



# CONTENTS

About ERA	3
Chief Executive's message	4
2022 highlights	5
Life of Ranger Mine	6
Sustainability approach	8
Governance	9
Social	12
Environment	18
Looking forward	26

## Acknowledgement of Country

Energy Resources of Australia acknowledges the Traditional Custodians of country throughout Australia and their connections to land, sea and community.

We acknowledge the Mirarr people who are the Traditional Owners of country where the Ranger Rehabilitation Project operates, and the Larrakia people who are the Traditional Owners of country where our Darwin head office is located.

We pay our respects to Elders past and present and extend that respect to all Aboriginal and Torres Strait Islander peoples.





# ABOUT ERA

*Energy Resources of Australia (ERA) operated the former Ranger mine, Australia's longest continuous uranium mine surrounded by, but separate from, Kakadu National Park in the Northern Territory.*

The former Ranger uranium mine lies within the 79 square kilometres of the Ranger Project Area, which is located 8 kilometres east of Jabiru and 260 kilometres east of Darwin, in the Northern Territory of Australia.

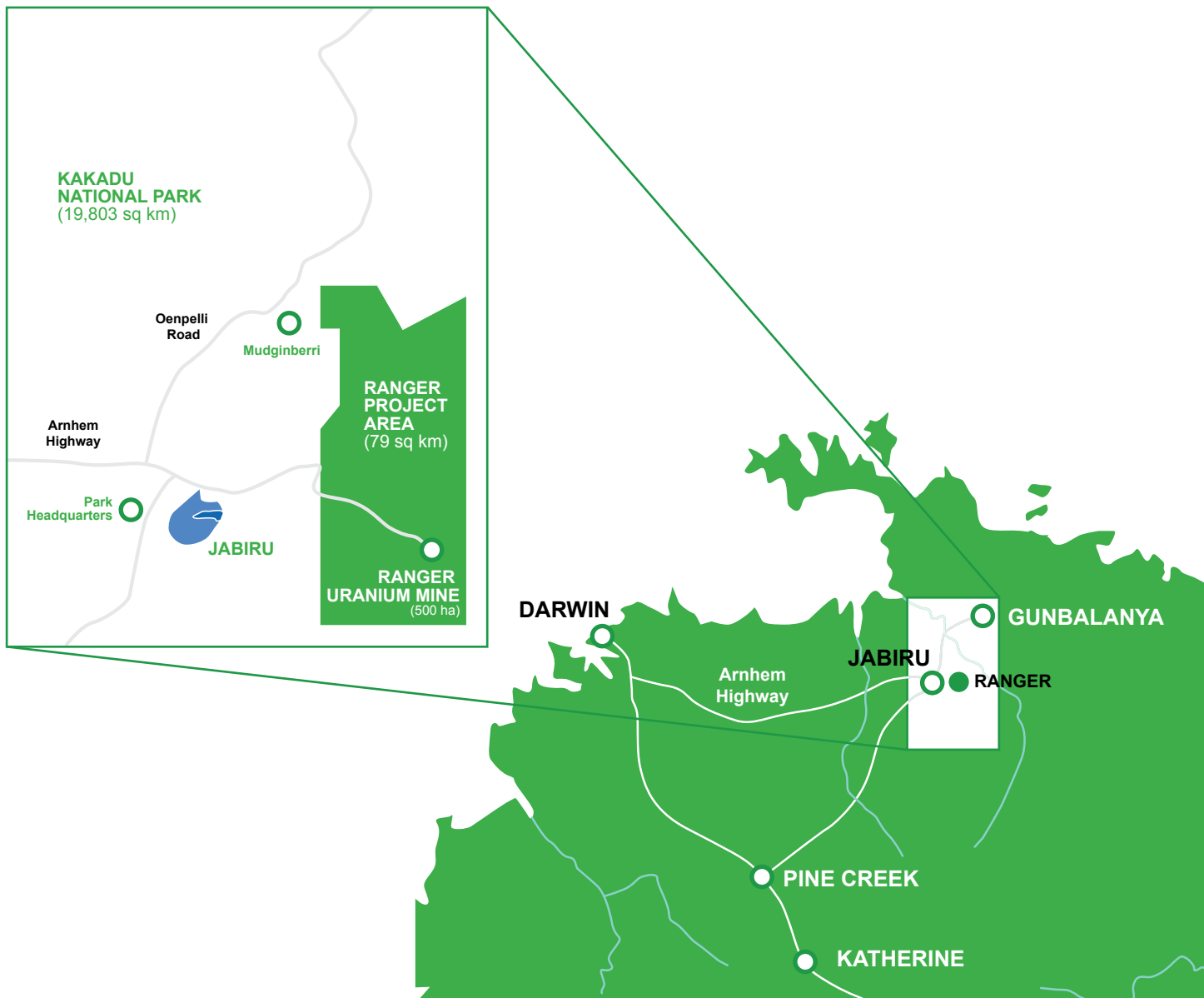
ERA ceased mining operations in 2012 and continued to process stockpiled ore until 8 January 2021, when the Ranger Authority required processing to cease. The sale of the last drum of uranium oxide was made in May 2022. The Ranger Project Area is now being progressively rehabilitated.

Under the Ranger Authority, ERA must rehabilitate the Ranger Project Area to establish an environment similar to the adjacent areas of Kakadu National Park so that, in the opinion of the Minister with the advice of the Australian Government's Supervising Scientist Branch, the rehabilitated area could be incorporated into the Kakadu National Park.

ERA's ongoing rehabilitation activities on the Ranger Project Area are undertaken according to an authorisation granted under section 41 of the *Atomic Energy Act 1953* (the Ranger Authority). Under the terms of the current Ranger Authority, ERA's rights to access, occupy and use the Ranger Project Area continue until 8 January 2026. As this Act was amended in November 2022, ERA is working with the Australian Government, Northern Land Council and Gundjeihmi Aboriginal Corporation – on behalf of the Mirarr Traditional Owners, to negotiate a new Ranger Authority that allows rehabilitation works to continue past 8 January 2026.

ERA holds the title to the Jabiluka Mineral Lease. In accordance with the Jabiluka Long Term Care and Maintenance Agreement, the Jabiluka deposit will not be developed by ERA without approval of the Mirarr Traditional Owners. The Jabiluka estimated Mineral Resource is 137,100 tonnes of uranium oxide at a cut-off grade of 0.2%  $U_3O_8$ .

ERA's strategic priority is to comprehensively rehabilitate the Ranger Project Area and the Company's primary focus is to achieve a world-class rehabilitation standard. The Company's shares are publicly held and traded on the Australian Securities Exchange. Rio Tinto, a diversified resources group, currently holds 86.3% of ERA shares.



# CHIEF EXECUTIVE'S MESSAGE

*In early 2022, I was permanently appointed as Chief Executive of ERA. Over my time in this role, I have deeply respected the extraordinary landscape in which we work, the rich cultural heritage that we maintain, and acknowledge the 'first of its kind' nature in so much of what we do.*

ERA strives to achieve a positive legacy by delivering world-class rehabilitation of the former uranium mine located in the Ranger Project Area. We openly accept this opportunity and the challenges that come with it. We invite the world to watch as we continue our journey.

