

Wind, solar project a major concern

By BROOKE LITTLEWOOD

THE Nullarbor Plain – straddling the border between South Australia and Western Australia – is known by many for being a vast, remote and dry savannah.

However beneath the surface is a hidden network of limestone caves and a vast aquifer, with water-filled tunnels carrying ancient groundwater to the Great Australian Bight.

Now the landscape, which has a rich history dating back millions of years to the Pliocene epoch, is under threat by a mammoth \$100 billion renewable energy project.

The Western Green Energy Hub would be the largest of its kind, sprawling across more than two million hectares of WA Mining Native Title, pastoral leases and unallocated crown land between Eucla and Cocklebiddy.

Once completed it would feature up to 3000 wind turbines and 60 million solar modules – depending on scale and stages of project – to produce 3.5m tonnes of green hydrogen a year, targeting international and domestic markets.

Dr Stefan Eberhard is spokesperson for Save the Nullarbor and has explored and studied the Nullarbor's cave system for more than four decades.

He and a group of fellow expert scientists, hold grave concerns about the large-scale energy project, saying it threatened to seriously harm the natural and cultural heritage values on the Nullarbor.

"The Nullarbor Plain is a nature hotspot, with outstanding universal values," Dr Eberhard said.

"It is the world's largest arid and limestone karst system, which includes a spectacular hidden world of ancient caves and rock holes of staggering dimensions, beauty, scientific values and priceless cultural importance.

"This unique and globally



□ Bronwen and Stefan Eberhard say the Nullarbor Plain should be nominated for a World Heritage listing. Picture by Stefan & Bronwen Eberhard Photography.

renowned karst region would be seriously damaged if this colossal industrial development is allowed to go ahead on the limestone."

In recognition of its natural and cultural values, Dr Eberhard and the group of scientists from across Australia, the United States and Europe, have urged the Federal government to intervene and protect the western side of the Nullarbor.

"It is a tragic irony that alongside the border of this proposed industrial development in WA, lies the Nullarbor National Park-Wilderness protection area in SA," Dr Eberhard said.

His comments come after plans from multinationals InterContinental Energy (46pc), CWP Global (44pc) and Mirming Green Energy Ltd (10pc), were this month lodged with the WA Environmental Protection Authority (EPA).

To set the level of environmental impact assessment (EIA) for the proposal, initial public comment was invited for just seven days, with submissions closing on November 17.

On Monday, November 25, the EPA confirmed it would undertake a public environmental review of the proposal.

It stated a detailed assessment was required to determine the extent of the proposal's direct and indirect impacts, and whether the EPA environmental factors could be met.

□ World Heritage listing

In 1992, the Federal government commissioned an expert study to assess the World Heritage significance of karst and other landforms across the Nullarbor region.

Many World Heritage properties are listed with only one criterion – the Nullarbor karst was found to meet four.

This was before even considering the cultural heritage or marine ecosystem values.

"Nothing has ever been done about the 1992 report, presumably because the Nullarbor has never been under threat – until now," Dr Eberhard said.

"Over the past 32 years, there has been significant research published both nationally and internationally, and very much more field documentation of the caves, blow holes and rock

holes by Australian cavers and speleologists."

To date, and after more than seven decades of exploration and research, cavers and speleologists have documented more than 13,000 karst features and mapped more than 150 kilometres of cave passage.

However this is just a fraction of what lies undiscovered beneath the surface of the Nullarbor.

Dr Eberhard and his scientific colleagues were alarmed and concerned that Western Green Energy Hub's referral supporting document to the EPA failed to recognise landforms – notably caves and other karst features – as key environmental factors for consideration in the EIA process.

They said large tracts of the limestone had not yet been systematically searched for caves and karst features, with entrances on the surface giving just an inkling of what lies beneath.

According to Dr Eberhard, inside the proposed development footprint alone, cavers have identified more

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than 4500 karst features including more than 400 caves, 500 rock holes, 1900 blow holes and 1470 dolines (sinkholes).

He said a comprehensive reappraisal of the entire Nullarbor limestone region was now well-overdue.

“About two thirds of the Nullarbor karst is in WA and one third in SA.

“A substantial portion of the karst on the SA side is protected within the Nullarbor National Park and Wilderness Protection Area, the Nullarbor Regional Reserve, and the Far West Marine Park/Great Australian Bight Marine Park.

“In contrast, on the WA side, most of the karst including the central portion with highly significant and fragile caves remains unprotected and threatened by this proposed industrial development.”

□ **Outback transformation**

The Nullarbor Plain’s wide-open spaces are dotted with tiny outback posts including Eucla and Border Village.

The combined population at both settlements are currently less than 100 people.

