GOVERNMENT OF WESTERN AUSTRALIA

WAPC Western Australian Planning Commission

LEADING A CONTEMPORARY PLANNING SYSTEM

DRAFT – PUBLIC CONSULTATION

December 2025

DRAFT CODE – PUBLIC CONSULTATION

Renewable Energy Planning Code

Prepared under Part 3A of the Planning and Development Act 2005

Acknowledgement of Country

The Western Australian Planning Commission acknowledges the Aboriginal people as the traditional custodians of Western Australia. We pay our respects to the Ancestors and Elders, both past and present, and the ongoing connection between people, land, waters and community.

We acknowledge those who continue to share knowledge, their traditions and culture to support our journey for reconciliation. In particular, we recognise land and cultural heritage as places that hold great significance for Aboriginal people.

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Part one

General

Citation

This Planning Code is made under Part 3A of the *Planning and Development Act 2005* and is cited as the Renewable Energy Planning Code.

1.1 Code Intent

The intent of the Code is to provide a clear and consistent development assessment framework for **energy infrastructure** (including **renewable energy facilities**, **transmission systems** and **battery energy storage systems**) that support the generation, storage and transmission of renewable energy across Western Australia. The Code sets out:

a. objectives and development provisions for the siting, design, construction, operation and **decommissioning** of **energy infrastructure**;

b. materials required to accompany development applications for **energy infrastructure**; and

c. consistent standards and requirements to support quality decision-making across local government areas.

1.2 Code Application

The Code applies throughout Western Australia to the assessment of development applications for **energy infrastructure,** including:

- **wind farms** (Part 2);
- **transmission systems** (Part 3 – to be prepared);
- **solar farms** (Part 4 – to be prepared); and
- **battery energy storage systems** (Part 5 – to be prepared).

1.3 Code Objectives

The objectives of the Code are to:

a. guide the establishment of **energy infrastructure** to support a sustainable energy supply for Western Australia;

b. avoid or minimise land use conflicts and adverse impacts on the surrounding environment, amenity, public health and safety; and

c. promote development that responds to the characteristics of the site and its local context.

1.4 Operation of the Code

The Code is organised into different Elements, each addressing a specific planning issue or development phase.

Each Element includes one or more Element Objectives that support the Code Objectives and describe the intended planning goals or aims for that Element.

To demonstrate achievement of each Element Objective, applicants must respond to the associated development provisions, which may include:

- Performance Outcomes – general development principles or guidance; and/or
- Acceptable Outcomes – specific measurable development standards.

Some Elements only include Performance Outcomes, others include only Acceptable Outcomes, and some include both. Where both types of outcomes are provided for an Element Objective, applicants may respond to either the Performance Outcomes or the Acceptable Outcomes to demonstrate achievement of that Element Objective.

Where an Element includes only Acceptable Outcomes and does not provide a Performance Outcome pathway, compliance with the Acceptable Outcome is the sole means for satisfying the corresponding Element Objective.

Terms shown in **bold** throughout the Code are defined in **Appendix 1**.

Where reference is made in an Element Objective or development provision to:

- existing land uses and works, this is to be taken to refer to land uses and works currently being undertaken or have been carried out;
- approved land uses and works, this is to be taken to refer to land uses and works that have received a development approval or building permit.

In both cases, the reference applies to land uses and works on or prior to the date the **energy infrastructure** development application is lodged with the decision-maker.

1.5 Development Applications and Decision-Making

1.5.1 Development Applications

In addition to material required under clause 63 of Schedule 2 of the Planning and Development (Local Planning Schemes) Regulations 2015 (LPS Regulations), development applications for **energy infrastructure** must be accompanied by the material outlined in **Appendix 2**.

1.5.2 Consultation

Development applications for **energy infrastructure** must be advertised in accordance with clause 64 of Schedule 2 of the LPS Regulations.

1.5.3 Assessment and Determination

Development applications should demonstrate achievement of the Element Objectives by satisfying the corresponding Performance Outcomes or Acceptable Outcomes.

Meeting an Acceptable Outcome provides a compliant pathway for assessment and approval. Where an Acceptable Outcome is achieved, the corresponding Element Objective is deemed satisfied.

