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Department of Energy and Mining
Hydrogen & Renewable Energy Team
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Monday 15th April 2024

Re: Submission – Draft Hydrogen and Renewable Energy Regulations

To whom it may concern,

The Nature Conservation Society of South Australia (NCSSA) appreciates the opportunity to provide feedback on the Department for Energy and Mining's consultation process on the draft *Regulations* subordinate to the *Hydrogen and Renewable Energy Act 2023*.

Since 1962, the NCSSA has been a strong advocate for the protection of nature, with particular emphasis on nationally and state-listed threatened plants, animals and ecological communities, and the management of protected areas.

NCSSA advocated strongly for the consideration of biodiversity conservation during the development of the *Hydrogen and Renewable Energy Act 2023* (hereafter the *HRE Act*) (please see NCSSA's submissions dated 16 February and 29th June 2023), and continues this engagement now in relation to the draft *Regulations*.

NCSSA also has a long history of engaging with issues related to the management of South Australia's Pastoral Zone, where many renewable energy projects are likely to be sited. This has included, for example:

- extensive campaigning before the 2022 election against proposed changes to the management of the Pastoral Zone by the then Liberal Government
- recent engagement with the current Labor Government's amendments to the *Pastoral Land Management and Conservation Act 1989*, affirming the legitimacy of carbon farming and conservation land-uses on pastoral leases.

NCSSA's position

- 1) NCSSA supports the rapid roll-out of renewable energy projects as an essential part of decarbonising the economy – provided that projects are constructed in appropriate places.
- 2) To be of benefit to the environment, it is essential that the rapid deployment of renewables does not inadvertently destroy the same biodiversity that is threatened by fossil-fuel induced climate-change, and does not contribute to prolonging the use of fossil-fuels.
- 3) NCSSA supports the principle of 'release areas' for project proposals, but considers that more needs to be done – especially for onshore projects – to ensure that release areas:
 - are appropriately sited through a transparent evaluation process, taking into account likely impacts on biodiversity

- do not result in the industrialisation of currently protected areas, or areas to be added to the protected area estate, *and*
 - include upper limits on the amount of land that can be released within any one region, to avoid cumulative impacts over time.
- 4) There is a particular need to limit the impacts on upland areas due to their importance as climate refugia in a warming world.
 - 5) The draft *Regulations* need to be amended to ensure that the Minister(s) responsible for administering the *National Parks and Wildlife Act 1972*, the *Native Vegetation Act 1991*, and the draft *Biodiversity Act* (currently in preparation) are adequately consulted on regarding proposed release locations, and that their assent is required before an area is released for development.

The submission appended to this letter comments on various aspects of the draft Regulations. NCSSA provides some general feedback about how the draft Regulations might operate and how they could be improved from an ecological perspective, as well as feedback on specific parts of the Regulations.

If you would like to clarify or discuss any of the issues in this submission please contact me on 0400 277 423, or via email at julia.peacock@ncssa.asn.au.

Yours sincerely,

A handwritten signature in blue ink that reads "Julia Peacock". The signature is written in a cursive style and is placed on a light yellow rectangular background.

Julia Peacock
Nature Advocate, Nature Conservation Society of South Australia

General feedback on the draft Hydrogen & Renewable Energy Regulations

Unequal treatment of marine & onshore projects

The *Hydrogen and Renewable Energy Act 2023* (hereafter the *H&RE Act*) was designed to govern both marine and onshore energy projects. It is NCSSA's opinion that the draft *Regulations* do not treat both realms equally, and should be amended so that they do.

At present, the draft *Regulations* appear almost entirely focused on land-based projects: surprisingly, the document does not even contain the word 'marine'.

The Gawler Ranges & the need for enhanced protection of upland areas as climate refugia

Hills and mountain ranges play a particularly important role as refuges for plants and wildlife in times of climate change: they provide cooler, wetter microclimates that native species can retreat to. This helps species to survive harsh climatic periods in otherwise hot, dry landscapes.¹ Upland areas have also historically been less impacted by pastoralism than low-lying areas, making them of particularly high conservation value.

High-relief topography is scarce throughout most of Australia, including in South Australia, because of the continent's great geological age: this has resulted in major erosion, leaving a relatively flat country with few areas of refuge through the dry inland areas.

Maintaining high-topographic relief areas in good ecological condition, as refuges for native species that will face harsher conditions in coming centuries due to climate change, is important for biodiversity conservation on a local and continental scale. Hill habitats should not be readily sacrificed for development projects, such as wind farms, unless absolutely necessary.

