





MARDIE PROJECT

IMPACT RECONCILIATION PROCEDURE

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1 THE PROPOSAL

1.1 THE PROPOSAL

Mardie Minerals Pty Ltd (Mardie Minerals) seeks to develop the Mardie salt and Sulphate of Potash (SoP) project (Proposal) at Mardie, approximately 80 kilometres (km) south west of Karratha, in the Pilbara region of Western Australia (WA). The Proposal will produce a high purity salt product, SoP and other products that can be derived from sea water.

The Proposal includes the development of seawater intakes, concentrator and crystalliser ponds, processing plants, bitterns disposal pipeline and outfall diffuser, trestle jetty export facility, dredge channel, causeway, drainage channels, access / haul roads, desalination (reverse osmosis) facilities, borrow pits, pipelines and associated infrastructure including: power supply, communications equipment, offices, workshops, accommodation village, laydown areas, sewage treatment plant and landfill facility.

The WA Environmental Protection Authority (EPA) released their report on the Proposal on 7 July 2021. Ministerial Statement (MS) 1175 was subsequently issued on 24 November 2021, under Part IV of the *Environmental Protection Act 1986* (EP Act). A delegate of the Commonwealth Minister for the Environment granted conditional approval on 12 January 2022 under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act; EPBC Act approval 2018/8236).

1.2 OBJECTIVE

This Impact Reconciliation Procedure (IRP) has been developed to meet the requirements of MS 1175 (Condition 13) and requirements of EPBC Act approval 2018/8236 (Conditions of Approval 26 and 27), as described in Section 2.

2 CONDITION REQUIREMENTS

2.1 MINISTERIAL STATEMENT UNDER PART IV OF THE EP ACT

The following conditions of MS 1175 are relevant to this IRP.

13 Terrestrial Offsets

- 13-1 The proponent shall contribute funds to the Pilbara Environmental Offsets Fund (PEOF) calculated pursuant to condition 13-2, to achieve the objective of counterbalancing the significant residual impacts of direct impacts and indirect impacts to:
 - (1) 'Good' to 'Excellent' condition native vegetation, including foraging and dispersal habitat for the Pilbara olive python, northern quoll, Pilbara leaf-nosed bat, and EPBC Act listed migratory/marine bird habitat;
 - (2) Priority 3 Priority Ecological Community (PEC) Horseflat Land System of the Roebourne Plains; and





- (3) critical habitat for the Pilbara olive python (riparian and freshwater pool habitat).
- 13-2 The proponent's contribution to the PEOF shall be paid biennially, with the amount to be contributed calculated based on the clearing undertaken in each year of the biennial reporting period in accordance with the highest applicable rate specified in condition 13-3. The first biennial reporting period shall commence from ground disturbing activities of the environmental value(s) identified in condition 13-3.
- 13-3 Calculated on the 2019–2020 financial year, the contribution rates are:
 - (1) \$826 AUD (excluding GST) per hectare of 'Good' to 'Excellent' condition native vegetation, including foraging and dispersal habitat for the Pilbara olive python, northern quoll, pilbara leaf-nosed bat and EPBC Act listed Migratory/marine bird habitat cleared or indirectly impacted for the proposal within the Roebourne IBRA subregion;
 - (2) \$1,653 AUD (excluding GST) per hectare of Priority 3 PEC Horseflat Land System of the Roebourne Plains cleared or indirectly impacted for the proposal within the Roebourne IBRA subregion; and
 - (3) \$1,653 AUD (excluding GST) per hectare of riparian vegetation, which is also critical habitat for the Pilbara Olive Python, cleared or indirectly impacted for the proposal within the Roebourne IBRA subregion.
- 13-4 From the commencement of the 2019-2020 financial year, the rates in condition 13-3 will be adjusted annually each subsequent financial year in accordance with the percentage change in the CPI applicable to that financial year.
- 13-5 Where offsets are required for an area of land under condition 14 that is also subject to offsets under condition 13-3, the higher amount shall apply.
- 13-6 To achieve the objective in condition 13-1, the proponent shall prepare and submit a Mardie Project IRP to the CEO prior to ground disturbing activities. This procedure shall:
 - (1) spatially define the environmental value(s) identified in condition 13-1;
 - (2) spatially define the areas where offsets required by condition 13-1 are to be exempt;
 - (3) include a methodology to calculate the amount of clearing undertaken during each year of the biennial reporting period for each of the environmental values identified in condition 13-3:
 - (4) state that clearing calculation for the first biennial reporting period will commence from ground disturbing activities in accordance with condition 13-2 and end on the second 30 June following the commencement of ground disturbing activities;
 - (5) state that clearing calculations for each subsequent biennial reporting period will commence on 1 July of the required reporting period, unless otherwise agreed by the CEO;
 - (6) indicate the timing and content of the Impact Reconciliation Reports (IRRs); and
 - (7) be prepared in accordance with Instructions on how to prepare *Environmental Protection Act 1986* Part IV IRPs and IRRs (or any subsequent revisions).