In 2022 we sold our last drum of uranium oxide and moved from a business focused on commercial operations to now primarily focusing on delivering rehabilitation. To support this, we have made significant changes to our organisation, its people and processes. This is to best support the delivery of rehabilitation to the highest environmental and social standards and support the timely and cost-effective delivery of the project. These changes have included:

- activities to increase certainty in funding and project execution plans
- resetting the leadership and governance of the organisation to lead the rehabilitation project
- shifting to a "project culture" where we seek strategic partnerships to deliver on our commitments.

The Mirarr people are the Traditional Owners of the land on which ERA operates. We recognise the importance of this land to the Mirarr people and acknowledge them as a key partner in our efforts to successfully rehabilitate their land. Our long history of engagement with the Mirarr people through their representative bodies – the Northern Land Council and Gundjeihmi Aboriginal Corporation – will continue into the future. I look forward to continuing this ongoing engagement to better understand the rich cultural landscape as we work together to deliver world-class rehabilitation. I thank them for their guidance and support during 2022.

Through the collaborative work of ERA, Gundjeihmi Aboriginal Corporation, the Northern Land Council and the Department of Industry, Science and Resources to jointly support amendments to the *Atomic Energy Act 1953*, there is now a clear path for rehabilitation activities to be delivered beyond the original legislated deadline of 8 January 2026. ERA is committed to applying for a rehabilitation authority and to see through our full rehabilitation program beyond 2026.

ERA has a broad array of people interested in the successful delivery of rehabilitation work. These include Mirarr Traditional Owners, national and international scientific experts and the Northern Territory and Australian governments. We pride ourselves on open and transparent communication with stakeholders through

a variety of forums along with meeting our continuous disclosure obligations to the ASX, which was upheld in 2022.

Sending our people home each day safely is paramount. I am pleased to report we achieved an "All Injury Frequency Rate" of 0.0 for the second year in a row in 2022. This means we had no lost time injuries, no restricted work injuries and no medical treatment cases.

To deliver our strategic priority of world-class rehabilitation requires technical expertise, high quality planning, execution, collaboration and partnerships. We seek to share our journey towards world-class rehabilitation with our shareholders and stakeholders. As part of this, we have commenced designing a new sustainability reporting framework that will see us benchmark our journey against leading international practice. This year's Sustainability Report will focus on key areas relative to the Environmental, Social and Governance (ESG) aspects of sustainability. In future years, we look forward to evidencing our progress towards world-class rehabilitation against global standards and metrics. I look forward to sharing the progress we make on this front in future years.

Thank you to everyone who supported ERA in 2022 and I am looking forward to an exciting and productive 2023.



**Brad Welsh**  
Chief Executive &  
Managing Director



# 2022 HIGHLIGHTS



**SOLD**

last drum of uranium oxide



**31%**

of Jabiru housing rectification completed



**ACHIEVED**

an above target (3.7) score of 4.0 on Safety Maturity Model



**HOSTED**

3 Cultural Reconnection Steering Committee visits with the Mirarr Traditional Owners, at both Ranger and Jabiluka.



**COMPLETED**

the transfer of the Tailings Storage Facility to Pit 3, a total of 26.7 million tonnes



**REFRESHED**

company purpose and vision



**SUBMITTED**

a revised Mine Closure Plan to reflect our lower technical risk rehabilitation methodology



**SHIFT**

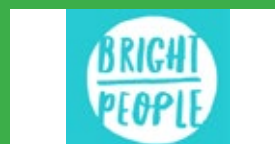
to Integrated Project Management Team (IPMT)



**43%**

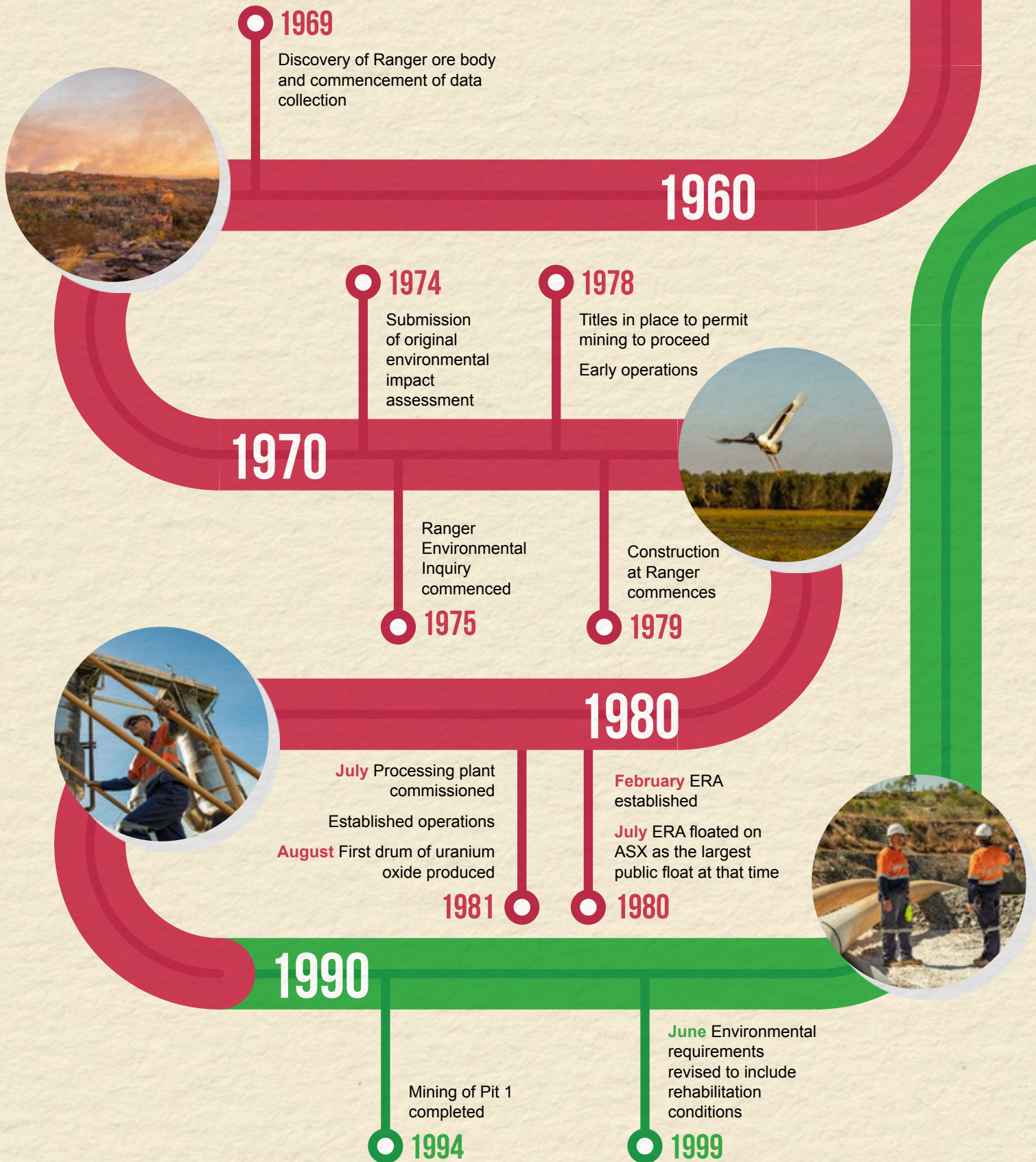
Completion of wicking at Pit 3, which enables the accelerated dewatering and consolidation of the tailings

