

T: 08 8946 6553

E: [vc@cdu.edu.au](mailto:vc@cdu.edu.au)

W: [cdu.edu.au](http://cdu.edu.au)

Committee Secretary  
Senate Standing Committees on Environment and Communications  
PO Box 6100  
Parliament House  
CANBERRA ACT 2600

By email: [ec.sen@aph.gov.au](mailto:ec.sen@aph.gov.au)

31 October 2023

Dear Committee members,

RE: MIDDLE ARM INDUSTRIAL PRECINCT

I write to provide a short submission on behalf of Charles Darwin University (CDU) regarding the Middle Arm Industrial Precinct.

CDU acknowledges the need to drive economic growth in the NT and for this reason supports the Middle Arm Industrial Precinct. The aspiration for Middle Arm is such that it can deliver green energy transition, new export markets in critical minerals and agribusiness, and be successfully underpinned by circular economy principles. The support is not unqualified and this submission addresses the importance of regional environmental monitoring and community engagement.

### **Australia's most connected University**

CDU's vision is to be Australia's most connected university by being courageous and making a difference in the Northern Territory (NT), Australia and beyond.

CDU is the only university headquartered in the NT with campuses in Darwin, Alice Springs, Palmerston and Katherine and study centres in Nhulunbuy and Tennant Creek. The NT spans approximately one-sixth of Australia's landmass and yet is home to just one per cent of the population, of whom 30 per cent are First Nations peoples.

CDU is a dual sector university with around 7,500 higher education and 3,000 vocational full time equivalent students. Around seven per cent of higher education and 25 per cent of vocational education students are First Nations students, and CDU has the highest proportion of remote students in higher education in Australia.

As a progressive research-intensive university with a regional focus, CDU prioritises the complex issues facing Northern Australia. The Times Higher Education World University Rankings places CDU 29th of 37 ranked universities in Australia, despite being one of the smallest. Research Institutes at CDU, including the Research Institute for the Environment and Livelihoods, the Menzies School of Health Research, the Northern Institute and the Energy and Resources Institute, and their collaborative research networks, provide a strategic framework for research engagement.

## Response to Terms of Reference

CDU welcomes the opportunity to contribute to the Senate Standing Committees on Environment and Communications' Inquiry into the Middle Arm Industrial Precinct.

### **(a) the development of Darwin's Middle Arm Industrial Precinct, the role and funding intentions of the Northern Territory and Commonwealth governments;**

The proposed development of the Middle Arm Industrial Precinct (the Precinct) would enable common-user support infrastructure to maximise industrial facilities and de-risk private investment. The infrastructure proposed is hoped to spur increased private investment, support new industries, and drive economic growth through production and employment activity. In turn, this is hoped to drive population growth in the NT, increasing economic opportunities for Territorians.

While Middle Arm is located near Darwin, the expected economic growth associated with projects extends across the Territory. CDU understands projects would have a focus on enhanced energy security and critical mineral development. Technologies that require further scientific development, especially green hydrogen and carbon capture and storage (CCS), are also considered.

CDU intends to support workforce growth associated with the Middle Arm Precinct through the delivery of higher education and vocational training. CDU would work with government and industry bodies to identify training and education needs as the Precinct develops. CDU also anticipates a corresponding expansion of research collaboration with industry in areas of growth especially through the CDU Energy and Resources Institute.

### **(b) the likely and intended future uses of the site as well as the industries and supply chains that would benefit from those plans;**

CDU understands there is a strong focus on decarbonisation industries, especially the transmission of solar power and the future possible use for the storage and transmission of hydrogen and carbon capture and storage. This is in addition to more traditional resource processing and exports, especially liquified natural gas, but also critical minerals.

A technologically agnostic approach for carbon dioxide reduction through a combination of green energy generation (including green hydrogen) and Carbon Capture and Storage underpinned by circular economy principles is a balanced and practical approach to aiding the world's transition to net-zero.

Furthermore, critical minerals are required for the green energy transition as well as to address demands placed by the requirements of modern technologies. The NT is home to globally significant reserves of critical minerals and the future extraction and use of these minerals is important for our competitiveness, and our national sovereignty and resilience. The Precinct would provide the opportunity to grow this industry in Australia in a manner that would enable critical minerals production to be as sustainability-friendly as practically possible if the principles underpinning the Precinct are adhered to.

Increased industrial estate and better freight connections (air and maritime) would allow the NT to demonstrate greater capacity to process and store outputs. This could open new export markets directly into Asia, rather than relying on supply chains that first send outputs South.

CDU also sees opportunity for the Precinct to be used for the future development of agribusiness. Many of the constraints to Northern agribusiness are related to a lack of direct connections to Northern markets which restricts the competitiveness of products. Considering agribusiness opportunities through the Middle Arm Precinct would also diversify the project interests.

- (c) any climate, environmental, health or cultural heritage impacts as a result of developing the harbour and the industries seeking to establish themselves at Middle Arm;**
- (d) the conduct, process and implications of the proposed strategic environmental assessment for Middle Arm;**

CDU strongly supports rigorous environmental monitoring (Strategic Environmental Assessment) for the Precinct and expects specific environmental monitoring would also apply to projects that may ultimately use the Middle Arm Precinct.

The Strategic Regional Environmental and Baseline Assessment (SREBA) set of studies used to gather baseline data for the Beetaloo Basin sets a high standard for environmental monitoring in the NT. The SREBA took a broad approach to defining impacts, including water quality, aquatic ecosystems, terrestrial ecosystems, environmental health and population health. The collaboration with community in environmental monitoring, allowed a comprehensive approach.