In determining whether a development application satisfies the relevant Performance Outcomes, the decision-maker will exercise judgment and undertake a merit-based assessment of the application.

The decision-maker must be satisfied the development application meets the Code and Element Objectives and the Acceptable Outcomes or Performance Outcomes associated with each Element Objective.

In approving a development application, the decision-maker should also be satisfied the development will not create significant adverse impacts. Where potential adverse impacts are identified, they should be addressed, where practicable and in order of preference, through the following mitigation hierarchy:

- avoidance – avoid the adverse impact from occurring altogether;
- minimisation – limit the degree or magnitude of the adverse impact; and
- rectification – repair, rehabilitate or restore the impacted site as soon as possible.

1.6 Local Planning Framework

Where there is a specific local or regional need, local planning policies, structure plans and local development plans, may, subject to WAPC approval:

a. supplement the Element Objectives;
b. modify and/or supplement the Performance Outcomes or Acceptable Outcomes of the Code.

Local governments, in preparing such local planning policies, structure plans and local development plans, and the WAPC in approving them, must ensure they are:

a. warranted due to a specific need relating to the locality or region;
b. consistent with the Code and Element Objectives; and
c. consistent with the LPS Regulations.

Where a local planning policy, structure plan and local development plan that was in effect prior to commencement of the Code is inconsistent with this Code, the provisions of the Code prevail to the extent of the inconsistency.

Part two

Wind farms – development standards

2.1 Micro-siting of Wind Turbines

The following provisions apply only where an applicant chooses to use micro-siting. They outline how **wind turbine envelopes** can be incorporated into a development application to provide flexibility after approval:

2.1.1 **Wind turbine envelopes** may be used in a development application for a **wind farm** to enable minor adjustments to the location of **wind turbines** and their supporting structures within the envelope after approval, providing flexibility for micro-siting.

2.1.2 Where **micro-siting** is proposed, any reference to a **wind turbine** in the Element Objectives and development provisions (Performance Outcomes and Acceptable Outcomes) of the Code is to be interpreted as applying to a turbine envelope.

2.1.3 The maximum extent of each **wind turbine envelope** is a circle with a radius of 100 metres, measured from the centre of an indicative turbine location.

2.1.4 Each **wind turbine envelope** must contain no more than one turbine, and the total number of envelopes must not exceed the number of turbines proposed for the development.

2.1.5 All supporting structures for the **wind turbine**, including the **foundation**, must be fully contained within the turbine envelope.

2.1.6 Each **wind turbine envelope** must be located:

a. to avoid all known physical or environmental constraints where the siting of a turbine would be unsuitable; and

b. so that a turbine and its supporting structures can be positioned anywhere within the envelope and comply with all relevant objectives and development provisions of the Code.

2.1.7 Access tracks to wind turbines may be subject to minor realignment where necessitated by micro-siting, provided the decision maker is satisfied this will not result in any additional adverse environmental, amenity, safety or other impacts.

2.1.8 Post-construction, the applicant must provide the decision-maker with:

a. GPS coordinates for each constructed **wind turbine**; and

b. a plan showing the location of all constructed access tracks.

2.2 WF Element 1 – Safety

Element Objective

WF-EO1.1 Wind turbines are sited to minimise risks to people, property and infrastructure arising from hazards such as blade throw, wind turbine collapse and other safety incidents.

Performance Outcome	Acceptable Outcome *Meeting this Acceptable Outcome satisfies the Element Objective.*
Not applicable – Acceptable Outcome applies.	**WF-AO1.1** Wind turbines are set back a minimum of 1.1 times blade tip height from non-host lots, reserves (including road reserves), and existing and approved habitable buildings on host lots and non-host lots.

The safety setback required under **WF-AO1.1** is to be measured from the centre of the **wind turbine** tower to the non-host lot or reserve boundary, or in the case of a **habitable building**, to the nearest external wall of the **habitable building**.

