



Australian Native Plants Society (Australia) Inc.

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POSITION STATEMENT

Renewable Energy and Native Vegetation

1. Position

The Australian Native Plants Society (Australia) (ANPSA) is opposed to the clearing of native vegetation to construct and operate renewable energy facilities, such as wind and solar farms, dams and bioenergy plants, and their associated infrastructure and developments, including power transmission lines and production of alternative fuels. Instead, ANPSA proposes alternative locations for such renewable energy facilities.

2. Background

Renewable energy is important

ANPSA recognises that Australia (and the rest of the world) is experiencing increased average temperatures due to elevated and increasing atmospheric concentrations of carbon dioxide and other greenhouse gases, primarily from carbon dioxide emissions from the burning of fossil fuels including coal, oil and gas.

ANPSA supports efforts to curb the further emission of carbon dioxide from fossil fuels through the construction and operation of renewable energy generating facilities, such as wind and solar farms, wave and tidal power facilities, geothermal energy facilities, hydropower and bioenergy plants (including oil mallee and canola oil facilities).

Australia has abundant solar, wind, wave, tidal and biofuel resources, and is well placed to capture this renewable energy to supply the entire country. In addition, Australia can export energy we generate to international customers, increasing our prosperity.

Renewable energy facilities require large areas of land close to end users

Because of the much lower intensity of renewable energy resources compared to fossil fuels, much larger areas are required to acquire the energy from wind, solar, geothermal, wave, tide or biofuel sources than from fossil fuel sources. In addition, extra industrial facilities are usually required to either store the energy generated by such facilities, or to convert the electrical energy so generated into other energy sources such as hydrogen or ammonia, and to transport that energy to the point of use.

The much lower energy density of renewable energy resources requires much larger areas for the infrastructure to both capture and convert renewable energy into more readily usable forms. The dispersed nature of renewable energy, and the need to be able to access renewable energy of different forms and from multiple different places to create a continuous baseload of power, means renewable energy facilities are widely dispersed. This creates the need to connect renewable energy facilities to end users with electrical transmission lines or gas or liquid pipelines (for example for hydrogen or ammonia).

One approach to reduce the needs for additional transmission facilities is to site the renewable energy power facility, whenever feasible, as close as possible to the intended point of use. This reduces the cost of the project and is also more sustainable. It also reduces transmission losses due to transferring energy from one place to another. There is also significant energy loss between production and industrial use of the energy,



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particularly if electricity is converted to hydrogen and even more so for ammonia. The efficiency of energy production and transfer therefore needs to be considered and minimised when proposing, designing and examining the feasibility of renewable energy projects.

Renewable energy facilities require clearing of vegetation

Most renewable energy facilities require large areas of cleared land, or in the case of wind farms, large numbers of small cleared areas spread over large areas connected by constructed roads. In other cases, organic matter, such as green waste, straw, wood chips or forests, requires the harvesting of plants or trees. Often, areas chosen for renewable energy facilities cannot be used for anything else, and any vegetation, whether native or planted, needs to be removed. There are exceptions. For example, some agricultural activities can be undertaken in areas surrounding wind turbine towers. It may also be possible to run stock, such as sheep or goats, in solar farms to graze grass between or under the solar panels.

Nevertheless, in most cases, areas used to construct and operate renewable energy generating facilities need to be free of vegetation higher than 0.5–1m, or require harvesting of all vegetation (e.g. in plantations or grain farms). Consequently, if totally cleared areas are not already available in an area proposed for a renewable energy generating facility, approval may be needed to clear vegetation to establish the facility.

3. Impacts of constructing and operating renewable energy facilities on native vegetation

Australia is home to an incredible and unique variety of native flora and fauna and vegetation communities. Many of these species of native flora and fauna as well as many vegetation communities are rare or endangered as a consequence of development over the last 200 years, and are in serious need of protection and conservation. This is equally true in well vegetated areas of Australia such as forests and woodlands, as it is in arid areas such as rangelands and deserts.

Inland areas of Australia, and other arid pastoral regions, are often considered to be essentially free of tree and shrub vegetation. However, these areas are not necessarily appropriate for renewable energy facilities. Pastoral areas are covered with small trees, shrubs and understorey, while the savannah of northern Australia is covered with large trees. Though native vegetation in the 'deserts' of Australia may be sparse, they are substantial areas of tree and shrub vegetation supporting diverse and important ecological communities.

Clearing native vegetation for renewable energy facilities, whether in forests, woodlands, agricultural areas, rangelands or in 'deserts', would have a number of undesirable and unacceptable impacts:

- releasing greenhouse gases (that the construction of renewable energy facilities is meant to avoid and reduce) through the decomposition or burning of cleared vegetation
- destroying and removing native plants
- disturbing and losing native animals including mammals, birds and reptiles through loss of habitat
- fragmenting native vegetation which makes it more susceptible to degradation through the introduction of weeds and other alien species
- sending rare or endangered plants, animals and vegetation communities to extinction through physical removal, that the construction of renewable energy facilities is meant to address by reducing or avoiding temperature increases to which these plants, animals and communities cannot adapt
- damaging areas of stunning views and landscapes and unique wildflowers that tourists come from all over the world to experience
- damaging soils



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- exposing and reducing the resilience of Australia to further climatic and meteorological impacts, including desertification, salinity and flooding
- introducing weeds and disease, including Phytophthora dieback and Myrtle Rust, through contaminated equipment and clothing
- destroying and interfering with First Nations sacred and culturally important sites.

