



# ERA's powerhouse

In Northern Australia, a uranium mine that is surrounded by a national park is making a huge impact on global energy supply and international efforts to cut emissions.

*Words by John Arlidge  
Site pictures by Cameron Laird*







**The Ranger uranium mine, owned by Energy Resources of Australia Ltd (ERA), is special in many senses, not least because of its magical location surrounded by the World Heritage wilderness of Kakadu National Park. It's about three hours drive from Darwin in Australia's Northern Territory, so let's go there.**

Take the Stuart Highway south and, at Humpty Doo, turn left onto the Arnhem Highway. Have a coffee break at the Bark Hut and, monsoonal downfalls permitting, you will find yourself at Jabiru, in Kakadu.

Home to teeming fauna – crocodiles, marsupials, lizards, snakes, insects, fish and migratory birds like the graceful Jabiru stork – it is a wild place that the traditional aboriginal owners, the Mirarr people and their antecedents, have occupied for millennia. Rock paintings in caves within the park have been dated as being between 20,000 and 40,000 years old and possibly more, which would make them the world's oldest.

The park is huge – almost the size of England – characterised by craggy sandstone outcrops (an artist's dream), open woodland and plains where, during the wet, native grasses grow two metres tall. The concept of spring, summer, autumn, winter is alien here; there are two seasons – wet and dry.

“It really is a stunning part of the world,” comments ERA chief executive Rob Atkinson. “I had the pleasure of taking Rio Tinto's chairman, Jan du Plessis, on a helicopter tour recently and it really brought home what a wonderful, unspoilt place this is. The creeks and streams leading into the Alligator River are pristine.”

ERA is a publicly listed company, of which Rio Tinto owns 68 per cent. The Ranger mine produces one tenth of the world's uranium.

The product is exported, converted and refined into fuel rods to feed civil nuclear power reactors in Europe, North America and Asia. Ranger provides the fuel for fully one per cent of all electricity generated worldwide. Nuclear power's near zero greenhouse gas emissions are comparable to solar and wind generation over the product lifecycle, so, Ranger's contribution to carbon abatement is huge; the equivalent of reducing Australia's emissions from electricity generation to nothing. And all of this comes from just over 5,000 tonnes per annum of uranium oxide.

ERA has been exporting from Ranger for 30

years – it is the second mine in the world to exceed 100,000 tonnes of uranium production. Rio Tinto acquired its interest when it purchased North Limited in 2000.

The Ranger lease is 79 square kilometres and is surrounded by the park. Rob and his team are well aware of the heavy responsibility they carry to ensure that the mine's presence has minimal impact on the country over its fence. He considers management of the environment and maintaining relations with the traditional owners of the land to be the highest priorities.

“We have a special mission. We are highly sensitive to our location and, in particular, we cannot allow any of the process water, or the rainfall that falls onto the site, to leave it unless it has been treated.” This condition of the mine's existence is willingly embraced.

In practice, for general manager, Operations, Dan Janney and his team, it means giving water management priority over the mine plan. “We deal with an average 1,500mm (60 inches) of rain each wet season and our site inventory reaches around nine gigalitres (9,000,000,000 litres). Process water is stored in a secure, lined dam and is disposed through evaporation and a treatment plant. We also contain rainwater that falls on the lease in several large ponds.” It is tested for contaminants at multiple points, as is groundwater, on and off site.

The operations team is focused on extending production to 2020/2021, when ERA is legally required to cease mining and processing. Pit three will be exhausted in 2013, leaving large stockpiles of low grade ore to be processed. They propose a “heap leaching” operation to dissolve and recover uranium oxide. ERA is well advanced with the Environmental Impact Study required to approve the method and meet regulatory standards. Rob hopes to put a proposal to the ERA board and Rio Tinto by year's end.

They are also investigating the possibility of a new underground mine below the existing Ranger Pit Three. A team is determining how best to sink an exploratory decline so that detailed testing on Ranger 3 Deeps, as it is called, may be carried out. Says Rob, “We know that the orebody exists in variably sized pods and we need to know more about these before we can decide how to mine them.” If the project is feasible, a detailed Environmental Impact Study will be required.