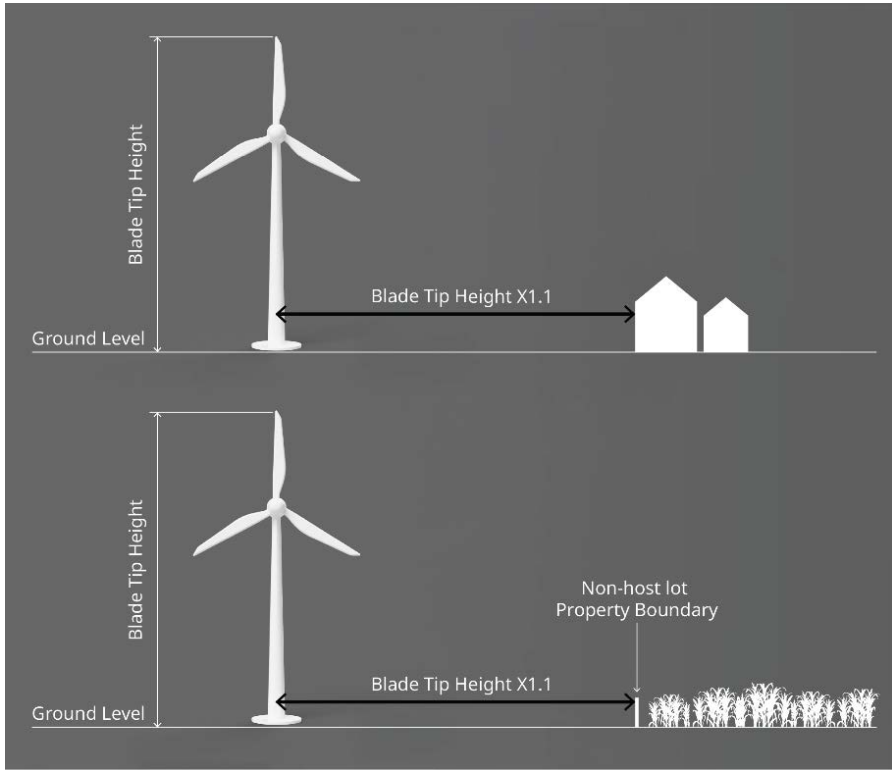

Figure 1: WF-AO1.1 Safety Setback

Element Objective

WF-EO1.2 Wind turbines are designed and constructed to ensure structural integrity and operational safety over their lifecycle.

Performance Outcome	Acceptable Outcome *Meeting this Acceptable Outcome satisfies the Element Objective.*
Not applicable – Acceptable Outcome applies.	**WF-AO1.2** Wind turbines are designed and constructed in accordance with relevant Australian and international standards.

2.3 WF Element 2 – Noise

Element Objective

WF-EO2.1 Wind farms are sited, designed and operated to avoid an **unreasonable noise impact** on:

a. any existing or approved **noise-sensitive land use**; and

b. areas identified for the future development of **noise-sensitive land uses**.

Performance Outcome	Acceptable Outcome
WF-PO2.1 Wind turbines and other **associated infrastructure** are sited, designed and operated to avoid an **unreasonable noise impact** on any existing or approved **noise-sensitive land use** located on a **host** or **non-host lot**. **WF-PO2.2 Wind turbines** and other **associated infrastructure** are sited to avoid an **unreasonable noise impact** on areas identified for future urban development [1] or rural residential development in WAPC-endorsed State and local planning frameworks, to ensure these areas can be developed without constraint from wind farm noise impacts.	*Not applicable* *– Performance Outcomes apply.*

[1] Code only' version will become footnote 1: Areas identified for future urban development include, but are not limited to, land identified in regional or local planning strategies, local planning schemes or approved structure plans, for residential, tourism, or other noise-sensitive urban uses.

2.4 WF Element 3 – Single House Development Potential on Non-Host Lots

Element Objective

WF-EO3.1 Wind farms are sited to ensure that **non-host lots** without an existing or approved **single house** retain sufficient land outside the **wind farm's noise impact area** that is suitable for accommodating a future **single house**.