## KEY STRATEGIC COLLABORATIONS WITH:





# LIFE OF RANGER MINE





*Energy Resources Australia is committed to creating a positive legacy and achieving world-class, sustainable rehabilitation of former mine assets.*

2000



2008

Commencement of regular closure risk assessment workshops

2016

Best Practicable Technology (BPT) risk workshop undertaken

2014

Best Practicable Technology (BPT) risk workshop undertaken

2012

**November** Mining of Pit 2 completed

2010



**May** First Ranger Mine Closure Plan submitted to Australia Government

2018

2022

Feasibility reforecast underway

**January** Revegetation planting at Pit 1 completed

**October** Sale of last drum of uranium oxide

2020

**October** Pit 1 rehabilitation commenced and completion of bulk backfilling

2020

**January** Reprocessing operations completed

Production at the Ranger Mine ceased

**May** Commenced revegetation of Pit 1

**July** Jabiru township handed over to Traditional Owners

2021

2023-2028\*



WORLD-CLASS SUSTAINABLE REHABILITATION

\*Recent amendments to the *Atomic Energy Act 1953* allow ERA to apply to extend its existing Ranger authority beyond the current 8 January 2026 deadline so the Ranger Project Area can continue to be rehabilitated until the rehabilitation process is complete.

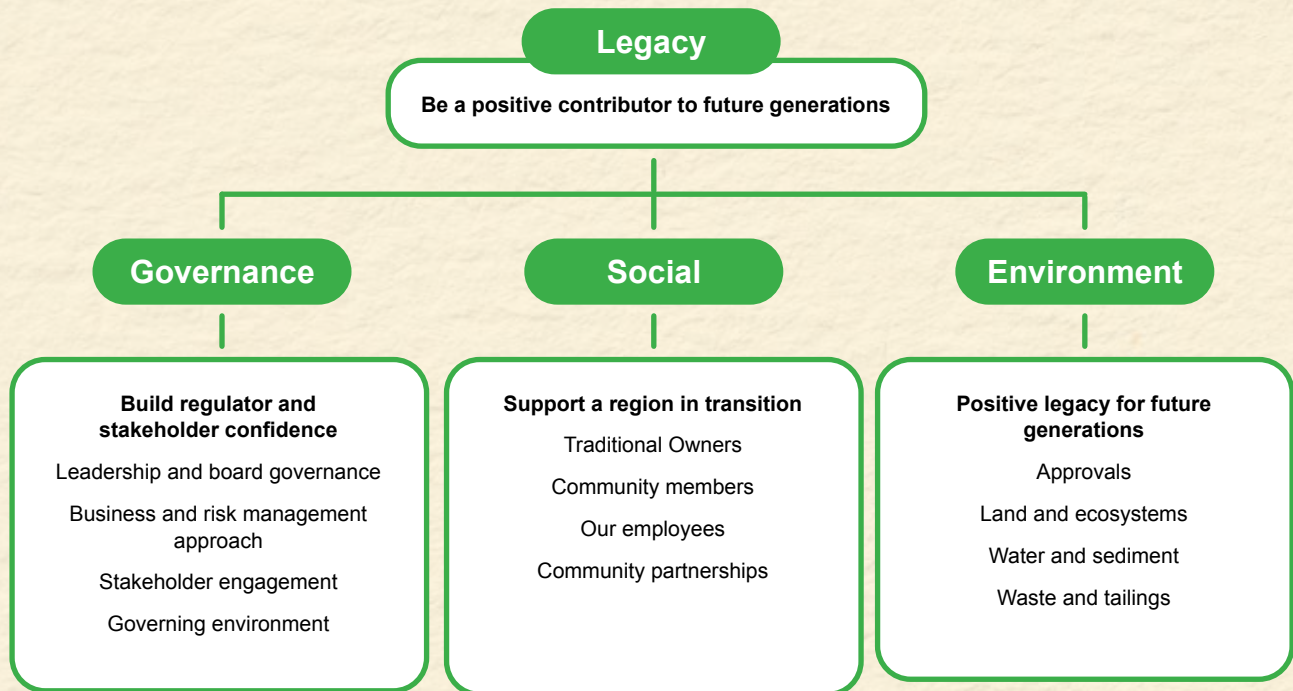


# SUSTAINABILITY APPROACH

With mining and processing activities complete, during 2022 ERA reshaped its vision and delivery model to focus on sustainable closure and the rehabilitation program. ERA will continue to have a role in the in broader local and regional communities throughout the rehabilitation phase and post-rehabilitation monitoring phase.

In 2022, ERA commenced a revision of the approach to sustainability reporting to more closely reflect a structure of “Environmental, Social and Governance” (ESG). Sustainability reporting will focus on key ESG areas relative to the business, and in the future will focus on metrics to evidence the progress towards world-class rehabilitation.

## Sustainability pillars for mine closure



## Guiding strategic framework





# GOVERNANCE

## *Build regulator and stakeholder confidence*

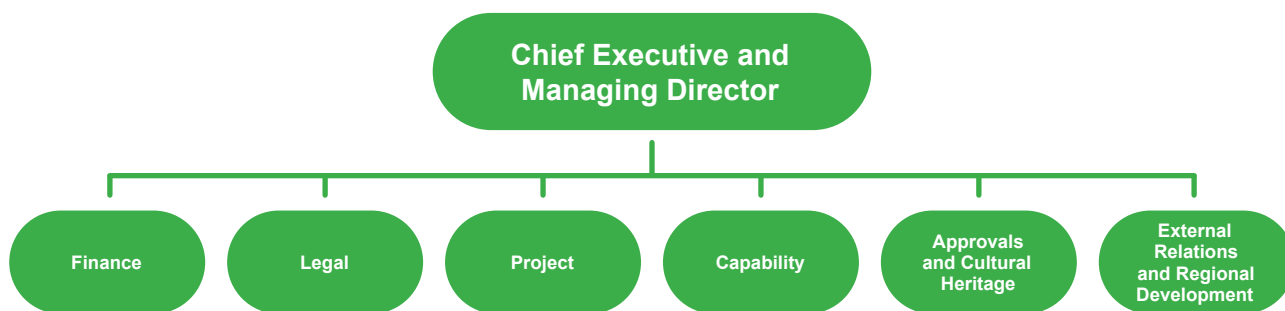
### Leadership and board governance

ERA is listed on the Australian Stock Exchange (ASX); the largest shareholder is Rio Tinto, holding 86.3% of shares. As such, ERA is bound by the ASX Listing Rules, including the obligation for continuous disclosure.

ERA is governed by an independent board comprising 4 Rio Tinto nominees and 3 independent members. There is an Independent Board Committee established for dealings with Rio Tinto as well as several subcommittees - Sustainability, Rehabilitation, Audit and Risk and Remuneration – to support its activities. Some senior roles are on secondment from Rio Tinto including the Chief Executive Officer (CEO) and Chief Financial Officer (CFO).

The direction of the Board is implemented by the Executive Leadership Team, and 2022 saw changes at the board level with the departure of independent directors Peter Mansell, Paul Dowd and Shane Charles. Since then, ERA has welcomed the appointment of three independent non-executive directors – the Honourable Kenneth Wyatt AM, Stuart Glenn and Rick Dennis.

Brad Welsh was permanently appointed in February 2022 as Chief Executive. Since Brad's appointment, Brad has reset the company's vision and realigned the ERA senior management team to reflect the shift from an operating asset to an organisation focused on the rehabilitation of the Ranger Project Area, as shown in the image below.