In committing to ongoing and rigorous regional-level monitoring for the Precinct, the Government would build community expectation for strong accountability.

CDU has considerable expertise with respect to identifying and monitoring specific impacts from developing the harbour, informing management strategies to facilitate the successful development of the Precinct, especially the shipping channel and associated infrastructure development. CDU is a key partner in the Northern Territory Government Darwin Harbour Integrated Reporting Program,<sup>1</sup> that produced the 2021 Darwin Harbour Integrated report Card<sup>2</sup> providing a baseline assessment and methodologies to track the overall health of Darwin Harbour over time.

#### Strategic environmental planning for the Greater Darwin region

More broadly, there is a need for a strategic regional environmental plan for the Greater Darwin area to inform decisions around the current suite of major development proposals that include Middle Arm, Lee Point and Weddell.

---

<sup>1</sup> <https://nt.gov.au/darwinharbour/integrated-reporting>

<sup>2</sup> [https://nt.gov.au/data/assets/pdf\\_file/0003/1059330/darwin-harbour-2021-integrated-report-card.pdf](https://nt.gov.au/data/assets/pdf_file/0003/1059330/darwin-harbour-2021-integrated-report-card.pdf)

The Greater Darwin region is of unusually high importance for biodiversity conservation for an urban area. Although superficially uncleared, the vast savannas of northern Australia have seen major declines of the native small to medium-sized mammal assemblage in recent decades.<sup>3</sup> Many species have not only declined in distribution and abundance but also environmental niche breadth, which means that they are now found under a much narrower set of environmental conditions.<sup>4</sup>

A small number of coastal areas such as the Darwin region, the Cobourg Peninsula and the Tiwi Islands provide environmental conditions (relating to climate, fire and other processes) that enable some native mammal species to persist where they have declined rapidly elsewhere.<sup>5</sup> Indeed, the remnant areas of native vegetation broadly within the footprint of Darwin and Palmerston support an unusually high number of native species in relation to the surrounding rural area.<sup>6</sup> This means that the loss of species like the black-footed tree-rat from the Darwin region would result in a significant impact on the distribution and genetic diversity of these species.<sup>7</sup> The persistence of wildlife in fragmented habitat in urban or rural areas is influenced by the amount and configuration of habitat at a regional level.<sup>8</sup>

This underscores the importance of assessing aggregate impacts of land use change and planning strategically for environmental and development goals at a regional level, rather than on a case-by-case basis.

**(e) engagement and advocacy by industries and their representatives throughout the Middle Arm proposal, including with First Nations groups and communities adherence to the principles of free, prior and informed consent; and**

CDU Researchers have participated in several projects in the NT that focus on economic and workforce development opportunities with First Nations communities. As CDU is not involved in any such work for the Middle Arm Precinct, we will not comment further on matters of community engagement.

---

<sup>3</sup> Woinarski, John C Z, et al, 'The disappearing mammal fauna of northern Australia: context, cause, and response', *Conservation Letters: A journal of the Society for Conservation Biology*, accessed at <https://conbio.onlinelibrary.wiley.com/doi/10.1111/j.1755-263X.2011.00164.x>; and Cremona, Teigan, et al, 'On the Brink of Extinction: The Small Mammal Decline in Northern Australia, Imperiled: The Encyclopedia of Conservation', access at <https://www.sciencedirect.com/science/article/abs/pii/B9780128211397001434?via%3Dihub>

<sup>4</sup> Von Takach, Brenton et al, 'Patterns of niche contraction identify vital refuge areas for declining mammals', *Diversity and Distributions: A Journal of Conservation Biogeography*, accessed at <https://onlinelibrary.wiley.com/doi/full/10.1111/ddi.13145>

<sup>5</sup> See *ibid* and Stobo-Wilson, A.M. et al, 'Bottom-up and top-down processes influence contemporary patterns of mammal species richness in Australia's monsoonal tropics', *Biological Conservation*, accessed at <https://www.sciencedirect.com/science/article/pii/S0006320720306960#f0005>

<sup>6</sup> Smith, E. 2021, Mapping conservation value of habitat for native mammals in the Greater Darwin region. Honours Thesis, Charles Darwin University.

<sup>7</sup> Von Takach, Brenton et al, 'Population genomics and conservation management of the threatened black-footed tree-rat (*Mesembriomys gouldii*) in northern Australia', *Heredity*, accessed at <https://www.nature.com/articles/s41437-023-00601-0>

<sup>8</sup> Puttker, Thomas et al, 'Indirect effects of habitat loss via habitat fragmentation: A cross-taxa analysis of forest-dependent species', *Biological Conservation*, accessed at <https://www.sciencedirect.com/science/article/pii/S0006320719307402>

T: 08 8946 6553

E: [vc@cdu.edu.au](mailto:vc@cdu.edu.au)

W: [cdu.edu.au](http://cdu.edu.au)

### Further information

In making this submission, CDU acknowledges there is a complex balance between the interests of economic development, environmental sustainability and genuine community engagement, especially with First Nations people. CDU promotes academic integrity and the freedom of academic inquiry and expression. Academia across the university may take different views and lend their expertise as relevant.

If there is any further information that CDU can provide to assist the Inquiry, please feel free to contact my office as a first point of contact.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Scott Bowman', with a stylized flourish at the end.

**Professor Scott Bowman AO**  
Vice-Chancellor and President