Performance Outcome	Acceptable Outcome *Meeting this Acceptable Outcome satisfies the Element Objective.*
WF-PO3.1 A wind farm's noise impact area may extend onto a non-host lot where: a. The **non-host lot** retains a suitable and sufficient area of land outside the **noise impact area(s)** of the **wind farm** and any other nearby existing or approved **wind farms**, for a future **single house**, which: i. is permissible under the local planning scheme; ii. is not affected by development constraints such as **conservation areas** or flood-prone land; and iii. can be practically serviced, including with vehicle access and utility services; or b. The **non-host lot** forms part of a broader contiguous landholding used for agricultural purposes, where a **single house** already exists on another lot within the same holding, and the **non-host lot** is not intended or required to accommodate a separate **single house**.	**WF-AO3.1** The **non-host lot** is located entirely outside of the **wind farm's noise impact area.**

2.5 WF Element 4 – Landscape

Element Objectives [2]

WF-EO4.1 Wind farms are sited and designed to avoid or minimise adverse impacts on **significant landscapes** and **significant views**, particularly areas of recognised State, national or international importance.

WF-EO4.2 Wind farms are sited and designed with sensitivity to their **landscape** setting to minimise unnecessary visual disruption and prominence where practical opportunities exist, with the understanding that visual change to the landscape is an inevitable outcome of **wind farm** development.

Performance Outcome	Acceptable Outcome
WF-PO4.1 Where a **wind farm** may affect a **significant landscape** or **significant view**, it is sited and designed to avoid or minimise unnecessary visual disruption and prominence and adverse **landscape** and visual impacts. Siting and design responses may include (but are not limited to): a. siting **wind turbines** and **associated infrastructure** outside the **significant view** viewing corridor or **significant landscape** extent where feasible; b. reducing the number, height or spread of **wind turbines**; c. avoiding siting **wind turbines** and **associated infrastructure** on prominent ridgelines; d. using **landform** and tree planting to screen **wind turbines** and **associated infrastructure**. **WF-PO4.2** In all settings, **wind farms** are sited and designed to utilise practical opportunities available within the landscape setting, such as the screening effect of topography or vegetation, or new planting opportunities, to minimise unnecessary visual disruption and the prominence of **wind turbines**. **WF-PO4.3** Lighting associated with wind turbines is designed to avoid or minimise adverse impacts on views and **landscapes**, while ensuring compliance with aviation safety requirements. **WF-PO4.4 Wind turbine blades** are finished with a surface treatment of low reflectivity to minimise blade glint.	*Not applicable – Performance Outcomes apply.*

[2] Element 4 objectives and performance outcomes replace the guidelines for wind farms in section 3.3 of the WAPC's Visual Landscape Planning in Western Australia: a manual for evaluation, assessment, siting and design (2007).

2.6 WF Element 5 – Shadow Flicker

Element Objective

WF-EO5.1 Wind turbines are sited, designed and operated to minimise shadow flicker impacts on any existing or approved **visually sensitive land use** located on a **non-host lot**.

Performance Outcome	Acceptable Outcome *Meeting this Acceptable Outcome satisfies the Element Objective.*
WF-PO5.1 Wind turbines are sited and operated to ensure that shadow flicker at any **visually sensitive land use** on non-host lots does not exceed: a. **30 hours per year and 30 minutes on any single day**, based on theoretical shadow flicker modelling; or b. **10 hours per year**, based on predicted actual shadow flicker modelling.	**WF-AO5.1 Wind turbines** are set back a minimum distance of 265 times the **maximum blade chord** length from any existing or approved **visually sensitive land use** on non-host lots.