### Business and risk management approach

#### *ERA's strategic priority is the comprehensive rehabilitation of the Ranger Project Area*

ERA's commitment to acting responsibly plays a critical role in the legacy the Company wishes to leave. ERA takes a unified approach to corporate governance to comply with the regulatory obligations associated with obligations as an ASX listed company, to the Traditional Owners of the land on which ERA operates and to the

broader community. During 2022, ERA implemented a risk-based approach to its business that considered a range of standards and guidance. The intent of the approach was that all hazards and opportunities are identified, assessed and strategies are developed to manage risks.

### Renewed vision

#### *ERA has shifted to a project culture that is supported by strategic partnerships to deliver on commitments.*

The former Ranger uranium mine has shifted to the rehabilitation phase of its lifecycle. This is a long and highly regulated phase. To support this shift, a review of the organisational structure determined that the execution, reporting and governance systems for ERA would be best supported by implementing project systems through an Integrated Project Management Team (IPMT) with support from Bechtel Australia

Pty Ltd (Bechtel). This approach brings the best of Bechtel's project capability alongside ERA's world-class rehabilitation expertise. The transition to the IPMT began in September 2022. Leading the IPMT is newly appointed Project Director Bernard Toakley, who will oversee the execution of the Ranger Rehabilitation Project, reporting to the Chief Executive.

## Engagement with stakeholders

ERA has a large and diverse range of stakeholders across a broad spectrum of interests. Quality connection and engagement is pivotal to success and a key component of overall governance as a business. ERA uses a range of mechanisms from formal committees to informal gatherings to provide fit-for-purpose and audience appropriate engagement. Engagements are generally coordinated through regularly held fora, committees and working groups.

ERA's approach to stakeholder engagement is centred on maintaining relationships based on mutual respect, active partnership, transparency and long-term commitment. ERA will continue to connect with and respect Mirarr culture and the aspirations of the Jabiru community, as the Company creates a positive legacy and achieves world-class, sustainable rehabilitation of the former Ranger mine.

ERA's approach to stakeholder engagement has fostered collaboration and cooperation with a diverse range of stakeholders on the following key aspects of closure and rehabilitation:

- the overall planning process and schedule
- engineering and design criteria for technical aspects of closure such as water treatment, tailings transfer, backfilling of mine pits and the final landform design
- post-mining land use, closure objectives, completion criteria and cultural criteria
- legal requirements and obligations associated with the various agreements for the mine and Jabiru township
- land tenure and governance.

Ranger closure and rehabilitation activities, processes, and criteria have been developed, scrutinised, and adapted based on stakeholder engagement and feedback.

### Key Forums

Minesite Technical Committee, quarterly

Ranger Closure Consultative Forum, monthly

Alligator Rivers Region Technical Committee (ARRTC), biannually

Alligator Rivers Region Advisory Committee (ARRAC), biannually

Relationship Committee meetings

Regulator and Ministerial briefings and visits

Regular reporting to Kakadu Board of Management

Future of Jabiru MOU parties, quarterly

Regular Working Groups (Landform, Ecosystem Restoration, Water and Sediment, and Tailings)

\*MOU – Memorandum of Understanding

## Stakeholders

### Stakeholders

Mirarr Traditional Owners

Gundjeihmi Aboriginal Corporation (GAC)

Northern Land Council (NLC)

Commonwealth Department of Industry, Science, Energy and Resources (DISER) Supervising Scientist Branch (SSB)

Northern Territory Department of Industry, Tourism and Trade (DITT)

Gundjeihmi Aboriginal Corporation Jabiru Town (GACJT)

Jabiru Kabolkmakmen Limited (JKL)



Visit from the NT Deputy Chief Minister and Minister for Mining and Industry, the Hon Nicole Manison MLA



## Extension to ERA's rehabilitation deadlines

The closure activities of the former Ranger uranium mine are governed by both Commonwealth and Northern Territory legislation and regulations.

ERA was proud to work collaboratively with Gundjeihmi Aboriginal Corporation, the Northern Land Council and the Department of Industry, Science, Energy and Resources (DISER) to jointly support amendments to the *Atomic Energy Act 1953*. The *Atomic Energy Amendment (Mine Rehabilitation and Closure) Bill 2022* was passed in November 2022. These amendments now clear the path for rehabilitation activities to be delivered beyond the legislated deadline of 8 January 2026.

ERA is committed to applying for a rehabilitation authority and to see through the full rehabilitation program. ERA recognises the importance of the land on which it operates to the Mirarr Traditional Owners and that they are a key partner and keenly interested in the rehabilitation of the Ranger Project Area. ERA has regularly engaged with the Mirarr people regarding the operation and rehabilitation of the mine through their representative bodies – the Northern Land Council and Gundjeihmi Aboriginal Corporation. This will continue in the future.

ERA's Mine Closure Plan (MCP), updated in 2022, details the rehabilitation activities it will conduct before transitioning into a post-closure monitoring program.

## Governing environment

### Commonwealth (DISER & DAWE)

*Atomic Energy Act 1953*

- Section 41 Authority to mine
  - » Environment Requirements (Appendix A)

*Environment Protection (ARR) Act*

- Supervising Scientist
  - » Committees (ARRTC & ARRAC)

### Northern Territory (DITT)

*Mining Management Act 2001*

Ranger Authorisation

NT Acts and regulations



### Working Arrangements Detailed in a Memorandum of Understanding

Minesite Technical Committee

# SOCIAL

## Support a region in transition

The area that ERA operates in holds great significance for a diverse group of stakeholders including:

- the Mirarr Traditional Owners as a place of living culture
- the Northern Territory and Australian governments as a significant location for tourism opportunities and a service hub for the region
- Jabiru as a social and financial contributor to the area
- ERA employees as their home and their place of work.
- the world as World Heritage listed place of exceptional natural and cultural values.

ERA is part of both the transition of Jabiru as per the vision set by the Mirarr and restoring the landscape.

ERA respects and provides ongoing support to the community. The approach has been refreshed during 2022 as community connections and initiatives were reoriented to support ERA's rehabilitation agenda. ERA has continued to provide the Community Partnership Fund (the Fund) which aims to contribute to the development of a healthy and positive community in the region. ERA contributed both financial and in-kind resources across many areas.

ERA's role in supporting Jabiru's transition is to rectify the ERA residential housing portfolio. The portfolio consists of 259 residential addresses, made up of 3 and 4-bedroom houses, duplexes, triplexes, townhouses, and several large and small commercial properties.

The Jabiru Housing Rectification Project started property rectification works in August 2021. A total of 81 residential addresses were rectified and transferred to third parties.

