eastern boundary of the OD SML) (BHP 2024b).

The nature of the historic and recent records is reflective of the irruptive nature of this species, with multiple detections during boom years followed by bust periods where the species is difficult to detect, sometimes for several years. An important distinction for the species related to this irruptive lifecycle, is the difference between critical habitat which represents a refuge for populations during the extended drought periods of the occupied regions, and the broader opportunistic habitat used by the species during favourable conditions and the short population booms.

This species is most commonly associated with large open gypseous cracking clay areas or minor drainage features and in depressions (gilgais, Cane-grass Swamps) of the gibber stony plains, which are common north of the SRE Project Area and existing mine. The Project Area does not overlap with any significant areas of stony tablelands country which supports critical refuge habitat for Plains Mouse, or broader stony tablelands low chenopod habitat which supports discrete areas of gilgai habitat. Only minor occurrences of stony plains with very shallow potential gilgai features were identified at 6 of the 11 EIGR Areas (totaling 19.6 ha), but none were considered to reflect the deeper cracking clay gilgais which represent critical refuge habitat for the species.

The Plains Mouse has a highly irruptive lifecycle and uses a broader range of habitat types during irruptive cycles but retreats to critical refuge habitats during population lulls. There will be no impacts to critical refuge habitat which are not present in the Project Area (Moseby 2012, confirmed by Lathwida 2024). Whilst habitat within the Project area may represent boom foraging habitat in an area that has existing disturbance and is not predator proof, clearance of up to 216.8 ha of native vegetation within the SML Area represents 0.011% of the species AOO (estimated to be around 2,000,000 ha). Only marginal habitat considered potentially suitable during boom years is present at six locations within the EIGR Areas, with

only small and shallow gilgais recorded in some locations. A total area of this potential boom period habitat is 19.6 ha, representing 0.00098% of the species AOO. The proposed Action avoids impacts to the important translocated population location that is within the fenced ARR area 4.7 km north of the Project Area. significant impacts to the species are not expected.

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 majority of the Action within the SML Area occurs within immediate proximity to the existing operational OD mine, in an environment which is already influenced by decades of mining activity. The Action within the EIGR Areas is entirely beneath an existing transmission line with an existing parallel access track in place. As such, the Action reflects a 'business as usual' development, with no unique or new potential impact pathways. Whilst further vegetation disturbance is required for the SRE Project, the Action does not represent a controlled action because potential impacts to threatened ecological communities or threatened species are only plausible for four threatened species (Southern Whiteface, Blue-winged Parrot, Plains Mouse and Grey Falcon), only one of which (the Southern Whiteface) has been confirmed as present within the Project Area despite substantial survey effort. Each of the four species has substantially larger AOOs than any areas of habitat which would be disturbed by the Action, and there remains uncertainty around whether local populations would represent 'important' populations of the species for Southern Whiteface, Blue-winged Parrot and Grey Falcon. No habitat deemed as critical refuge habitat, or as critically important for any of the species is disturbed by the Action.

Att 3 – Significant Impact Assessment, Table 4-1, pg 29 provides a comprehensive description of the likelihood of occurrence of each species identified as potentially present through a review of the findings of desktop and in-field assessments along with historic records of the species and provides an assessment of the potential impacts arising from the Action by addressing the Significant impact Criteria (DotE 2013).

A significant body of scientific and environmental baseline data has been collected to support the referral and supporting technical studies and provides a high level of certainty within the assessment of the potential impact.

Att 3 – Significant Impact Assessment, Section 1.4, Table 1-2, pg 8, includes a summary of the field studies and reports completed for Olympic Dam which provide valuable data to inform the current understanding of vegetation, habitat and existing ecological values of the Project Area. This includes targeted threatened species surveys, vegetation and habitat mapping and full biological surveys as part of the ODX EIS (BHP 2009). There is also ongoing annual compliance monitoring as part of Environmental Protection and Management Program (EPMP) obligations for Olympic Dam, which includes several established monitoring sites within the SML Area (e.g. 8 bird monitoring sites and three mammal trapping sites).