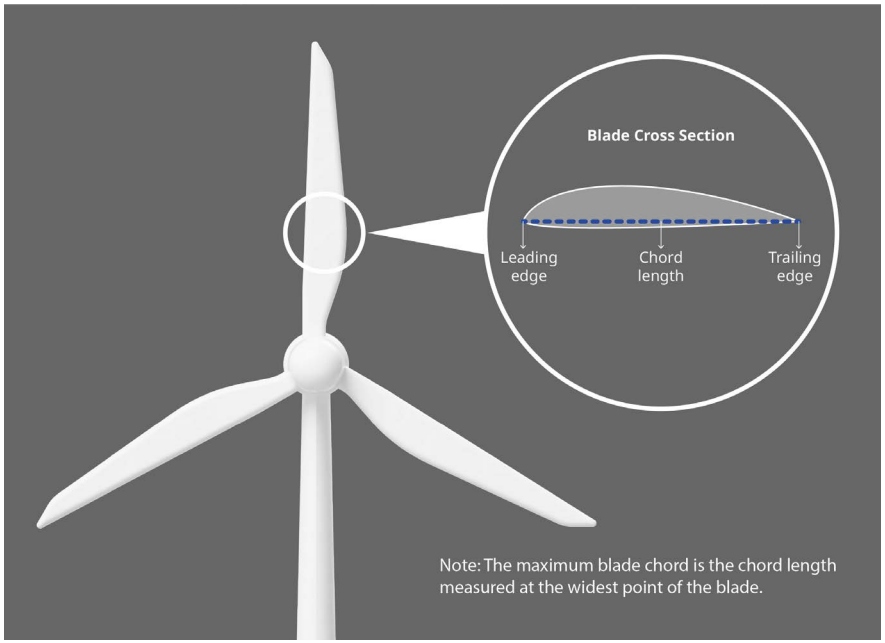

Figure 2: Maximum blade chord measurement

2.7 WF Element 6 – Natural Environment

Element Objective

Flora and Fauna

WF-EO6.1 Wind farms are sited, designed, constructed and operated to avoid or minimise adverse impacts on **flora and fauna**, in particular **threatened species**, **migratory species** and **threatened ecological communities**.

Performance Outcome	Acceptable Outcome
WF-PO6.1 Wind farms are sited outside and sufficiently set back from: **conservation areas**, **threatened ecological communities**, known habitats of **threatened species**, and migration paths of **migratory species**, including birds and bats. **WF-PO6.2 Wind farms** are sited to avoid or minimise **native vegetation** clearing where practicable by locating in areas that have already been cleared or disturbed. **WF-PO6.3 Wind turbines** are designed and operated to reduce adverse impacts on birds and bats, in particular **threatened species** and **migratory species**. This may include (but should not be limited to): a. positioning the height of the **rotor swept path** (see **Figure 3**) outside of known bird and bat flight paths; b. using design features that deter birds and bats and minimise the risk of bird and bat collision; and c. using technology to detect bird and bat activity and curtail the operation of **wind turbines** where needed. **WF-PO6.4** Land management practices are undertaken during the operation of the **wind farm** to: a. reduce the attractiveness of the site to birds and bats which are prone to collision with **wind turbines**; and b. maintain biosecurity and minimise the spread of pests, weeds and diseases.	*Not applicable* *– Performance Outcomes apply.*