Clearing areas of native vegetation for the construction and siting of renewable energy facilities could have as much, or even more, impact on native vegetation and biological diversity as the climate change the construction of such facilities is meant to avoid.

4. Position on the siting, construction and operation of renewable energy facilities

ANPSA holds the position that native vegetation should not be cleared to construct and operate renewable energy facilities.

Locate renewable energy facilities only in suitable areas

The most appropriate locations to construct renewable energy facilities, in order of priority, should be:

- buildings, both public and private, including public and private car parks, shopping centres and industrial facilities
- abandoned mine, quarry and industrial sites
- mining waste dumps and landfills
- non-native forests and plantations
- cleared land including farm land and unused cleared land
- highly degraded pastoral leases
- offshore.

Expand roof-top solar energy facilities

To encourage the further uptake of roof-top solar in Australia, ANPSA recommends more emphasis needs to be placed on constructing solar panels in the following situations:

- government and private company office buildings
- schools and hospitals
- warehouses and factories
- sporting facilities
- retail facilities
- farm houses and buildings.

Policies and incentives should be strengthened to encourage the installation of solar panels and wind generation equipment at these locations. While it is recognised that these sites are individually at a smaller scale than industrial scale facilities, they can supply significant quantities of energy, as demonstrated by the collective capacity of the solar units adopted by many residential householders.

Locate facilities close to demand

Wherever possible, renewable energy facilities should be sited as close as possible to areas of substantial demand, such as population centres, mine sites or work camps. It is unfortunate that some of the best solar and wind resources in Australia are in the rangelands and the deserts far from areas of demand. If there are no alternatives to these locations, every effort should be made to reduce power losses in transmission, such as by transmitting the electricity by Direct Current (DC) rather than Alternating Current (AC).



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Construct facilities on already cleared land

Renewable energy facilities should be restricted to already cleared areas. This should include:

- cleared farmland
- degraded farmland or pastoral areas
- abandoned or exhausted mine and quarry sites
- mining waste dumps.

There are increasing numbers of solar and wind farms being established on already cleared farmland. In some cases, this is in conjunction with specific, albeit modified, farming practices. ANPSA recommends that solar and wind farms be established on already cleared, marginal farmland, but that this be entirely at the land owner's discretion. ANPSA does not prioritise energy production over food production, as both are essential, but is very supportive of farmers establishing renewable energy facilities on existing cleared land. However, ANPSA is opposed to the clearing of more native vegetation on farmland solely for the purpose of establishing renewable energy facilities.

In the pastoral zones of Australia, there are a number of pastoral leases that are, at least partially, in degraded or very degraded condition. Some of these leases are being de-stocked and turned into nature reserves. In some other cases, private or other interests are acquiring these leases to revegetate, restore or rehabilitate them and return them to better condition. These are expensive, time-consuming activities with no guarantee of success.

An alternative option for degraded or very degraded pastoral leases is to accept that these leases are degraded, with very limited flora and fauna, and to use them for renewable energy facilities. This makes considerable economic, environmental and ecological sense over clearing pastoral leases in very good to excellent environmental and vegetation condition, and then potentially (as part of an environmental offset as a condition of approval to clear that particular pastoral lease) having to revegetate or restore another or the balance of the same pastoral lease in degraded or very degraded condition to good or better condition.

Using old mine sites and waste dumps to site solar or wind farms has the following benefits:

- it has minimal environmental impact as the areas are already free (at least initially) of vegetation
- it avoids the cost of clearing other land
- it avoids the need to rehabilitate and restore these areas to their former environmental condition, saving the substantial cost of planting, weeding and management
- mine waste dumps may generate improved wind or solar conditions due to their height relative to the surrounding landscape.

Avoid using native timber for bioenergy

While ANPSA sees substantial scope in generating bioenergy from green waste, stubble, canola crops, tree and oil-mallee plantations on cleared land, ANPSA totally opposes the harvesting of native timber to produce woodchips or other feedstock to generate electricity. Although timber is a renewable and potentially sustainable resource, there is no reason to clear native forests for firing boilers when there are enormous existing and potential opportunities to plant and harvest either native or non-native timber plantations established on currently or previously cleared land.



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Undertake carbon accounting

As part of project evaluation, carbon accounting needs to take into account the loss of CO₂ sequestration that occurs if any vegetation is cleared, as well as the CO₂ emissions from the decomposition of that cleared vegetation. From an economic perspective, the financial accounting needs to include the financial losses that arise from not being able to use the carbon credits attributed to any area proposed to be cleared.

About ANPSA

The Australian Native Plants Society (Australia) (ANPSA) consists of eight member societies throughout Australia, representing more than 5000 individuals. Our goals are to grow, conserve and appreciate the Australian flora. Our aims are to:

- Protect, conserve and enhance Australian indigenous plants in their natural habitats
- Promote and support the study and cultivation of Australian indigenous plants for their intrinsic value and their ecosystem services
- Communicate knowledge about Australian indigenous plants
- Encourage the cultivation of endangered Australian indigenous plants in botanical gardens and other reserves
- Encourage the growing and use of Australian indigenous plants in home gardens, public places and for revegetation projects and rural plantings.

The member societies of ANPSA are:

- Australian Native Plants Society Canberra Region
- Australian Plants Society NSW
- Australian Plants Society (South Australian Region)
- Australian Plants Society Tasmania
- Australian Plants Society Victoria
- Native Plants Queensland
- Top End Native Plant Society
- Wildflower Society of Western Australia.

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