Southern Whiteface

Only the Southern Whiteface, a species which is broadly distributed across most of Australia south of the tropics, has been detected within the Project Area and Disturbance Footprint. This species has an AOO of 70,000 km2 across an EOO of 4,910,000 km2 spanning large parts of arid and interior Australia which would be rarely surveyed (DCCEEW 2023a). The Disturbance Footprint for the Action represents a fraction of the overall distribution of the subspecies within the Gawler Bioregion, and within the Roxby and Arcoona IBRA Subregions, and the Action does not dissect any known population in two. Disturbance from the Action (216.8 ha within the SML and 29.0 ha within the EIGR Area) will impact areas of suboptimal habitat

of which there are vast areas adjacent the existing mine and Project Area which provide suitable habitat for the species. Impacts are therefore not considered to be significant in the context of the species as a whole, and subsequently this species does not trigger a controlled action.

Blue-winged Parrot

The Blue-winged parrot has a broad distribution during non-breeding season across large areas of south-eastern and central Australia and is considered potentially present at times. However, due to the broad species distribution, limited amount of preferred foraging habitat in the SRE Project Area and the fact that the species does not breed within inland Australia, significant impacts to the species are not expected, and subsequently this species does not trigger a controlled action.

Grey Falcon

The Grey Falcon is broadly distributed across the majority of mainland arid Australia. The Action will result in regionally insignificant clearance of likely general foraging habitat, with an absence of large, treed watercourses which are preferred by this species for nesting and roosting. Only minor areas of taller vegetation within the Project Area (e.g. some low dunes with Native Pine, some River Red Gum adjacent an artificial water area) will be cleared. Impacts are therefore not considered to be significant, and subsequently this species does not trigger a controlled action.

Plains Mouse

The Plains Mouse has a highly irruptive lifecycle and uses a broader range of habitat types during irruptive cycles but retreats to critical refuge habitats during population lulls. There will be no impacts to critical refuge habitat, which are not present in the SRE Project Area (Moseby 2012, confirmed by Lathwida 2024b). Whilst habitat within the Project area may represent ‘boom’ foraging habitat in an area that has existing disturbance and is not predator proof, clearance of up to 216.8 ha of native vegetation within the SML Area represents 0.011% of the species AOO. Only marginal habitat considered potentially suitable during boom years is present at six locations within the Electricity Infrastructure Ground Re-Profiling Areas, with only small and shallow gilgais recorded in some locations. A total area of disturbance of this potential ‘boom period’ habitat is conservatively estimated at 19.6 ha, representing 0.00098% of the species AOO.

The proposed Action avoids impacts to the important translocated population location that is within the fenced ARR area 4.7 km north of the Project Area. Impacts are therefore not considered to be significant, and subsequently this species does not trigger a controlled action.

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. *

Att 3 – Significant Impact Assessment, Table 4-1, pg 29 includes mitigation measures designed to avoid and minimise impacts to EPBC listed threatened species, along with a comprehensive description of the likelihood of occurrence of each species and an assessment of the potential impacts arising from the Action by addressing the Significant impact Criteria (DotE 2013).

During the design process for the Action, infrastructure locations were positioned wherever practicable to avoid or minimise impacts to any habitats which were deemed potentially suitable to EPBC listed species. This included avoidance where practicable of any identified:

- areas of low woodland, or higher density and taller shrublands, to reduce potential impacts to Southern Whiteface
- refuge habitat of deep cracking clay gilgais, large Cane-grass swamp or broad run-on interdune swales, to reduce potential impacts to Plains Mouse (presence not confirmed).

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

As no significant impacts to Listed threatened species, threatened ecological communities or migratory species are anticipated, no specific offsets have been considered under the EPBC Act.

Offsets are required for native vegetation loss in South Australia, as specified under the *Native Vegetation Act 1991* (SA). The area (or cost) of offset required increases when the vegetation to be cleared supports threatened species (including both State and Commonwealth threatened species). In South Australia, developments which are approved as impact assessed development under the PDI Act, such as the Action, apply for clearance of native vegetation concurrently with the EIS process. BHP has consent to clear native vegetation on the SML for the purpose of undertaking approved mining and processing operations without the need for separate native vegetation clearance applications to the Native Vegetation Council (NVC). Vegetation clearance off the SML (e.g. Electricity Infrastructure Ground Re-profiling Areas on Clause 28 land) is however subject to separate native vegetation clearance approval(s).