13-7 The proponent:

- (1) may review and revise the IRP; or
- (2) shall review and revise the IRP as and when directed by the CEO by a notice in writing.
- 13-8 The proponent shall submit an IRR in accordance with the IRP approved in condition 13-6.
- 13-9 The IRR required pursuant to condition 13-8 shall provide the location and spatial extent of the clearing undertaken as a result of the proposal during each year of each biennial reporting period.
- 13-10 The proponent may apply in writing and seek the written approval of the CEO to reduce all or part of the contribution payable under condition 13-2 where:
 - (1) a payment has been made to satisfy a condition of an approval under the *Environment Protection and Biodiversity Conservation Act 1999* in relation to the proposal; and
 - (2) the payment is made for the purpose of counterbalancing impacts of the proposal on matters of national environmental significance identified in condition 13-1.

2.2 EPBC ACT APPROVAL

This IRP has been developed to meet the requirements of Conditions 26 and 27 of the conditions of approval for EPBC Act approval 2018/8236.

Offsets

- 26. To compensate for the residual significant **impacts** of **clearing Pilbara Leaf-nosed Bat supporting habitat**, **Pilbara Olive Python critical habitat** and **Northern Quoll supporting habitat**, the approval holder must contribute funds to the **Pilbara Environmental Offsets Fund (PEOF)**.
- 27. In making the contribution to the **Pilbara Environmental Offsets Fund**, the approval holder must
 - a. Comply with condition 13-6 of the **WA Approval**.
 - b. contribute funds towards an offset or offset activity that:
 - reduces the rate of decline of the Pilbara Leaf-nosed Bat, Pilbara Olive Python, and Northern Quoll;
 - ii. ensures that viable populations of **Pilbara Leaf-nosed Bat**, **Pilbara Olive Python**, and **Northern Quoll** remain in the Pilbara bioregion;
 - iii. has specified outcomes and performance indicators; timeframes and milestones for their achievement;
 - iv. includes sufficient monitoring to detect achievement of performance indicators, milestones and the outcomes; and
 - v. requires regular reporting to the approval holder of the outcomes of the monitoring.
 - c. not **commence the action** until the Mardie Project **Impact Reconciliation Procedure** has been submitted to the **Minister** for approval. If the **Impact Reconciliation**



Procedure has not been approved by the **Minister** and in writing, within 6 months of submitting the **Impact Reconciliation Procedure** to the **Minister**, the **Minister** may, at least two months after so notifying the approval holder, approve a version of the **Impact Reconciliation Procedure** revised by the **Department**. The approval holder must implement the approved **Impact Reconciliation Procedure** for the remainder of the **life of the project**.