Exploration is continuing elsewhere within the lease. ERA also has a lease nearby at Jabiluka,



World Heritage Site: the teeming wildlife of Kakadu – including one of the world's oldest rock paintings.

though this will not be mined without the agreement of the traditional owners. Rob says the heap leaching and Ranger 3 Deeps projects are, therefore, vitally important to Ranger's future. "They will enable us to keep producing around 5,000 tonnes a year after 2013."

ERA has influential allies in its desire to maintain existing production levels. The Northern Territory's chief minister, Paul Henderson, supports the expansion projects. "Subject to conditions that will continue to protect the environment and the interests of traditional owners, we are very keen for the projects to go ahead," he says.

He endorses ERA's commitment to the community through the Education Partnership programme and through indigenous employment. "It is a very remote part of the world and there are several isolated communities ERA is helping in very tangible ways through dedicated programmes."

In 2002, facing continuous local opposition, ERA agreed not to mine the nearby Jabiluka lease without the Mirarr's consent and rehabilitated a test decline established by the former owners. Since then, relations have stabilised, although the Mirarr website continues to pronounce that: "the voices of Mirarr continue to be ignored or marginalised by the mining industry and all levels of government."

Against this background and the physical and cultural isolation of aboriginal communities, Rob Atkinson is in no doubt that indigenous employment is ERA's most difficult challenge and its most rewarding success. Some 500 employees and contractors work on site or in the Darwin office and, last year, the company achieved 20 per cent indigenous employment. A formal celebration was held to mark the hundredth indigenous employee.

Rob says indigenous employment is "easy to talk about and very difficult to achieve." Aboriginals in the area are bonded to an ancient culture. "They have important obligations to their extended family and to communal ceremonies." Working arrangements have been changed to accommodate their cultural needs and training programmes include components on work readiness and life skills, designed to bridge cultural divides. If indigenous people need to leave work to meet cultural or family obligations, those wishes are accommodated whenever possible.

"I am extremely proud of ERA because our people have not just talked about this, they have gone out and achieved it," Rob says. "It is difficult because for every person you employ you lose almost one, so it is easy to become discouraged. Our challenge in the future is to improve our retention rate of indigenous employees."

A recent success was the engagement of the Gunbalanya township (formerly known as Oenpelli). Nine people from Gunbalanya are presently employed. During the dry, they travel a 40 kilometre dirt road daily to the mine. In the wet they are flown in for fortnightly shifts.

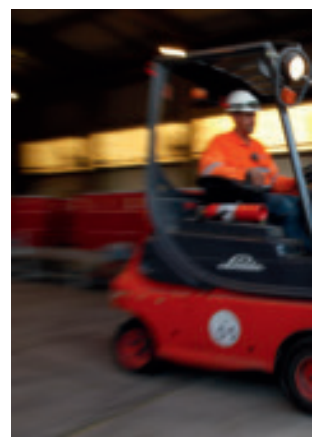
Half of the mine's employees fly in fly out from Darwin; most others live in Jabiru, a small town near Ranger. ERA supports a native title claim by the Mirarr people over Jabiru, which will give them ownership of land on which the town is located. It has been the longest running native title claim before Australia's Federal Court.

"We felt it was an important way to demonstrate our goodwill to the traditional owners," explains general manager of External Relations, David Paterson. "In all the vast area of Kakadu, a postage stamp of township land was the only bit that was not aboriginal land. To us it made sense for this to change." The Mirarr will grant a 99 year lease that will continue tenure for residents and businesses.

The Northern Territory is strange and beautiful; full of contrasts. Not all are flattering: it has the highest legal road speed limit in Australia (130km/h) and the highest average alcohol consumption. Perhaps not coincidentally it has the highest *per capita* road fatalities. Todd Simms, manager Health, Safety and Environment, is tasked with ensuring that nobody on his patch adds to those dubious statistics, which is where the cup of coffee at the Bark Hut, half way between Jabiru and Darwin, comes in. If you travel to Ranger, Todd will surely let you know beforehand that ERA imposes its own road rules on employees and visitors. They should observe a 110km/h speed limit, take a break on the trip between Darwin and Jabiru and should not drive at night on the Arnhem Highway to ensure a safe arrival.

**Read more about ERA at  
[www.energyres.com.au](http://www.energyres.com.au)**

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Scenes around the Ranger mine. The operatives below are Jarrod Franey and Stephany James.