A native vegetation data report, attached to the EIS, will outline the clearance required, the type and condition of vegetation to be cleared, and the required offset (under the Native Vegetation Act) and how the environmental offset (termed Significant Environmental Benefit) will be achieved. BHP is in the process of determining the likely offset requirement, so that engagement with the Native Vegetation Council and government regulators can commence regarding the future clearance. Offsets have yet to be formalised but the intention is for an on-ground offset which will include habitat to support both state and Commonwealth threatened species.

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	Common name
Yes	Yes	Actitis hypoleucos	Common Sandpiper
No	No	Apus pacificus	Fork-tailed Swift
No	No	Calidris acuminata	Sharp-tailed Sandpiper
No	No	Calidris ferruginea	Curlew Sandpiper
Yes	Yes	Calidris melanotos	Pectoral Sandpiper
Yes	Yes	Charadrius veredus	Oriental Plover, Oriental Dotterel
No	No	Gallinago hardwickii	Latham's Snipe, Japanese Snipe
Yes	Yes	Limosa lapponica	Bar-tailed Godwit
No	No	Motacilla cinerea	Grey Wagtail

Direct impact	Indirect impact	Species	Common name
No	No	Motacilla flava	Yellow Wagtail
No	No	Tringa nebularia	Common Greenshank, Greenshank

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

Yes

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

Several EPBC listed migratory species are identified as either potentially occurring or present in the Project Area which may potentially be impacted by the proposed Action.

Migratory wetland (wading species) identified by the PMST (refer to **Att 3 Significant Impact Assessment, Appendix A)** were Common Sandpiper (*Actitis hypoleucos*), Pectoral Sandpiper (*Calidris melanotos*) and Oriental Plover, Oriental Dotterel (*Charadrius veredus*) and Bar-tailed Godwit (*Limosa lapponica*). Suitable habitat for these wading species in the Project Area only includes several highly ephemeral non-vegetated clay pans when water is present. These clay pans are unlikely to support suitable food resources for migratory waders. There are no Cane-grass swamps or watercourse and the clay pans, would only hold water for short durations of time (Lathwida 2024). Hence suitable habitat for these migratory waders is very limited, extremely localised, and temporary, and these species are considered as only potential occurrences in the SRE Project Area and unlikely in the Disturbance Footprint.

Potential direct and indirect impact pathways relevant to these migratory wading species are:

- Loss of small areas of highly ephemeral temporary suboptimal habitat.
- Injury or mortality from collisions with vehicles.
- Introduction of invasive weed species or disease impacting on habitat.
- Increased feral animal predation or competition.

The Fork-tailed Swift / Pacific Swift (*Apus pacificus*) a migratory marine species is considered possible as a fly-over species, however no potential direct or indirect impact pathways were identified as it is an aerial species.

Att 3– Significant Impact Assessment, Table 4-1, pg 29provides a comprehensive description of the likelihood of occurrence of each Migratory species identified as potentially present through a review of the findings of desktop and in-field assessments along with historic records of the species and provides an assessment of the potential impacts arising from the Action by addressing the Significant impact Criteria for Migratory Species (DotE 2013).

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

No

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

No EPBC listed Migratory species have been identified within the Project Area based on surveys undertaken to date. Migratory species are considered to be only very temporary and transient visitors to the Project Area, if present at all, given the lack of permanent water bodies or other suitable habitat, and the highly ephemeral nature of habitats which may retain water following substantial rainfall events. Following any substantial rainfall events, habitats which are more suitable than those within the Project Area are expected to be available more broadly across the landscape.

Migratory species which may potentially be temporarily present do not breed in Australia, so the Action would not disturb any breeding activity.

Att 3– Significant Impact Assessment, Table 4-1, pg 29 provides a comprehensive description of the likelihood of occurrence of each Migratory species identified as potentially present through a review of the findings of desktop and in-field assessments along with historic records of the species and provides an assessment of the potential impacts arising from the Action by addressing the Significant impact Criteria for Migratory Species (DotE 2013).

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

No

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

No EPBC listed Migratory species have been identified within the Project Area based on surveys undertaken to date. Migratory species are considered to be only very temporary and transient visitors to the Project Area, if present at all, given the lack of permanent water bodies or other suitable habitat, and the highly ephemeral nature of habitats which may retain water following substantial rainfall events. Following any substantial rainfall events, habitats which are more suitable than those within the Project Area are expected to be available more broadly across the landscape.

Migratory species which may potentially be temporarily present do not breed in Australia, so the Action would not disturb any breeding activity.