## Community partnership fund objectives



### Recipients included:

- Gunbalanya School
- West Arnhem Regional Council
- Jabiru Bombers Football Club
- Jabiru Golf Club
- Gut's Touring
- Clontarf Caulfield Grammar Melbourne Campus visit
- Jabiru Community Children's Christmas Party
- Jabiru Area School Awards
- Clontarf Foundation School Awards
- Stars Foundation School Awards



# COMMUNITY SUPPORT HIGHLIGHTS

10



Indigenous vendors  
did business with ERA

INDIGENOUS  
SPEND



was 8.47% (\$2.3m) of total  
contestable spend, up from  
3% in 2021

11 MEETINGS



of the Ranger Closure  
Consultative Forum

81 HOUSES



rectified in Jabiru  
township 2022

REPURPOSED



the former Jabiru Sport and  
Social Club as a centre of  
management of housing  
rectification works

HOUSING  
RECTIFICATION



work has provided both  
local and regional employment,  
including employment of an  
additional 4 apprentices

2 APPRENTICES



providing rectification works won  
Gold and Silver at the NT Skills  
and Trade Competition

7 FAMILIES



involved in rectification works  
have made Jabiru their home

CONTINUED



to operate Jabiru Airport to enable  
community and tourism use

AWARD WINNING

Sandi Lin and Tanya  
Nakata are recognized at  
2022 Women in Resources  
National Awards



## AWARD WINNING

Tanya Nakata won the 2022 Outstanding Tradeswomen, Operator, Technician Award and the Overall Exceptional NT's Woman in Resources Award at the Newmont 2022 Women in Resources Inc. Awards. Tanya is a proud Torres Strait Islander woman who loves her work at Ranger as a Water Technician because she helps to ensure pristine waterways remain protected. Throughout

her diverse career she has continually challenged bias and supported other women in the industry. As the overall winner, Tanya will serve as the NT Women in Resources Ambassador for the next 12 months, championing the participation and recognition of talented women in the NT resource industry.

Award winner Tanya Nakata pictured at the ceremony with ERA Chief Executive Brad Welsh





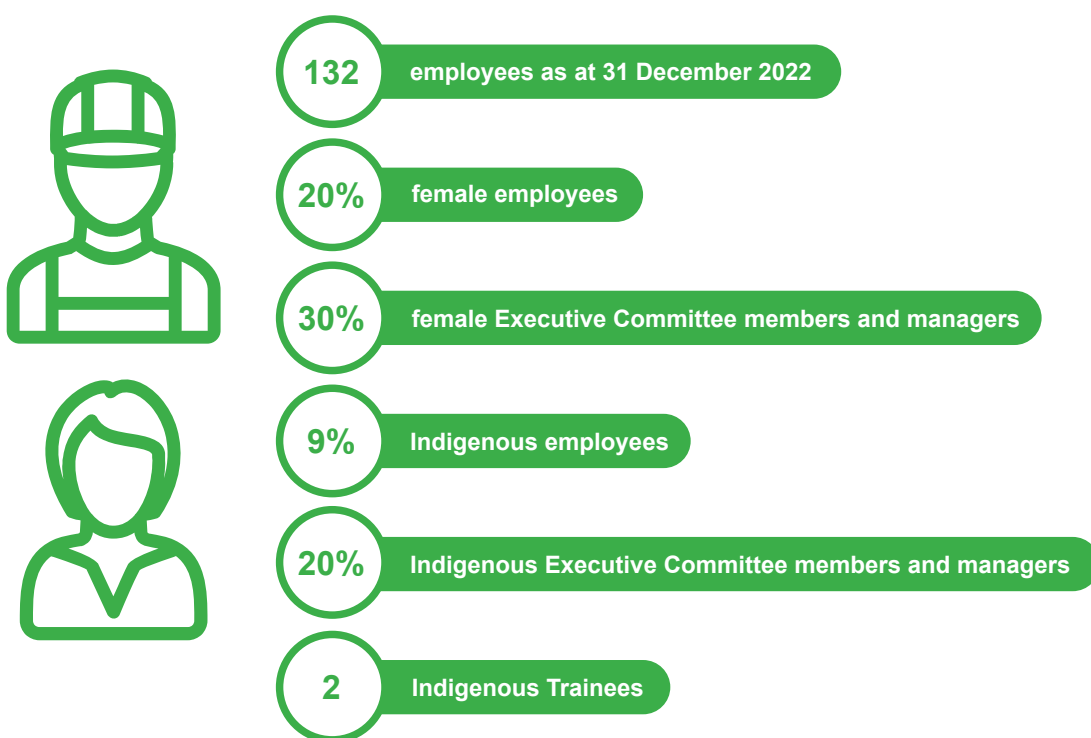


## Our People

The safety and welfare for ERA employees remains a key priority. In 2022, ERA continued with the Peer Support Program and introduced onsite access to an employee assistance program. ERA has maintained a 0 AIFR; a measurement of how often a recordable injury occurs every 200,000 work hours and considers lost time injuries, restricted work injuries and medical treatment cases.

The Safety Maturity Model (SMM) is a global Rio Tinto initiative that drives behaviours and activity to deliver effective safety performance across the three pillars

of the safety strategy – fatality elimination, reducing injuries and illnesses, and catastrophic event prevention. The model has been operational in ERA since 2018 and is based upon leadership and engagement, risk management, work planning and execution and learning and improving. ERA achieved a SMM score of 4.0 in 2022, which was above the target of 3.7 and demonstrated an increase from last year's results. To achieve this result ERA implemented leadership coaching and training, leadership success training, the Process Safety into Closure Program and the Rio Tinto Behaviours Program, while focusing on targeting leadership in the field.



## CULTURAL RECONNECTION

In 2022, ERA worked with Gundjeihmi Aboriginal Corporation (GAC)'s Cultural Reconnection Steering Committee to incorporate the cultural knowledge and desires of Mirarr Traditional Owners into rehabilitation design.

ERA's Rehabilitation and Ecology Specialist, Meg Parry, has been combining her team's environmental science research with this cultural knowledge from Traditional Owners to make sure revegetation work is aligned to the agreed Cultural Closure Criteria.

"I think the way we need to approach revegetation and ecosystem establishment is as if we're building a house. If you just build what you think is important without communication, it might be functional but it's probably not going to fit the people you are building it for. If you ask people what they like and want, like their favourite colour scheme or in our case, maybe their favourite plants, you'll get a little closer. However, if you collaborate with people on how the house should be designed and build the house together, you'll get something that has meaning and connection," said Meg.

During the visits from the Steering Committee, the input from the Traditional Owners influenced and shaped the design of the final landform and informed how Cultural Closure Criteria will be monitored and assessed over time.

"We know from our conversations that we haven't focused on the right elements in the past when it comes to revegetation. To me that just shows the importance of these conversations and how critical it is to listen and collaborate."

ERA is committed to delivering on the Cultural Closure Criteria that reflects the way the Traditional Owners wish to access and use the area for hunting, gathering, recreation and ceremony.

"We need to be creating an environment that works for the owners of the land that we are handing it back to," said Meg.

ERA welcomes the opportunity to continue to collaborate with Traditional Owners to further deliver on our commitments in the Ranger Project Area in 2023.







# ENVIRONMENT

## *Positive legacy for future generations*

With ERA's strategic priority being the comprehensive rehabilitation of the Ranger Project Area, ERA is deeply committed to the responsible environmental management and rehabilitation of this unique environment. ERA's future and ongoing sustainability will be judged by the legacy the Company leaves behind. In 2022, ERA continued to strive to create a physical, ecological, and cultural landscape that meets stakeholder expectations and that creates a positive legacy for future generations.

One of the key focuses during 2022 has been the water drawdown in Pit 3. Incorporating learnings from the successful dewatering of Pit 1, wicking at Pit 3 commenced in October 2022. This involves the careful placement of approximately 41,000 wicks into the tailings from a purpose-built barge. The wicks enable the accelerated dewatering and consolidation of the tailings. This marks a major milestone for the project as it signals the project's progress towards eventual backfilling, landform contouring and revegetation.