If the energy hub goes ahead, a proposal has been put forward to build a new township for up to 3500 workers on the edge of the escarpment, just west of Eucla.

By the time it is fully operational, the population is expected to soar to about 8000 people.

Dr Eberhard said a big increase in the local population would come with that of visitor pressure and inevitable “wear and tear” on the surrounding environment, particularly inside the Eucla National Park, Nullarbor National-Park Wilderness Protection Area and the Nuytsland Nature Reserve.

“Major unintended yet intractable consequences are the impact this project would have on the surrounding country, especially neighbouring SA where the Nullarbor and Great Australian Bight are currently being promoted for World Heritage nomination,” he said.

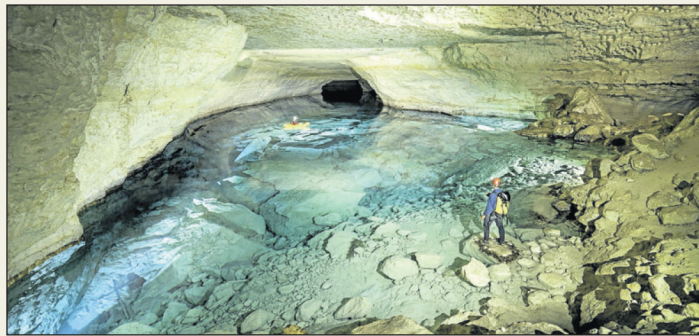
In documents on the WA



□ Dr Eberhard said increased traffic from the green energy project would put the Nullarbor Plain’s fragile soil at risk. Picture by Matej Lipar.



□ Dr Eberhard said a big increase in the local population would come with that of visitor pressure and inevitable ‘wear and tear’ on the surrounding environment. Picture by Stefan & Bronwen Eberhard Photography.



□ Beneath the surface of the Nullarbor lies a hidden network of limestone caves and a vast aquifer, with water-filled tunnels carrying ancient groundwater to the Great Australian Bight. Picture by Stefan & Bronwen Eberhard Photography.

EPA’s website, the proponent stated it could prohibit worker access to the caves on penalty of dismissal.

However, Dr Eberhard stated it would be physically impossible to monitor and prohibit access to all of the significant caves, and other culturally sensitive sites including rock holes, especially those outside the jurisdictional control of the development.

He said even those caves, which are currently closed to public access for cultural heritage or safety reasons, are entered without authority and occasionally damaged with graffiti and litter.

“I cannot see how the idea of excluding worker access could work in practice, while still allowing the longstanding fair and reasonable access, which is currently being enjoyed by locals, travellers, cavers and scientists.

“This intractable problem applies, especially to the many caves and rock holes situated outside the proponent’s jurisdictional authority.”

At the end of construction, the long-term village will accommodate the operational workforce, their families and

partners and a service driven population.

As well as the wind turbines, solar farm and worker village, the development proposes to install:

□ Access tracks – these will link the wind turbines and other infrastructure, with track alignments cleared to various widths, depending on the purpose.

□ Rail siding off the Trans-Australian railway – to take advantage of existing rail access that will assist with logistics during construction and operations.

□ Marine Offloading Facility – as a basin excavated into the coast, with accompanying breakwaters and an excavated approach channel created to allow safe vessel access for materials import and hydrogen/fuel berths.

□ Desalination plant – to produce ultra-pure water that will be the primary source for input to the electrolyzers, as well as at the green ammonia (or other vector) plant for cooling, and for potable water for the worker villages.

The plant would be located close to the coast, and the proponent claims it can be

visually integrated into the dune system and;

□ Offshore ammonia (or other vector) export pipeline – extending into State Waters only, to transport the green ammonia (or other vector) to an export terminal where it will be loaded onto ships.

A gap has been put in the new South Coast Marine Park boundary, allowing ships to come in and out for the proposed new shipping port.

Dr Eberhard said if the proposed hub went ahead, the popular lookout of Yinyila sand dunes and the Southern Ocean from Eucla would be marred by the desalination plant and shipping port.

He said wind towers would also be visible to travellers along elevated sections of Eyre Highway, as well as a 200km stretch on the Indian-Pacific Transcontinental Railway between Deakin and Nurina sidings.

“The gigantic towers and wind blades – which could be two to three times the height of the Bunda Cliffs – would be visible from 30 to 40 km away, or even further,

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depending on the height of the towers.”

□ Looking after the land

While the purpose of national parks is to protect nature, landscapes and biodiversity, there is currently no ranger present at the Nullarbor National Park or Nuytsland Nature Reserve.

The nearest bases are about 300km east at Ceduna or 900km west at Esperance.