The Flinders Ranges already enjoys a high level of protection and public attention, e.g. it has an established National Park, the Arkaroola Wilderness Protection Area, and has a World Heritage nomination in progress. The Arkaroola Protection Area is also specifically ruled out by name from being released for renewable energy projects in the *H&RE Act*.

By contrast, the nearby but less famous Gawler Ranges, which is one of the State Government's preferred 'release areas' for renewable energy projects, has a lower public profile and relatively little formal protection, apart from the Gawler Ranges National Park. Therefore, on balance this is a region that will be particularly vulnerable to ecological destruction during a rapid roll-out of renewables.

Some development of the Gawler Ranges may be appropriate, but its over-development should be avoided. A range of threatened species are found in, or could be restored to, this region. Both they and their habitats require adequate protection. For example, Yellow-footed Rock-wallabies are found in and near the Gawler Ranges National Park; eight Federally-listed and over 80 State-listed plant species have been recorded in the region; and most museum specimens of the Critically Endangered Night Parrot – one of the Federal Government's 110 national priority species for recovery – came from the Gawler Ranges.

NCSSA notes that there has been significant investment in conservation programs on public and private land in the Gawler Ranges, via the State Government's *Bounceback* program, over the last 30 years. Care should be taken not to reverse this work via unrestrained industrialisation of the landscape. In line with the *Bounceback* program, care should also be taken not to sever habitat corridors – or potential future habitat corridors – between the Gawler Ranges and the Flinders Ranges. Retaining free natural movement of flora

¹ Byrne et al. (2017). Refining expectations for environmental characteristics of refugia: two ranges of differing elevation and topographical complexity are mesic refugia in an arid landscape. *Journal of Biogeography*, vol.44(11), pp.2539–2550.
<https://onlinelibrary.wiley.com/doi/epdf/10.1111/jbi.13057>

and fauna between different regions in the long term is essential for biodiversity conservation, and aligns with Australia's Strategy for Nature, Objective 7E (*Reduce threats and risks to nature and build resilience: Retention, protection and/or restoration of landscape-scale, native vegetation corridors*).²

The Biodiversity Council has recently called for renewable energy projects to be primarily sited on already degraded land, so that clearance of high-quality of native habitat need not occur.³ Degraded pastoral land should therefore be prioritised for projects in the Gawler Ranges.

Definition of Crown Land

According to DEM's *Information Sheet 1 (Release Areas)*, which interprets how the *Act* and *Regulations* would work together, a 'release area' is defined as:

*"an area of pastoral land, **certain Crown land** or state waters determined by the Minister responsible for the HRE Act (Minister) as land where large-scale wind and solar resources can be sustainably developed."* (p.2)

It is currently unclear which 'certain' types of Crown land could be designated as release areas, and this ambiguity needs to be removed.

Under the *H&RE Act (Section 4 – Interpretation – designated land (b))*, 'designated land' for renewable energy projects can include some types of Crown land, including pastoral land, or

*"Crown land, or an area of Crown land, **of a kind prescribed by the regulations for the purposes of this definition.**"*

However, the draft *Regulations* do not go on to make any reference to Crown land, or make such a definition. There is therefore no definitive statement of what kinds of Crown land might be prescribed, and therefore where projects might ultimately be situated. ***This should be rectified so that there is no ambiguity for planners, landholders, or Ministers*** about what land might be included or excluded.

There is a lot at stake in this definition, or lack thereof, given the vast area of the State that is Crown land (brown areas in the map below). Some of the allocated Crown land areas – such as reserves and Wilderness Protections Areas – are already specifically excluded from being 'designated land' under Section 4 of the *H&RE Act* – but the remaining areas are potentially open to interpretation and therefore development. Clarity would benefit all parties.

² Commonwealth of Australia (2019). Australia's Strategy for Nature 2019–2030. <https://www.australiasnaturehub.gov.au/national-strategy>

³ <https://biodiversitycouncil.org.au/news/experts-propose-green-light-zones-where-renewables-can-be-fast-tracked>