### PIT 3 ACTIVITIES

Turning Pit 3 into a final landform presents several technical, scientific and environmental challenges, according to Sharon Paulka, ERA's Senior Manager Approvals and Cultural Heritage. Part of ERA's rehabilitation and mine closure responsibilities is to completely cap and backfill Pits 1 and 3 to remove the void from the landscape and ensure that anything within the pits, such as tailings, is contained and the environment is protected for 10,000 years.

Sharon explained, "the process of capping and backfilling Pit 1 has been completed and we were able to learn from this and apply to the work we are now doing at Pit 3".

"We're currently in the process of wicking, which should be finished soon. Then we'll be putting down a geofabric layer over the tailings followed by waste rock. We will also be removing and treating the water from the tailings. Then once Pit 3 is backfilled and reaches its final landform stage, it will be revegetated using techniques learnt from the success of Pit 1," said Sharon.

## INITIAL PLANTING



completed at Pit 1 in  
January 2022

## \$194M SPENT



on rehabilitation

## 7 HECTARES

rehabilitated in 2022



## 136 HECTARES

cumulative rehabilitation



## PLANTED 44,500



stems, a combination of  
trees and grasses

## AFTER 5 YEARS



of work a major milestone was  
reached in April 2022 with the  
draft submission of the Pit 3  
Closure Application





## Approvals

ERA has worked in close collaboration with many stakeholders over the last 40 years, generating a significant amount of information from research and monitoring. This ongoing information collection and analysis is guiding the rehabilitation activities towards a successful mine closure.

The Mine Closure Plan (MCP) is ERA's primary mechanism to describe and seek approval for the mine's rehabilitation strategy and closure activities. The MCP seeks to consolidate the relevant information from the last 40 years and demonstrate how the current and planned rehabilitation activities will meet the required environmental regulations. It is updated and submitted for approval annually to ensure it stays current and to incorporate lessons learned from ongoing modelling and monitoring studies.

## THE UMWELT PARTNERSHIP STORY

ERA partnered with Umwelt in early 2022 to optimise the approvals process. Before ERA can begin an activity on-site that has the potential to impact the surrounding environment, the activity needs to be informed by stakeholders and approved by regulatory bodies.

Sharon Paulka, Senior Manager, Approvals and Cultural Heritage, explained that Umwelt is a great fit to support ERA's Ranger Rehabilitation Project.

"We need the right capability to support us and a partnership model with Umwelt is a great approach for the project. Umwelt has proven experience in delivering approvals for large-scale and complex mining projects," said Sharon.

"2023 is going to be a really exciting year; our partnership has had time to mature, and we've learnt a lot, which puts us in a really good place to deliver the Pit 3 backfill application and the update to 2023 Mine Closure Plan."

### ERA's key approvals focus:



**MINE CLOSURE PLAN**



**RANGER 3 DEEPS**



**PIT 3 CLOSURE**



**FINAL LANDFORM & TSF  
DECONSTRUCTION**



## Landform and ecosystem re-establishment

ERA observed successful ecosystem establishment on Pit 1 in 2022. The learning from Pit 1 is a critical input into rehabilitation work on Pit 3, and continued research, monitoring and adaptive management will ensure continued success. Some examples of ERA's activities in 2022 include innovative germination activities and developing improved visualisation techniques as detailed in the case studies.

ERA works within a set framework of requirements for closure, and success depends on the application of best practice and the use of technology within a risk-based framework. The Supervising Scientist Branch (SSB) of the Department of Climate Change, Energy, the Environment and Water will continue its oversight, extensive monitoring and research programs, in 2022, as has been done for more than 40 years.

## MILKY PLUM TRIALS

ERA Rehabilitation and Ecology Specialist Meg Parry and the Ecology Team are hoping to understand how to germinate Milky Plum, *Persoonia falcata*, seeds to add the rehabilitation flora species.

Meg explains, "Milky Plum is a very important plant for the Traditional Owners to see in the ecosystem, but it's a tricky plant to crack," said Meg.

"Milky plum seeds have a physical and chemical dormancy that needs to be broken for the seed to germinate. In the wild this is done by the seed being eaten by birds such as an emu. If you think about that process, the seed goes into the emu's stomach and is crunched and exposed to acids and then once excreted is ready to germinate, so that's what we need to recreate."

A baby Milky Plum sapling naturally germinated on Pit 1 in 2022, which was probably brought into the environment by a bird. The process of germinating a Milky Plum seed has been recreated in a laboratory environment, but it is labour intensive to achieve and so far, the process has not been recreated to suit a nursery and commercial setting.

"We know the mechanisms, so we just need to work out a methodology to make it happen. Maybe we need to get some pet emus!" said Meg.

The team will continue to work on a methodology to germinate Milky Plum seeds in 2023, with or without emus.





## KAKADU NATIVE PLANT SUPPLIES

ERA's relationship with Kakadu Native Plant Supplies (KNP) has been an important partnership for several years, and in 2022 achieved the milestone of completing the planting of Pit 1. Kakadu Native Plant Supplies is a local family-run Indigenous business in Jabiru.

KNP was founded in 2004 and was originally set up to collect seed. Almost 20 years on it is now a full ecosystem restoration company, undertaking collection of seeds to propagate them, managing the planting and irrigation processes, fire and weed management and consultation with local communities.

To deliver the enormous volume of plants required for the project and to succeed in such a harsh and seasonal environment, KNP grow a lot of seedlings in the nursery to an appropriate age. KNP then works with ERA using a special technique to plant the seedlings on the waste rock substrate to give them the best start.

## 3D PRINTED PROJECTION MODEL

ERA has collaborated with Charles Darwin University, the Northern Land Council and Gundjeihmi Aboriginal Corporation to develop a visual and interactive way to share how the landscape of the Ranger Project Area will change through the different stages of rehabilitation.

Field Studies and Monitoring Lead Sarah Reid explains that the 3D model is helping to give context to conversations with Traditional Owners about the site.

"Everything we do as part of the rehabilitation is hard to visualise and we've found images and maps don't give enough context unless you are really familiar with the area from an aerial view," said Sarah.

The white 3D tiles fit together to create a map of the Ranger Project Area and beyond, including things like the operational area, the escarpments and the topography of the landscape.

Each tile can be replaced to show the changes to the landscape that will occur at different stages of rehabilitation.

An image can be projected over the tiles and changed to give the viewer different information and experiences.

"You can put different projections on top of the tiles so you can show people things like where heritage listed sites are, you can show rainfall mapping, you can do a satellite image of the site or a terrain image," said Sarah.

"We've found it really useful for communication with Traditional Owners. We set it up on a table and everyone can stand and move around it which creates open conversations about the work."