Att 3– Significant Impact Assessment, Table 4-1, pg 29 provides a comprehensive description of the likelihood of occurrence of each Migratory species identified as potentially present through a review of the findings of desktop and in-field assessments along with historic records of the species and provides an assessment of the potential impacts arising from the Action by addressing the Significant impact Criteria for Migratory Species (DotE 2013).

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

Att 3 – Significant Impact Assessment, Table 4-1, pg 29 includes mitigation measures designed to avoid and minimise any potential impacts to EPBC listed migratory species, along with a comprehensive description of the likelihood of occurrence of each species and an assessment of the potential impacts arising from the Action by addressing the Significant impact Criteria (DotE 2013).

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

As no notable impacts to Migratory species are anticipated, no specific offsets have been considered for Migratory species.

Offsets are required for all native vegetation loss in South Australia, as specified under the *Native Vegetation Act 1991*. Any habitat lost which is considered suitable for Migratory species would form part of the environmental offset requirements for the Action.

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? *

Yes

4.1.6.2 Briefly describe why your action has a direct and/or indirect impact on this protected matter. *

The Action is not assessed constitute a nuclear action, as defined under the EPBC Act. Assessment of the potential radiological impacts of the proposed Action are negligible for the environment and members of the public and consistent with the impacts for current Olympic Dam operations. A secondary assessment of the potential for additional uranium was conducted and it was shown that for the most conservative case, (assuming that all uranium is extracted), the overall change in production from Olympic Dam would be approximately 1%. Based on the assessment the Action is unlikely to be a controlled action requiring approval on the basis that there are no significant impacts on the environment.

Att 3 Significant Impact Assessment, Appendix B, includes a copy of the full EPBC Nuclear Assessment undertaken for the Action.

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

No

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

The Action was assessed for its potential to be captured under the following nuclear action definition: “establishing, significantly modifying, decommissioning or rehabilitating a facility where radioactive materials at or above the activity level specified in Regulation 2.02 of the Environment Protection and Biodiversity Conservation Regulations 2000 (EPBC Regulations) are, were, or are proposed to be stored”. The assessment considered whether the amount of copper concentrate from Carrapateena and Prominent Hill that may be temporarily stored awaiting processing is considered excessive in accordance with Regulation 2.02 of the for the EPBC Regulations.

Att 3 Significant Impact Assessment, Appendix B, includes a copy of the full EPBC Nuclear Assessment undertaken for the Action.

Due to operational aspects, the quantities of Carrapateena, Prominent Hill and Oak Dam copper concentrates, may technically exceed the values defined in the EPBC Act, but will always be significantly less than the quantities of higher activity concentrations Olympic Dam copper concentrates. The radiological impact of the storage and subsequent processing of the Carrapateena and Prominent Hill material has been assessed to be minor. This is primarily due to the quantities and radionuclide content of the material being less than the radionuclide content of the existing Olympic Dam copper concentrate. By using copper concentrate from Carrapateena and Prominent Hill there will be a reduction in the overall radionuclide concentrations through the smelter, refinery and into final products when compared to sole sourcing material from the Olympic Dam mine.

Att 3 Significant Impact Assessment, Section 5.5, Table 5.1, **pg 66** provides activity concentrations of the radionuclide to demonstrate the radionuclide content of Carrapateena and Prominent Hill concentrates are lower than for the Olympic Dam material.

Assessment of the radiological impacts of the Project were assessed to be low and consistent with existing operations. The potential for additional uranium was conducted and it was shown that for the most conservative case, (assuming that all uranium is extracted), the overall change in production from Olympic Dam would be approximately 1%. This is considered to be negligible compared to existing operational impacts.

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

No

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

The proposed activities described in this document are not assessed to constitute a nuclear action, as defined under the EPBC Act. Assessment of the potential radiological impacts of the proposed action are minor for the environment and members of the public and consistent with the impacts for current operations. A secondary assessment of the potential for additional uranium was conducted and it was

shown that for the most conservative case, (assuming that all uranium is extracted), the overall change in production from Olympic Dam would be approximately 1%. Based on both these conclusions, the action is therefore not considered a nuclear action and no Nuclear Action MNES are triggered.

Att 3 Significant Impact Assessment, Appendix B includes a copy of the full EPBC Nuclear Assessment undertaken for the Action.