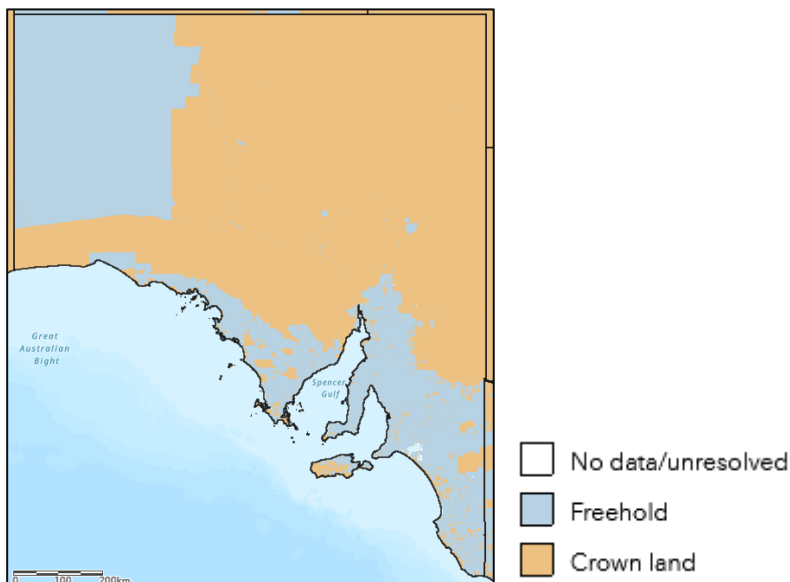


Figure 1: Freehold & Crown land in South Australia (from the *Land tenure of Australia map*, Australian Collaborative Land Use and Management Program, accessed 08-04-2024)
<https://abares.maps.arcgis.com/apps/webappviewer/index.html?id=cea8baca3ca442e3b805e6a3646e83fa>

Statutory review processes

The *H&RE Act* is subject to review every five years (Section 116).

The draft *Regulations* (Part 6 – *Environmental impact*; 29 (1)) further specify that the Minister:

“should aim to review the environmental impact assessment criteria at least once every 5 years.”

Given that a very rapid roll-out of projects is likely once the *Regulations* are formally adopted, and the ecological impacts could be considerable in scope, NCSSA considers that a 5-year period is too long a timeframe to assess any adverse ecological impacts.

The *H&RE Act* was introduced specifically to facilitate large-scale projects, including in the Pastoral Zone (see H&RE issues paper 2023). This means that projects subject to the *H&RE Act* are by definition likely to be those with a large geographical footprint, with a potentially large environmental impact. Timely and thorough review of how the *Act* and *Regulations* perform in practice are therefore of great significance.

Therefore the wording of ‘*should aim to review*’ and ‘*at least once every 5 years*’ should also be made more definite and more prescriptive. A suggested re-wording could be:

“Pursuant to section 60(2) of the Act, the Minister will review the environmental impact assessment criteria 3 years after the first adoption of the Regulations, then at least once every 5 years.”

The scope of consultation for a review of the environmental impact assessment criteria under *Regulation* 29(3) must also be extended to encompass more prescribed Acts that are central to biodiversity conservation in SA, specifically:

- The *Native Vegetation Act 1991*
- The *National Parks and Wildlife Act 1972*, and
- The forthcoming *Biodiversity Act* (currently being drafted).

The *H&RE Act* (S.60(3)) also specifies that reviews of the environmental impact assessment criteria should be undertaken in consultation with:

“persons or agencies prescribed by the regulations in a manner prescribed by the regulations”.

The draft *Regulations* specify who should be consulted – that is, consultation should be with the Minister(s) responsible for the listed prescribed Acts. However, the draft *Regulations* do not specify the **manner** in which consultation should proceed. Requirements for the consultation process should be added to the draft *Regulations*. The processes should include, as a minimum, consultation not just with the Minister(s) of the Prescribed Acts, but also with the Native Vegetation Council and the Conservation Council of SA, as specified in other relevant environmental legislation.

Selection of ‘release areas’ & ministerial consultation under prescribed Acts

Release areas & who decides on them

NCSSA supports the principle of ‘release areas’, as per comments in a previous submission during the drafting of the *H&RE Act*. However, more transparency is needed about how release areas are selected from an ecological perspective, and there needs to be guaranteed consultation with the Minister(s) responsible for:

- The *Native Vegetation Act 1991*
- The *National Parks and Wildlife Act 1972*, and
- The forthcoming *Biodiversity Act* (currently being drafted).

The Native Vegetation Council under the *Native Vegetation Act 1991* is named as a **prescribed body** in the draft *Regulations*, and both the *Native Vegetation Act 1991* and the *National Parks and Wildlife Act 1972* are listed in the *Regulations* under **designated Acts**. However, neither Act is adequately referenced throughout the rest of the *Regulations*. The ***Native Vegetation Act 1991 and the National Parks and Wildlife Act 1972 should have the status of prescribed Acts under Part 6 – Environmental impact, 29(3)***, guaranteeing Ministerial consultation.