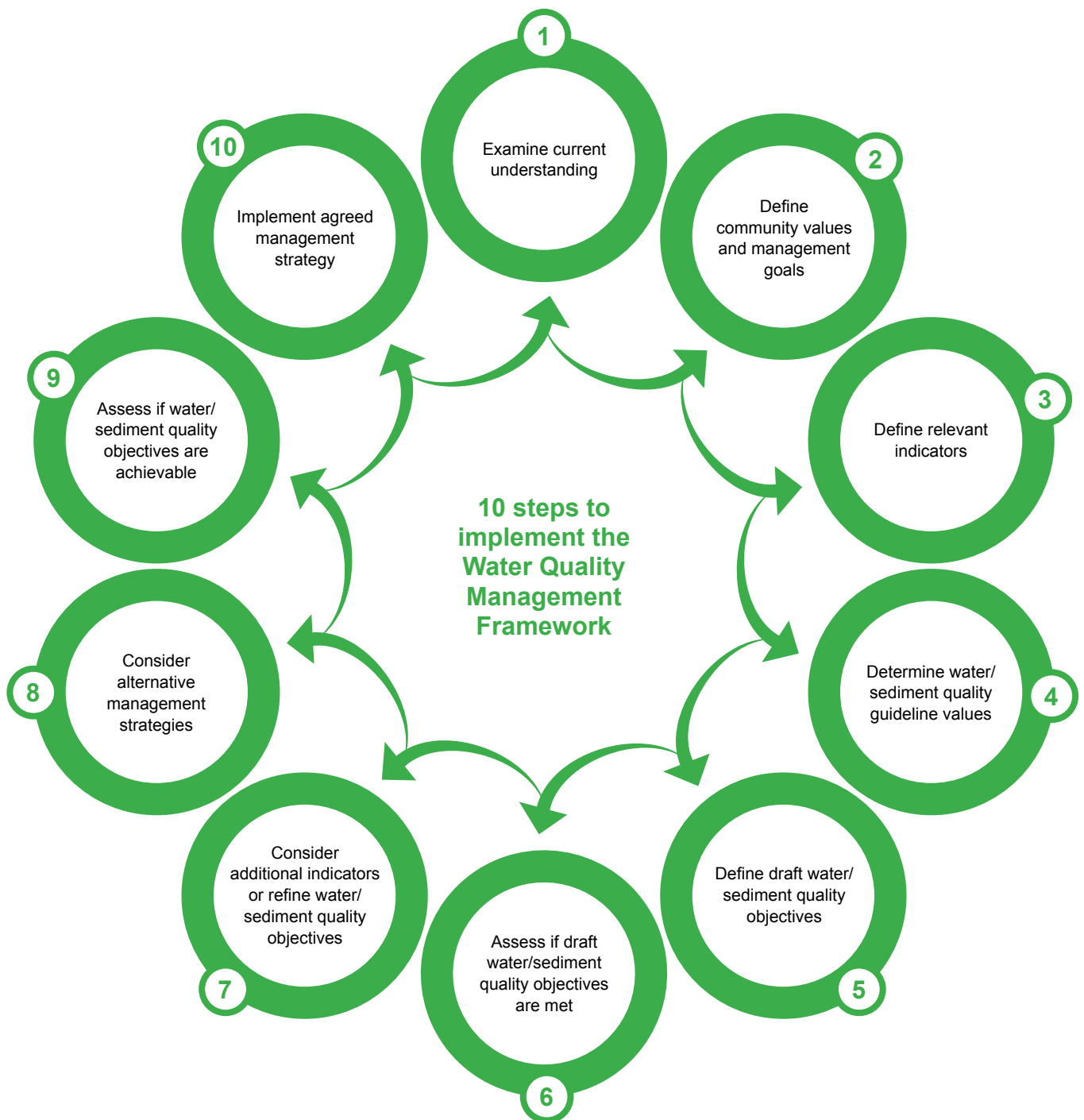
"Rehabilitation work can be really technical, and it can be hard to visualise, but this model opens the work up to more audiences".

ERA will continue to use the 3D Printed Projection Model to share the work they are doing at the Ranger Project Area with the community.



## Water and sediment

Water and sediment on the Ranger Project Area are managed for both physical environmental protection and human health outcomes. Water management is a critical component of successful rehabilitation. There are complex needs across the Ranger Project Area, and ERA uses best practice to inform closure criteria by referring to the Australian and New Zealand Guidelines for Fresh and Marine Water Quality Management Framework (as shown below). Stakeholder engagement and independent scientific oversight are key contributors to best practice. Engagement with Traditional Owners ensures relevant cultural values are incorporated into the water management outcomes. The SSB provides technical oversight of water management initiatives.



*Adapted from the Australian and New Zealand Guidelines for fresh and marine water quality, 2018*

## STAGE 52 CATCHMENT CONVERSION TRIAL STORY

The Stage 52 Catchment Conversion Trial is a small piece of final landform north of Pit 1 at the Ranger Project Area which is currently collecting data on erosion, sediment and water run-off.

The ERA Environmental Engineering team has worked on Stage 52 since it began in 2019 and explained that the trial will provide ERA with important data to complete its rehabilitation work.

“Stage 52 is step one to help us answer a lot of questions around our capability to manage and treat water with our current infrastructure and processes. The trial will tell us if we need more equipment, a bigger processing area or a different approach all together.”

Stage 52 is designed to catch surface runoff in a set of drains, transfer stump and sediment basin which were constructed in 2022.

“Stage 52 hasn’t existed for a long time, but it was a really big achievement to have construction completed in 2022. The teams were so efficient and were out on site in the middle of the wet season working,” the team said.

“It’s been so important that we’ve had input from different technical experts to make sure we’re getting the best results. I’m really proud of our collaboration with different ERA teams, contractors and consultants for this project.”

In 2023 ERA will continue to monitor the data from the Stage 52 Catchment Conversion Trial to inform erosion, sediment and water activities on final landforms at the Ranger Project Area into the future.

18,153   
(43%) of wicks Placed

## AQUATIC PATHWAYS

risk assessment complete

1.9 GL 

of process water was  
treated by the brine  
concentrator

7.8GL  
of water processed

## ACHIEVED

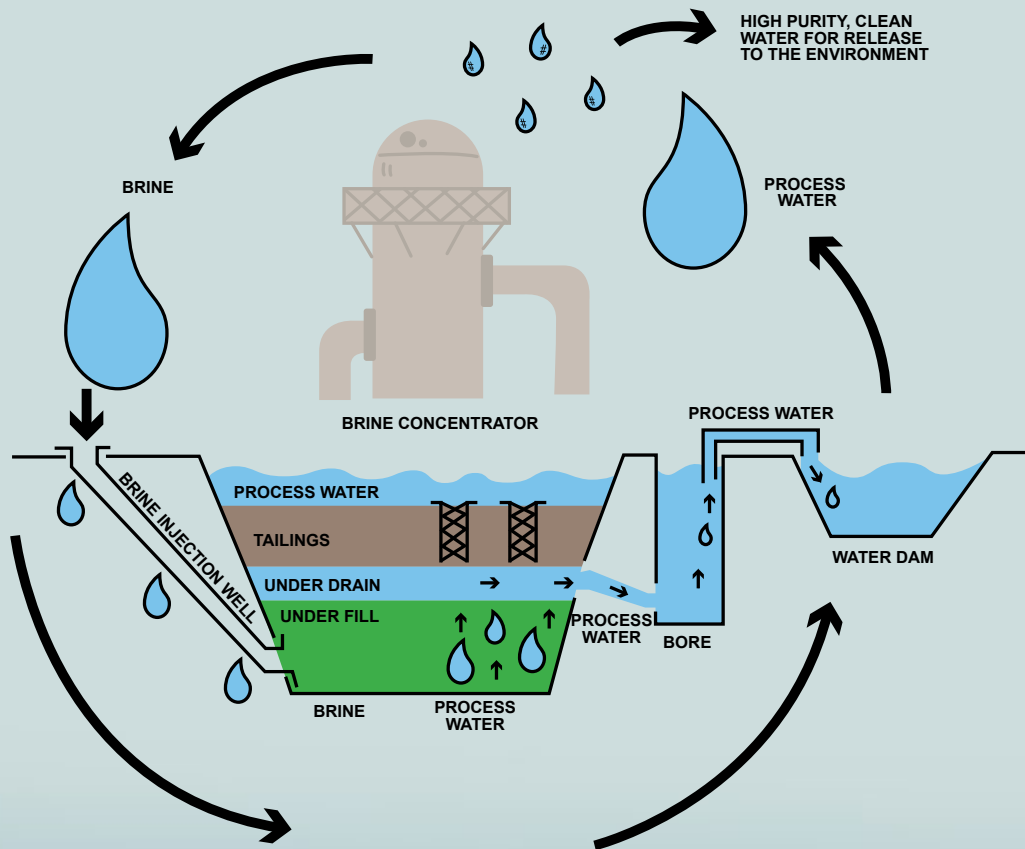
the first of our Environmental  
Requirements