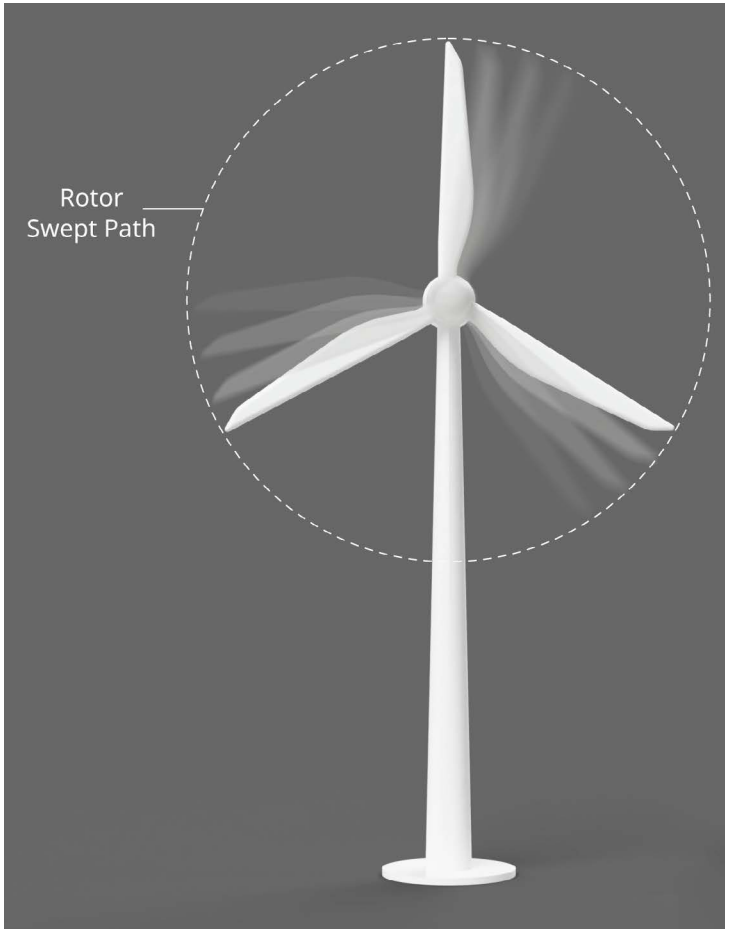

Figure 3: Rotor swept path

Element Objective

Water and Land

WF-EO6.2 Wind farms are sited, designed and constructed to avoid or minimise **land degradation** and adverse impacts on the quantity and quality of water resources and in particular **sensitive water resources**, **public drinking water source areas** and **significant wetlands**.

Performance Outcome	Acceptable Outcome
WF-PO6.1 Wind farms are sited, designed and constructed in accordance with the draft Statement of Planning Policy 2.9 Planning for Water (WAPC, 2021) and draft Planning for Water Guidelines (WAPC, 2021). This includes but is not limited to: a. siting **wind farms** outside and sufficiently set back from **waterways**, **wetlands** and **dams**; b. siting **wind turbines** outside areas with high water tables or areas likely to disrupt natural drainage flows, **water resources, public drinking water areas** and **dams**; and c. designing and constructing stormwater, groundwater and sediment management systems (including rehabilitation and stabilisation of disturbed areas) to maintain water quantity and quality. **WF-PO6.2 Wind farms** are sited and designed to avoid or minimise: a. disturbance of contaminated land or acid sulphate soils; and b. salinity mobilisation and erosion.	*Not applicable – Performance Outcomes apply.*

2.8 WF Element 7 – Natural Hazards

Element Objective

WF-EO7.1 Wind farms are sited, designed, constructed and operated to avoid or minimise risks to people, property and infrastructure arising from **natural hazards**.

Performance outcome	Acceptable Outcome
Fire **WF-PO7.1 Wind turbines** and **associated infrastructure** (excluding access tracks) are sited: a. Outside **bushfire prone areas** where possible; or b. Within **bushfire prone areas** where the pre-development radiant heat impact does not exceed Bushfire Attack Level (BAL)-29 (29kW/m^2), as shown in pre-development BAL contour mapping; or c. where (a) or (b) cannot be achieved, with asset protection zones (i.e. low fire fuel areas) established around **wind turbines** and **associated infrastructure** to reduce the post-development radiant heat impact to BAL-29 or below, while avoiding or minimising native vegetation clearing and ensuring that any additional landscaping or **revegetation** does not contribute to an unacceptable fire risk. **WF-PO7.2 Wind turbines** and **associated infrastructure** are spaced apart to: a. reduce the risk of fire spreading between components, considering radiant heat flux as a potential ignition source; and b. enable safe and effective aerial firefighting operations with a minimum separation of 300 metres between turbines. **WF-PO7.3 Wind turbines** and **associated infrastructure** incorporate features that minimise ignition risk and support emergency response, including: a. fire and lightning detection, power disconnection, and independent shutdown systems that can operate independently of local communications during an emergency; b. non-combustible or fire-resistant materials in construction; c. aviation obstacle lighting; d. safe storage of hazardous, flammable and/or combustible materials consistent with *Planning for Bushfire Guidelines* (WAPC, 2024), specifically Bushfire Protection Criteria 7: Development - Commercial and industrial A2.4 Storage of hazardous, flammable and/or combustible materials.	*Not applicable* *– Performance Outcomes apply.*