Selecting release areas based on ecological criteria

It appears that there has already been extensive weighing of the most suitable places to be included as the initial release locations for renewables projects, including extensive engagement with landholders in the case of the Gawler Ranges. This consultative approach is socially responsible, and is very promising for achieving the consensus needed to roll out renewable energy projects at scale.

However, NCSSA is deeply concerned that environmental aspects of the decision-making process leading to declaration of release areas are not transparent – they should be. How will suitable release areas be determined based on ecological criteria and conservation needs, and what limits will be set for land-use within individual regions?

The main target of the legislation is the pastoral zone, which covers around 40% of South Australia, but ‘pastoral’ is not an ecological category, it is a functional one: the ‘pastoral zone’ is predominantly used for grazing because it is too arid for cropping. Within this climatic zone lies a range of different biogeographical zones with distinct floras, faunas, soils, hydrology and topography (see map of biogeographical regions below).



Figure 2: Biogeographical regions of South Australia. From the *Interim Biogeographical Regions of Australia*, <https://www.dcceew.gov.au/environment/land/nrs/science/ibra>

These biogeographical zones, which are part of the *Interim Biogeographical Regionalisation of Australia* (IBRA) schema, define regions to ensure each is adequately represented in the national reserve system. NCSSA calls for a review of the representativeness of protected native habitats within these biogeographical regions before rolling out renewable energy projects in pastoral areas at scale, to prevent unintended harm to biodiversity. For onshore projects, the IBRA regions (and sub-regions) should be considered when planning where to site release areas, and upper limits should be set on how much of each region can be subject to industrialisation.

‘Associated infrastructure activity’ facilitating direct air CO₂ capture

The draft *Regulations* (Part 1 – Preliminary – 3 – Interpretation (2)) define an ‘associated infrastructure activity’, as referred to in Section 4(1) of the *H&RE Act*, as:

“a direct air capture facility used for the purposes of capturing carbon dioxide associated with generating hydrogen...”.

Carbon Capture and Storage (CCS) has been heavily promoted as a potential solution to climate change, but NCSSA points out that such a process is experimental and conceptual,⁴ and cannot currently be relied upon to mitigate climate change. Facilitating experimental technology that has the potential to help change the trajectory of human-induced climate change from fossil fuel emissions is commendable, but this technology is currently unsuitable for being deployed at scale because it is unproven.

It is also essential that in applying the *H&RE Act* and *Regulations*, the environmental assessment process should consider the intended fate of the carbon dioxide gas extracted during the hydrogen generation process. This is inseparable from the process of weighing the overall environmental impacts/benefits of a hydrogen generation/CO₂ capture project, noting that:

- permanent sequestration of carbon compounds in underground reservoirs such as disused gas fields is not yet proven to work
- injecting carbon dioxide gas into underground reservoirs is a technique commonly used by fossil-fuel companies to displace and harvest residual fossil oil and gas from depleted fields, which can add decades to the life of fields that would otherwise have closed.⁵ There is therefore a risk that

⁴ Slavin et al. (2024). Techno-economic analysis of direct air carbon capture and hydrogen production integrated with a small modular reactor. *Applied Energy*, vol.356, p.122407. <https://www.sciencedirect.com/science/article/pii/S0306261923017713>

⁵ Oreskes, N. (2024). The False Promise of Carbon Capture as a Climate Solution. *Scientific American*, March 1st. <https://www.scientificamerican.com/article/the-false-promise-of-carbon-capture-as-a-climate-solution/>

promoting such projects without regard for the ultimate use of the CO₂ could facilitate rather than mitigate climate change. This would be contrary to Object (k)(iii) of the *H&RE Act*, which is to support the achievement of '*economic development of a net zero carbon emission industry*'.

A pathway of:

Clearing precious native habitats → to erect solar panels or wind farms → to generate hydrogen
→ to capture CO₂ → to harvest fossil fuels → to prolong the fossil fuel era

would be counterproductive for biodiversity and climate. Prolonging the life of fossil fuel extraction projects would worsen biodiversity loss and would be counter to the fundamental aims of a rapid shift to renewables. It would also risk reducing the social license for rolling out large-scale hydrogen generation projects in South Australia and elsewhere. Therefore, ***NCSSA calls on the State Government to explicitly state in the Regulations that any CO₂ extracted in this manner may not be used for further fossil-fuel extraction.***