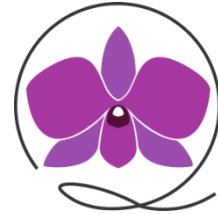


POSITION STATEMENT
Renewable Energy and Native Vegetation
Native Plants Queensland
January 2023



Position

Native Plants Queensland (NPQ) is opposed to the clearing of native vegetation for the purposes of constructing and operating renewable energy facilities, such as wind and solar farms, dams and bioenergy plants, and their attendant infrastructure and infrastructure developments, including power transmission lines and developments for production of fuels not subject to carbon emissions.

Strategies

Native Plants Queensland recommends that the siting and construction of renewable energy facilities should be as follows (in order of priority):

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

Background

Native Plants Queensland recognises that Australia (and the rest of the world) is experiencing increased average temperatures because of elevated and increasing atmospheric concentrations of carbon dioxide and other greenhouse gases, primarily due to the emission of carbon dioxide through the burning of fossil fuels including coal, oil and gas. Native Plants Queensland supports efforts to curb the further emission of carbon dioxide from fossil fuels through the construction and operation of renewable energy generating facilities, such 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 so generated to international customers, thereby increasing Australia's prosperity.

Because of the much lower intensity of renewable energy resources compared to fossil fuel, much larger areas are required to acquire the energy from wind, solar, geothermal, wave, tide or biofuel sources than is the case with 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. Further, 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, leads to renewable energy facilities being widely dispersed. This creates the need to connect renewable energy facilities to places that require the energy with electrical transmission lines or gas or liquid pipelines (for example for hydrogen or ammonia).

One approach to reduce the needs for these additional transmission facilities is to site the renewable energy power facility, whenever feasible, as close as possible to the intended point of use. This not only reduces the cost of the project but also is more sustainable. It also reduces transmission losses that arise from transferring energy from one place to another. There is also significant energy loss between production and industrial use of the energy, with some estimates indicating that such losses could exceed 50% in certain

circumstances. The efficiency of energy production and transfer need to be considered and minimised when proposing, designing and examining the feasibility of renewable energy projects.

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, whether it be waste 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 will result in the harvesting of all vegetation (e.g. in plantations or grain farms). Consequently, if totally cleared areas are not already available in an area where a renewable energy generating facility is proposed to be constructed, consideration would turn to removing and clearing that vegetation.

Impacts of constructing and operating renewable energy facilities on native vegetation

The broader community would consider most parts of the so-called 'deserts' of Australia, as well as other arid pastoral regions, to be essentially free of tree and shrub vegetation, and therefore eminently appropriate for the construction of renewable energy facilities. The broader community lacks the awareness that pastoral areas are covered with small trees, shrubs and understory, while the savannah of northern Australia is covered with large trees. Though sparse, even the 'deserts' of Australia contain substantial areas of tree and shrub vegetation supporting surprisingly diverse and important ecological communities.

Australia is home to an incredible and unique variety of native flora, fauna and vegetation. Many of these native flora, fauna and vegetation are rare or endangered as a consequence of development over the last 200 years, and are in serious need of protection and conservation.

Clearing native vegetation for renewable energy facilities, whether in agricultural or pastoral areas, or in 'deserts', would have a number of undesirable and unacceptable impacts, including the following:

- 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
- fragmentation of 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 ecosystems 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 vegetation cannot adapt
- damaging areas of stunning views and landscapes and incredible wildflowers that tourists come from all over the world to experience
- damaging soils
- exposing and reducing the resilience of Australia to further climatic and meteorological impacts, including desertification, salinity and flooding
- introducing weeds and disease, such as Phytophthora dieback, through unclean equipment
- destroying and interfering with sacred and culturally important sites.

In this context, 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.

Considerations associated with the construction and operation of renewable energy facilities

Native Plants Queensland holds the view that Native vegetation should not be cleared for the purposes of constructing and operating renewable energy facilities. The most appropriate locations to construct renewable energy facilities, in order of priority, should therefore be as follows:

- buildings, both public and private, including public and private car parks
- 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.

The uptake of roof-top solar in Australia has been very strong. However, there are still many opportunities for this to be further expanded. To encourage this further uptake, the Wildflower Society of Western Australia recommends that more emphasis needs to be placed on constructing solar panels on/in the following situations:

- government and private company office buildings
- schools and hospitals
- warehouses and factories
- sporting facilities
- retail facilities
- farmhouses and sheds.

To facilitate this further uptake, Native Plants Queensland recommends that more attractive financial returns need to be offered to the owners of these facilities for energy exported to the electricity grid, or the power companies should be encouraged to install solar panels and wind generation equipment at these locations. Whilst it is recognised that these are individually at a smaller scale than industrial scale facilities, they can supply significant quantities of energy, as demonstrated by collective capacity of the solar units adopted by many residential householders.

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. Native Plants Queensland recommends that increasing numbers of solar and wind farms be established on already cleared, marginal farmland, but that this be entirely at the land owner's discretion. Native Plants Queensland does not wish to prioritise energy production over food production, as both are essential, but is very supportive of farmers establishing renewable energy facilities on existing cleared land if they wish to do so. However, Native Plants Queensland is opposed to the clearing of more native vegetation on farmland solely for the purpose of establishing renewable energy facilities.

Some of the best solar and wind resources in Australia are in the rangelands and the deserts. It is unfortunate that many suitable sites in these regions are far from areas of 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. Such renewable energy facilities should be restricted as much as possible to already cleared areas. This could include the following:

- abandoned or mined-out mine and quarry sites
- mining waste dumps.

Utilising these areas has the following benefits:

- they are free (at least initially) of vegetation so can be utilised with minimal environmental impact and avoids the cost of clearing other land
- using them for generation of renewable energy avoids the need to rehabilitate/restore them to their former environmental condition, saving the substantial cost of planting, weeding and management
- mine waste dumps may be higher in the landscape and generate improved wind or solar conditions.

Whilst Native Plants Queensland sees substantial scope in generating bioenergy from green waste, stubble, canola crops, tree and oil-mallee plantations on cleared land, Native Plants Queensland totally opposes the harvesting of native timber for the production of woodchips or other feedstock for the generation of 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 cleared land.

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 with a view to revegetating/restoring/rehabilitating them to return them to better condition. These are expensive, time-consuming activities with no guarantee of success.

An alternative option, with respect to degraded or very degraded pastoral leases, is to accept that these leases are degraded, with very limited flora and fauna, and to utilise them to site 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/restore another or the balance of the same pastoral lease in degraded or very degraded condition to good or better condition.

To encourage the avoidance of vegetated areas for siting renewable energy facilities, detailed consideration also needs to be given in the emissions accounting for a project to the loss of CO₂ sequestration that occurs if any vegetation was to be cleared, as well as the increased emissions arising from the decomposition of the cleared material. 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.