Ironically on the Nullarbor, Dr Eberhard said caves situated within National Parks, Reserves and Crown Land had suffered more visitation and consequently the most degradation.

He said this was due to easy access from the Eyre Highway and absence of an onground ranger.

“In contrast, the caves inside pastoral leases are more remote from the highway, less visited and overall, in better condition,” Dr Eberhard said.

“This is because many of the would-be casual visitors, and occasional vandals, may be discouraged from entering at the front gate.

“They also may not want to bother asking permission from the leaseholders, who have valid concerns with biosecurity risks and livestock management.”

The Nullarbor’s limestone soils are fine-grained, clayey and prone to erosion, held together by a thin and delicate cryptogam crust of lichens, mosses, fungi and blue-green algae.

These soil crusts are known to improve nutrient cycling, soil moisture retention and provide protection against rain drop impact, sheet flow and wind erosion.

Dr Eberhard said the crust was fragile and prone to damage from any kind of ground disturbance, especially vehicles and excavation.

Once it is damaged or lost, the soil is open to erosion when it rains or the wind blows.

“When it rains the country is known for becoming impassable, with bush tracks quickly becoming slippery, boggy and rutted out,” he said.



□ Expert scientists say hidden underground network of limestone caves will be threatened by a mammoth wind and solar project. Picture by Stefan Eberhard Photography.

“Tracks are damaged if they are driven over in wet conditions and further mess is made when people drive around to the side and onto vegetation to get out of bog holes.

“This creates a wider track, and then wider again.”

While people living and working on the Nullarbor know to stay off the country in wet conditions, Dr Eberhard was concerned about the impacts should the project go ahead.

That is because it will involve a total clearance (permanent and temporary) of 27,188ha of land and partially clearing a further 77,000ha.

He said the construction of thousands of kilometres of road, power lines and underground pipelines would damage and erode the soil and potentially change the hydrology, sediment and energy inputs into the underground ecosystem.

“Besides the caves and rock holes, the overall integrity and natural intactness of the landscape across this distinctive biogeographic region, is one of its redeeming qualities, which would be damaged if this goes ahead.”

□ Avoiding environmental impact

In documents posted on the WA EPA’s website, the proponent said it was committed to mitigating direct environmental impacts by avoidance through development of the proposal’s conceptual design.

This included consideration

of ecological values, the locations of significant caves and avoiding areas of cultural heritage importance.

“The locations of existing infrastructure and other physical environment and logistical constraints have also been jointly considered, to arrive at an overall indicative footprint that optimises the design around these key constraints without affecting the viability of the proposal,” the documents stated.

“This fundamental mitigation strategy will be continued through the design and implementation of the proposal.”

The proponent said it could commit to avoidance by mitigation, particularly in the upstream, as:

□ The input resources being accessed for the proposal, the sun and wind, were not fixed to specific locations in the landscape, but are present across the entire development envelope and;

□ The development envelope was large, but also ecologically very similar across its extent, which will accommodate the proposed footprint.

It identified eight of the EPA’s environmental factors as preliminary key factors for the proposal including – benthic communities and habitat, coastal processes, marine environmental quality, marine fauna, flora and vegetation, terrestrial fauna, greenhouse gas emissions and social surroundings

The remaining six factors – landforms, subterranean fauna, terrestrial environmental quality, inland waters, air quality and human health, were not considered key environmental factors for EIA.

Dr Eberhard and the group of scientists said failure to adequately recognise karst and karst landforms, particularly caves and rock holes, as a key environmental factor was a serious deficiency in the proposed development.

“Irrespective of even the most strident commitments to impact avoidance, mitigation and rehabilitation,” he said.

“Even if such measures are made legally enforceable under EPA conditions of approval, the proposed development would wreak unavoidable harm.

“This harm would be environmental, cultural and social, not only within the proposed development footprint, but very importantly across the entire Nullarbor region and Great Australian Bight.”

□ An alternative future

After hearing about the proposed energy development about two years ago, Dr Eberhard and his wife Bronwen subsequently co-founded Save The Nullarbor.

The not-for-profit incorporated association is made up of volunteers, whose shared mission is promoting protection of the Nullarbor, through the provision of information and education about the region’s natural aesthetic and scientific values.

It has a rapidly growing number of supporters and an online petition with almost 15,000 signatures to date.

“We believe the sustainable future for the Nullarbor limestone region depends on fostering environmental, social and economic opportunities and outcomes, which benefit the environment and people,” Dr Eberhard said.

“This includes the continuation of good farming practices and small-scale low-impact ecotourism and Indigenous tourism enterprises.”

□ For information visit savethenullarbor.org