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

The proposed activities described in this document are not assessed to constitute a nuclear action, as defined under the EPBC Act. Assessment of the potential radiological impacts of the proposed action are minor for the environment and members of the public and consistent with the impacts for current operations. A secondary assessment of the potential for additional uranium was conducted and it was shown that for the most conservative case, (assuming that all uranium is extracted), the overall change in production from Olympic Dam would be approximately 1%. Based on both these conclusions, the action is therefore not considered a nuclear action and no Nuclear Action MNES are triggered.

Att 3 Significant Impact Assessment, Appendix B includes a copy of the full EPBC Nuclear Assessment undertaken for the Action.

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

Not applicable – No significant impacts are expected, and the Action is not considered a controlled action. Therefore, no offsets are required.

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.

—

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. *

There are no Commonwealth Marine Areas within or in close proximity to the Proposed Action (confirmed via the EPBC Act Protected Matters Report (refer to **Att 3 Significant Impact Assessment, Appendix A1 and A2**).

The nearest Commonwealth Marine Area to the proposed Action is the Western Eyre Marine Park, located over 400 km to the southwest of the Project Area off the coast of Streaky Bay (DEW 2024). The Action does not interact with the marine environment in any way and there are no impacts to this MNES.

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. *

The Great Barrier Reef Marine Park is not in close proximity to the Proposed Action. The closest point of the Great Barrier Reef Marine Park to the proposed Action is located over 1,500 km north-east of the Project Area (confirmed via the EPBC Act PMST report, refer to **Att 3 Significant Impact Assessment, Appendix A1 and A2**).

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 Action is not directly or indirectly associated with a coal seam gas development or large coal mining development.

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.

Direct impact	Indirect impact	Commonwealth land area
Yes	Yes	Defence - WOOMERA AIR WEAPONS RANGE

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

Yes

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

The PMST output report for the SML Area (**Att 3 Significant Impact Assessment, Appendix A1**) highlighted that the feature area or buffer area will intersect, or be in proximity to 9 recognised Commonwealth lands (summarised in **Att 3 Significant Impact Assessment, Table 5.2).**

The PMST for the EIGR Area (**Att 3 Significant Impact Assessment, Appendix A2**) highlighted that the feature area or buffer area will intersect or be in proximity to 9 recognised Commonwealth lands. Four of the nine Commonwealth Lands interact with the EIGR Area feature area. These areas are listed as the Woomera Air Weapons Range (40069, 40080 and 40070) and Australian National Railways Commission (ANRC) (41545).

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

No

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

The PMST for the SML Area suggests one of the nine Commonwealth Lands interacts with the SML feature area. This area is listed as the Woomera Air Weapons Range 40080. The Woomera Prohibited Area (of which the Woomera Air Weapons Range is a part) is located approximately 6.5 km from the western boundary and 3.5 km from the southern SML boundary. The SRE Project is located within the SML boundary, further away again from the Woomera Prohibited Area.

The lack of direct overlap of the SML Area with Commonwealth Land is expected to preclude any direct impacts of this component of the Action on Commonwealth Land. Indirect impacts such as generation of dust impacting on the vegetation of Commonwealth lands, or introduction of weeds and/or plant pathogens to Commonwealth lands is not expected to significantly impact on Commonwealth Land, given the distance and limited disturbance caused by the Action relative to disturbance caused by existing mining operations at Olympic Dam.

Four of the eleven the EIGR Areas are located within the extensive Woomera Prohibited Area and one of sites is approximately 10 km from the township of Woomera. As the re-profiling work required at these locations is beneath an existing electricity transmission line corridor only, and no railway lines or rail infrastructure are present or in the vicinity, no impacts to ANRC features are anticipated.

Att 3 Significant Impact Assessment, Table 5-4, provides a detailed assessment of the significance of residual impacts on Commonwealth Lands as a result of the Action. Commonwealth lands in proximity to the SRE Project are shown on **Att 2: Map Series, Map 10: Commonwealth Lands**.

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

No

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

The Action shall remain within the Project Area and Disturbance Footprint within the SML as well as the discrete disturbance within 11 isolated areas along the EIGR Area south of the SML. It is not anticipated the environment on Commonwealth land would be impacted more than what currently occurs from existing Olympic Dam mining operations, aside from at four of the EIGR Areas south of the SML Area which have a total Disturbance Footprint which is conservatively estimated at 11.3 ha beneath an existing transmission line (with parallel access track). The small individual disturbances (of 2.5 to 3 ha each) are virtually immeasurable in the context of the expansive Woomera Prohibited area which spans 122,000 km2.