- d. the approval holder must provide an upfront payment of 10 per cent of the total contribution to the **Pilbara Environmental Offsets Fund** as detailed by the approved **Impact Reconciliation Procedure**, within one month of the **Minister** approving the IRP, which will contribute towards achieving the outcomes set out in condition 27(b).
- e. Make a payment once every two years, based on **evidence** of the **actual clearing footprint** starting from the date of **commencement of the action** and then for each subsequent 24-month period, to the **Pilbara Environmental Offsets Fund** that is equivalent to or greater than the value of the following amounts on the date of this approval, by adjustment in accordance with the **CPI** from the date of this approval decision until the date on which any payment is made, of:
 - i. A minimum of \$3,306 AUD (excluding GST) per hectare of **cleared Pilbara Olive Python critical habitat**, up to an allowable clearing limit of 6 hectares, and
 - ii. A minimum of \$1,653 AUD (excluding GST) per hectare of **cleared Northern Quoll supporting habitat**, up to an allowable clearing limit of 64.5 hectares and of good to excellent quality **Pilbara Leaf-nosed Bat supporting habitat**, up to an allowable clearing limit of 1,224 hectares.
- f. Submit to the **Department evidence** of each payment made under conditions 27(d) and 27(e) within 10 **business days** of the date of the payment.
- g. Include in each **annual compliance report** to the **Department** details of progress towards, or achievement of, the outcomes specified under condition 27(b) for the **Pilbara Leaf-nosed Bat, Pilbara Olive Python**, and **Northern Quoll.**
- h. Write to the **Minister**, within 10 **business days** of being aware or having concerns, that the offset outcomes specified for the **Pilbara Environmental Offsets Fund** project(s) may not be achieved.
- i. On completion of clearing, submit to the Department a final Impact Reconciliation Report. The Minister may agree to adjust the final year's payment and notify the approval holder in writing of the adjusted final payment amount based on evidence of the actual clearing footprint provided in the Impact Reconciliation Report.





3 PROCEDURE

3.1 IDENTIFICATION OF THE BIODIVERSITY VALUES REQUIRING OFFSETS UNDER THE PEOF

After the implementation of mitigation measures described in the Proposal Environmental Review Document (ERD), the Proposal is predicted to have a significant residual impact on the environmental values listed in Table 1 and the MNES listed in Table 2. All data used to calculate these values is taken from Appendix 8.1 and 9.1 (Phoenix 2020a & b) of the ERD, found at: https://www.epa.wa.gov.au/proposals/mardie-project.

Table 1: Summary of significant residual impacts - Part IV EP Act Environmental Values

Environmental value	Other associated values	Residual Impacts	Figure reference
'Good' to 'Excellent' condition native vegetation	Foraging and dispersal habitat for the Pilbara Olive Python, Northern Quoll, Pilbara Leaf-nosed Bat, And EPBC Act Listed Migratory / Marine Bird Habitat	Clearing of up to 2,319 ha of good to excellent condition native vegetation, including landward samphire, foraging and dispersal habitat	Figure 1
Priority 3 PEC - Horseflat Land System of the Roebourne Plains	N/A	Clearing up to 145 ha and indirect impacts to up to 20 ha	Figure 1
Pilbara Olive Python (<i>Liasus</i> <i>olivaceaus</i> <i>barroni</i>) critical habitat	N/A	Clearing of up to 6 ha of riparian and freshwater pool habitats	Figure 1

Table 2: Summary of significant residual impacts - MNES

Relevant MNES	Residual Impacts	Figure reference
Listed threatened species	and communities (Sections 18 & 18A)	
Pilbara Olive Python (<i>Liasus olivaceaus</i> <i>barroni</i>) critical habitat	Clearing of up to 6 ha of riparian and freshwater pool habitats	Figure 2
Pilbara Leaf-nosed Bat (Rhinonicteris aurantia)	Clearing and disturbance of up to 1,224 ha of Good to Excellent quality Pilbara leaf-nosed bat foraging habitat (<i>Triodia</i> grassland)	Area that is shown as both Good to Excellent vegetation in Figure 1 and Pilbara Leaf-nosed Bat foraging habitat in Figure 2
Northern Quoll (<i>Dasyurus</i> hallucatus)	Clearing of up to 64.5 ha of foraging habitat	Figure 2