\*GL=Gigalitres



Another key focus area has been that of brine management. Brine is a by-product of current process water treatment which creates a concentrated salt that requires long term management. During 2022, a new brine injection system was engineered and built, ready for commissioning in 2023. Brine injection wells form part of the process that will allow ERA to cap and backfill Pit 3 and work in conjunction with the wicking process and the brine concentrator to remove and treat liquid from the tailings.

### Process water flow



# LOOKING FORWARD

*ERA must rehabilitate the Ranger Project Area to establish an environment similar to adjacent areas of Kakadu National Park such that, in the opinion of the Minister with the advice of the Supervising Scientist, the rehabilitated area could be incorporated into the Kakadu National Park.*

ERA has set a clear vision on what the Company wants to achieve and now needs to define how to measure “world-class”. During 2022, ERA has undertaken a detailed review of suitable frameworks to provide an evidence base to shareholders and stakeholders that progress is being made on the journey towards world-class rehabilitation. The International Council of Metals and Mining (ICMM) has developed a Closure Maturity

Framework (CMF) that allows business to assess their practice across a range of closure metrics. Using this Framework as a foundation, ERA will design a fit-for-purpose measurement approach that provides both the basis for reporting and a strong evidence-based assessment of the journey. In future reports, this will become a pivotal indicator of ERA's performance.

## CLOSURE MATURITY FRAMEWORK



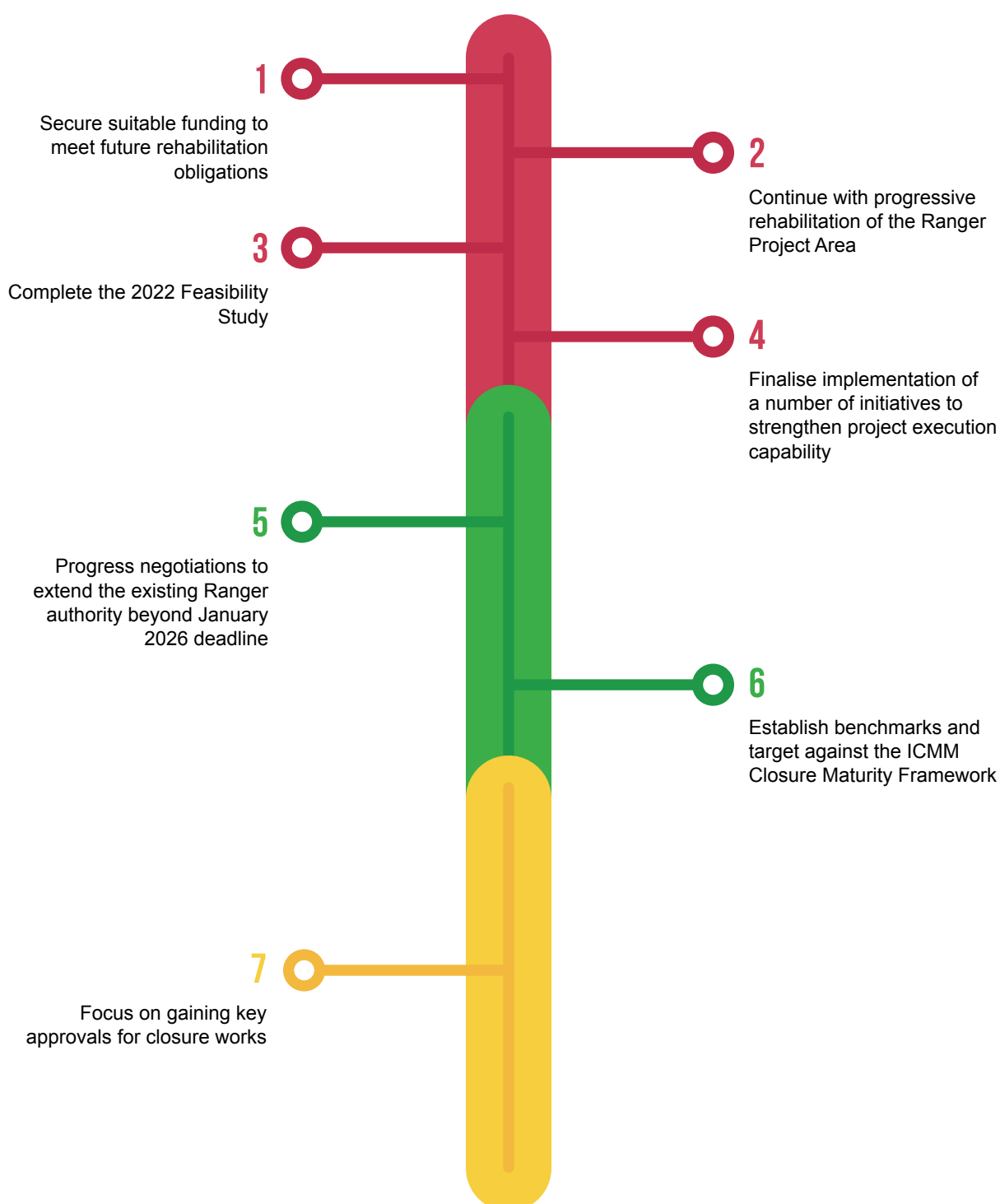


## Material environmental and social matters

The Authorisation contains the specific environmental and consultation requirements for the former Ranger Uranium Mine. Addressing the environmental requirements within a framework of community and regulatory engagement shapes the overall material or focus issues for the Ranger closure. However there

are additional areas requiring attention including ASX obligations and financial certainty (for further information please refer to ASX [Announcements - Energy Resources of Australia](#)). As we continue into project execution, the material matters will change. To that end, in 2023 ERA will be working to refresh sustainability reporting using ICMM CMF which will support ERA to adapt to changing material matters.

### ERA's near-term strategic priorities are to:



The report has been prepared to provide a general overview of ERA's performance with respect to environmental, social and governance matters for the year ended 31 December 2022. It should be read in conjunction with ERA's 2022 Annual Report, which provides a detailed overview of ERA's financial and operating performance for 2022. All currency mentioned in this Report is in Australian dollars unless otherwise stated. All statements other than statements of historical facts included in this Report are forward-looking statements. Such forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties and other factors, many of which are beyond the control of ERA, which may cause actual results to differ materially from those expressed or implied in such statements.



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