One ANRC site is indicated by the PMST to intersect with the feature area of the EIGR Areas, however no railway lines or rail infrastructure were noted within, or adjacent, any of the EIGR Areas.

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

The only interaction with Commonwealth Lands occurs at 4 of the EIGR Areas where additional power loads will result in greater sagging of the existing transmission line, resulting in a subsequent need for vegetation removal to meet the required safety clearance areas between vegetation and the active transmission line. No avoidance measures are possible as the line is already in place.

Att 3– Significant Impact Assessment, Table 5-3, includes mitigation measures designed to avoid and minimise potential impacts to the environment of Commonwealth Lands and an assessment of the potential impacts arising from the Action by addressing the Significant impact Criteria (DotE 2013).

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

Not applicable – No significant impacts are expected, and the Action is not considered a controlled action. Therefore, no offsets are required.

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.

—

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. *

The List of Overseas Places of Historic Significance to Australia (LOPHSA) is created by the EPBC Act (amended 2003) to list and protect significant Australian heritage sites overseas, such as Kokoda Track in Papua New Guinea and Anzac Cove, Gallipoli.

There are no Commonwealth heritage places overseas that apply to the Proposed Action.

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? *

No

4.3.8 Describe why alternatives for your proposed action were not possible. *

N/A – from 4.3.1

The proposed timeline is related to supporting a sustainable and more resilient smelting and refining flowsheet that enables the Olympic Dam copper growth pathway, to take advantage of economic and market demand for its products.

5. Lodgement

5.1 Attachments

1.2.1 Overview of the proposed action

	Type	Name	Date	Sensitive	Confidence
#1.	Document	Att 1_SRE Project description_Rev0_Public Release_241216 (1).pdf SRE Project description	16/12/2024	No	High
#2.	Document	Att 2_Map Series_Public Release_241121.pdf SRE Project map series	21/11/2024	No	High
#3.	Document	Att 3_SRE Project_Sig Impact Assessment_241216.pdf SRE Project significant impact assessment - unredacted	16/12/2024	Yes	High
#4.	Document	Att 3_SRE Project_Sig Impact Assessment_241216_Redacted.pdf SRE Project significant impact assessment - redacted	16/12/2024	Yes	High

1.2.7 Public consultation regarding the project area

	Type	Name	Date	Sensitive	Confidence
#1.	Document	Att 5_Stakeholder Engagement Plan_Public Release_241121.pdf SRE Project stakeholder engagement plan	21/11/2024	No	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	Sensitive	Confidence
#1.	Document	Att 6_References and acronyms used_Public Release_241121.pdf Reference and acronym list	21/11/2024	No	High
#2.	Document	Att 7_Olympic Dam Integrated Management System (IMS) Policy.pdf Olympic Dam Integrated Management System (IMS) Policy	01/07/2024	No	High

3.2.1 Flora and fauna within the affected area

	Type	Name	Date	Sensitive	Confidence
#1.	Document	Att 4_SRE Project_Ecology Baseline Report_Public Release_241217.pdf SRE Project ecology baseline report	17/12/2024	No	High

5.2 Declarations

Completed Referring party's declaration

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

ABN/ACN	99007835761
Organisation name	BHP OLYMPIC DAM CORPORATION PTY LTD
Organisation address	3000 VIC
Representative's name	John Wynne
Representative's job title	Principal Environment - Asset Approvals
Phone	0411624716
Email	john.wynne@bhp.com
Address	10 Franklin Street, Adelaide, 5000, SA

☑ 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, **John Wynne of BHP OLYMPIC DAM CORPORATION 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	99007835761

Organisation name	BHP OLYMPIC DAM CORPORATION PTY LTD
Organisation address	3000 VIC
Representative's name	Sally Lamb
Representative's job title	Manager Asset Environment Approvals & Sustainability
Phone	0488036077
Email	sally.lamb@bhp.com
Address	Level 6, 10 Franklin Street, Adelaide, SA, 5000

☑ 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, **Sally Lamb of BHP OLYMPIC DAM CORPORATION 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, **Sally Lamb of BHP OLYMPIC DAM CORPORATION 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. *