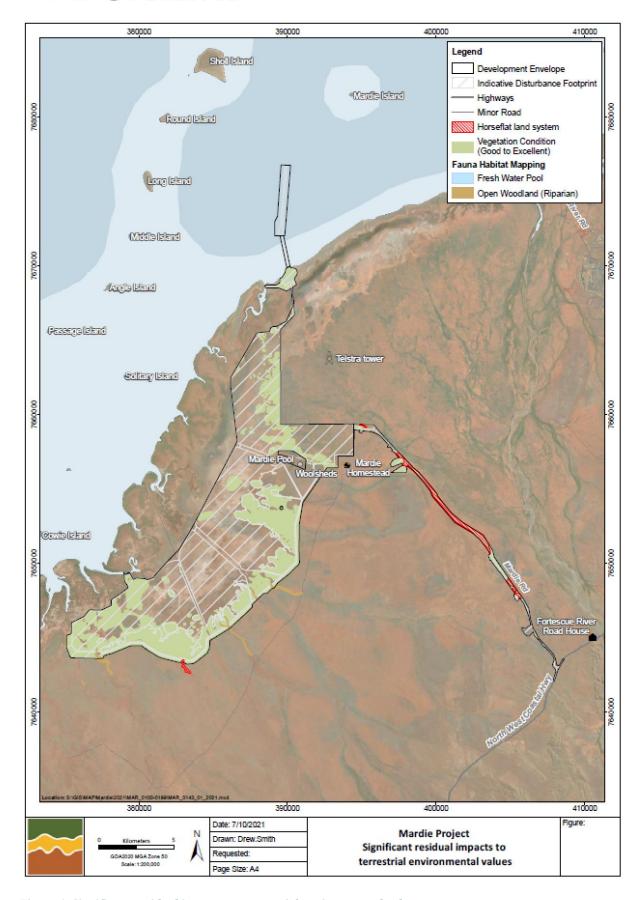


Figure 1: Significant residual impacts to terrestrial environmental values

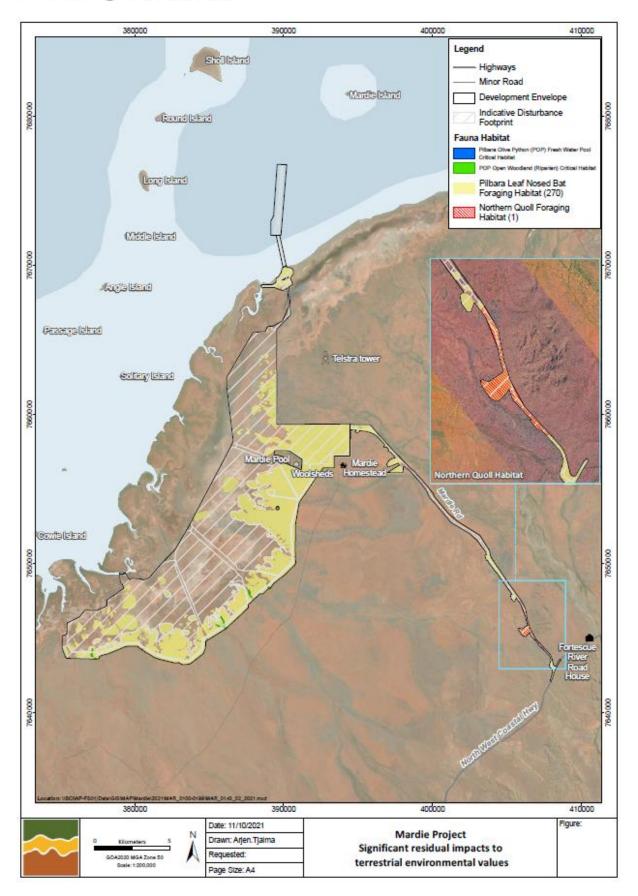


Figure 2: Significant residual impacts to terrestrial MNES habitat



3.2 DETAILS OF PROPOSED OFFSETS

The Interim Biogeographic Regionalisation for Australia (IBRA) divides the Australian continent into 89 bioregions and 419 sub regions. IBRA regions represent a landscape-based approach to classifying the land surface, including attributes of climate, geomorphology, landform, lithology and characteristic flora and fauna. The IBRA is a key tool in identifying land for conservation.

The EPA has identified an increase in project applications and the clearing of native vegetation within the Pilbara IBRA Region. To address the cumulative impacts which could significantly impact biodiversity and environmental values in the region, the EPA has recommended that offset conditions are established for any new proposals involving the clearing of native vegetation in IBRA subregions where extensive clearing has occurred.

The Proposal is located within the Roebourne subregion of the Pilbara IBRA Region, which has recently been allocated a contribution amount per hectare for impacts assessed under EP Act. The EPBC Act biodiversity values are categorised as 'critical' where habitat is utilised by significant species as shelter / denning / roosting habitat and 'supporting' where habitat is utilised by significant species for foraging and / or dispersal. Where there is a residual significant impact that relates to both State and Commonwealth impacts then the higher of the two rates will be applied to meet both State and Commonwealth requirements.

In view of the significant residual impacts and risks of the Proposal, Mardie Minerals is required to contribute funds to the PEOF for the clearing of the items identified in Table 3. This procedure outlines the process for determining the area of vegetation disturbed within the Proposal's footprint and subsequent offset contribution to the PEOF. The location of these biodiversity values is shown in Figure 1.

Table 3: Biodiversity values from MS 1175 and EPBC 2018/8236 that require offsets

Condition	Biodiversity values	Hectares to be offset	IBRA subregion / habitat category	January 2022 value of payment to PEOF (\$AUD/ha)	January 2022 value of liability for all approved clearing
MS 1175					
13-1(1)	'Good' to 'Excellent' condition native vegetation.	1,666 ha Note that this area is in addition to the offsets proposed for other values below (i.e. offsets are not duplicated)	Roebourne	\$826	N/A
13-1(2)	Priority 3 PEC - Horseflat Land System of the Roebourne Plains;	165 ha (145 ha direct and 20 ha indirect)	Roebourne	\$1,653	N/A
13-1(3)	Critical habitat for the Pilbara olive python (riparian and freshwater pool habitat)	6 ha	Roebourne	\$1653	N/A



Condition	Biodiversity values	Hectares to be offset	IBRA subregion / habitat category	January 2022 value of payment to PEOF (\$AUD/ha)	January 2022 value of liability for all approved clearing
EPBC 2018	/8236				
27(e)(i)	Pilbara Olive Python (<i>Liasus</i> olivaceaus barroni)	6 ha	Critical habitat (riparian and freshwater pool habitat) – Roebourne subregion	\$3,306	\$19,836
27(e)(ii)	Northern Quoll (Dasyurus hallucatus)	64.5 ha	Supporting habitat – (low rocky hills) - Roebourne subregion	\$1,653	\$107,445
27(e)(ii)	Pilbara Leaf- nosed Bat (Rhinonicteris aurantia)	1,159 ha Note that this area is in addition to the Pilbara Olive Python and Northern Quoll supporting habitat (i.e. offsets are not duplicated)	Supporting habitat (riparian and freshwater pool habitat, Triodia grassland) – Roebourne subregion	\$1,653	\$1,915,827
January 2022 value of total payment liability for all clearing*				\$2,043,108	
Upfront payment of 10% total contribution				\$204,311	

^{*} total amount is subject to change, the rates will be adjusted in accordance with the percentage change in the Perth Consumer Price Index (CPI) from the date of the EPBC Act approval decision (January 2022) until the applicable financial year in which the payment is made.

3.3 METHODOLOGY TO DETERMINE CLEARING

In order to accurately reconcile the clearing completed under MS 1175 and EPBC 2018/8236 baseline information will be used to determine the appropriate contribution for the offset in accordance with Table 3.

The process for undertaking clearing is outlined in the Mardie Minerals' Land Clearing Procedure and Site Disturbance Permit Procedure. Clearing requirements are initially identified and planned through an internal Site Disturbance Application Form (SDA). The SDA ensures all clearing complies with the Proposal's environmental approvals.

Clearing is progressively tracked using the Proposal's Clearing Database. This will track both clearing which has been applied for via a SDA and actual clearing that has been undertaken. Once an area has been cleared, the survey department will generate coordinates for the cleared area and then revise the Site Plan and Clearing Database to provide a spatial representation of total clearing to-date. The clearing database will be updated regularly using the current site plan which is provided monthly by the site survey department.

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In addition, an aerial survey will be undertaken annually (in July) to verify the clearing within the Clearing Register. The timing of survey will coincide with the submission of annual environmental reporting requirements to the Department of Mines, Industry Regulation and Safety. Results of the aerial survey will be provided to the Department of Water and Environmental Regulation (DWER) to verify areas of impacts (when licensing permits).

The verification involves a visual comparison of clearing area coordinates mapped on the Proposal's Site Plan with the aerial image. Any inaccuracies in the extent of clearing in the Site Plan will be rectified based on the aerial image to produce final clearing polygons. This data will be supplied as part of the IRR for submission to DWER and DCCEEW.

The Clearing Database includes the following information:

- Method of clearing;
- Reason / justification;
- Amount required;
- Timing; and
- Baseline ecological value.



4 REPORTING

4.1 Frequency and timing

The reporting schedule is provided in Table 4. The clearing calculation for the first biennial reporting period will commence from ground disturbing activities in accordance with condition 13-2 and end on the second 30 June following the commencement of ground disturbing activities. Each subsequent clearing calculation will be from 1 July to 30 June, two years later.

Each IRR will be provided to DWER within three months of the end of each reporting period. Evidence of payments will be provided to DCCEEW within 10 business days of the date of payment.

Table 4: Reporting period and frequency of the IRP

Biennial Period	Action	Timing	
	MS 1175 issued	24 November 2021	
	EPBC 2018/8236 issued	12 January 2022	
	Commencement of action	7 February 2022	
Upfront payment	Initial payment of 10% of the overall clearing allowable, in accordance with CoA 27(d) of the EPBC Act approval	Within one month of EPBC Act approval of this IRP	
	Approval holder to submit evidence of payment into PEOF account to DCCEEW.	Within 10 business days of the date of the payment	
Period 1	First biennial reporting period	7 January 2022 to 30 June 2023	
	Aerial survey/ground truthing. Must be undertaken annually.	July 2023	
	IRR submitted to DWER	30 September 2023	
	Evidence of payment submitted to DCCEEW.	Within 10 business days of the date of the payment	
Period 2	Second biennial reporting period	1 July 2023 to 30 June 2025	
	Aerial survey/ground truthing. Must be undertaken annually.	July 2025	
	IRR submitted to DWER	30 September 2025	
	Evidence of payment submitted to DCCEEW.	Within 10 business days of the date of the payment	
Period 3	Third biennial reporting period	1 July 2025 to 30 June 2027	
	Aerial survey/ground truthing. Must be undertaken annually.	July 2027 (where required)	
	IRR submitted to DWER	30 September 2027 (where required)	
	Evidence of payment submitted to DCCEEW.	Within 10 business days of the date of the payment (where required)	
On completion of clearing	Final IRR submitted to DCCEEW in accordance with CoA 27(i) of the EPBC Act approval	Within 10 business days of completion of clearing	



The contribution to the PEOF will be paid biennially, with the amount to be contributed calculated based on the clearing undertaken in both years of the biennial reporting period, and the contribution calculated on the basis of the real value of the payment per hectare cleared being the same as the amounts specified in the EPBC Act approval decision at the date the approval decision was made, adjusted for CPI.

The IRR will confirm the area and the relevant values of the vegetation cleared in order to determine the value of the biennial offset payment. Dollar/hectare rates will be as specified in Table 3. The real value of contributions will be derived in accordance with the percentage change in the CPI applicable to the financial year in which the payment is made.

4.2 CLEARING AND RECONCILIATION

Each IRR shall be structured in the manner prescribed in the DWER 'Instructions on How to Prepare EP Act Part IV IRPs and IRRs, March 2021' or the most recent version published on the EPA website. The current link is provided below:

http://www.epa.wa.gov.au/forms-templates/instructions-preparing-impact-reconciliation-procedures-and-impact-reconciliation

Each IRR shall include the following information:

- Project background;
- Summary of MS and EPBC reporting condition requirements;
- Summary of the environmental values covered by the IRP;
- Purpose for clearing undertaken within the reporting period;
- A table showing the current extent of clearing (ha), the rate/ha for each clearing matter
 and an estimate of the total amount due DWER to calculate the final amount payable for
 the reporting period; and
- A figure showing the current extent of clearing.





GLOSSARY

Term	Meaning
СРІ	Perth Consumer Price Index
DBCA	Department of Biodiversity, Conservation and Attractions
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DWER	Department of Water and Environmental Regulation
EPA	Environmental Protection Authority
ha	Hectare
IBRA	Interim Biogeographic Regionalisation for Australia
IRP	Impact Reconciliation Procedure
IRR	Impact Reconciliation Report
ktpa	Kilotonnes per annum
Mardie Minerals	Mardie Minerals Pty Ltd
Mtpa	Million tonnes per annum
SDA	Site Disturbance Application Form
SoP	Sulphate of Potash
The Proposal	Mardie Project
WA	Western Australia