Performance outcome	Acceptable Outcome
WF-PO7.4 Wind farms include vehicular access enabling efficient, safe and reliable emergency response and evacuation, consistent with the Planning for Bushfire Guidelines (WAPC, 2024). This includes: a. at least two ingress/egress points, preferably from two different public roads, and for each part of the **development site** where the site is divided by a public road(s). b. internal access tracks that: i. have suitable gradients, vertical clearances and all-weather surfaces; ii. provide a minimum four-metre trafficable width to each **turbine** and key infrastructure components such as substations and control offices; iii. include passing bays at least every 600 metres, with a minimum size of 20 metres long and six metres wide; and iv. provide adequate turn-around areas for emergency vehicle manoeuvring. **WF-PO7.5 Wind farms** provide sufficient, accessible water supply and firefighting infrastructure. The number, size and locations of water tanks is to be determined in consultation with the Department of Fire and Emergency Services and local brigade, and include at a minimum: a. one 45,000-litre static water tank at each property entrance from a public road; b. one additional 45,000-litre static water tank within the **development site;** c. water tank fittings compliant with relevant *Planning for Bushfire Guidelines* (WAPC, 2024) standards; and d. a hardstand at each tank for emergency vehicles. **WF-PO7.6 Wind farm** operations support emergency response by: a. maintaining firebreaks, **asset protection zones**, access tracks, water supply, hardstands and fire equipment; and b. enacting emergency procedures**,** such as **turbine** shutdown, blade repositioning, power disconnection, activation of obstacle lighting to support aerial firefighting, and facilitating emergency vehicle and water access. **WF-PO7.7** Any new **habitable building** associated with the **wind farm**, located wholly or partly within a **bushfire prone area**, is sited, designed and constructed in accordance with State Planning Policy (SPP) 3.7 Bushfire (WAPC, 2024) and the Planning for Bushfire Guidelines (WAPC, 2024). **Other Hazard Management** **WF-PO7.8 Wind farms** are sited, designed, constructed and operated to avoid or minimise risks associated with: a. coastal erosion and inundation, where within a **coastal zone**; b. flooding; c. cyclones and earthquakes (see *Element 1 - Safety*, **WF-AO1.2**); and d. landslides and other land movement (karst), avoiding slopes 15 per cent or greater as per SPP 3.4 Natural Hazards and Disasters (WAPC, 2006).	*Not applicable* *– Performance Outcomes apply.*

2.9 WF Element 8 – Aviation

Element Objective

WF-EO8.1 Wind farms are sited, designed, constructed and operated to maintain the safety, efficiency and operational integrity of airports, **aerodromes**, **aircraft landing areas** and associated aviation operations and navigation, including low-flying aviation activities.

Performance Outcome	Acceptable Outcome
WF-PO8.1 Wind turbines and **associated infrastructure** are sited, designed, constructed and operated to: a. avoid hazards or unacceptable risks to aircraft safety; b. avoid or minimise adverse impacts on the safety, efficiency or operational integrity of: i. **airports**, **aerodromes** and **aircraft landing areas** and associated aviation operations and navigation; and ii. low-flying aviation operations, including aerial agricultural activities (spraying and mustering), recreational aviation, military aviation, helicopter operations and emergency air services; and c. avoid or minimise adverse impacts on the development and operation of future aviation infrastructure identified in State and local planning frameworks. **WF-PO8.2** Where aviation risks and impacts cannot be fully avoided, they are minimised through effective mitigation measures. **WF PO8.3 Wind turbines** and associated infrastructure incorporate appropriate lighting and marking to address safety risks while minimising impacts.	*Not applicable* *– Performance Outcomes apply.*

2.10 WF Element 9 – Electromagnetic Interference

Element Objective

WF-EO9.1 Wind farms are sited, designed and operated to avoid or minimise **EMI**, ensuring the ongoing reliability and functionality of essential services, including communications, radar, weather monitoring, television and radio broadcasting and radio astronomy.

Performance Outcome	Acceptable Outcome
WF-PO9.1 Wind farms are sited, designed and operated to avoid EMI wherever practicable, ensuring reliable and functional essential services consistent with regulatory and operational requirements, ensuring continuity for civilian, government and commercial systems. **WF-PO9.2** Where **EMI** to essential services cannot be fully avoided, it is minimised through effective mitigation measures, including adjusting wind turbine siting and design, or implementing technical solutions (for example, filters or signal boosters) to maintain service performance.	*Not applicable* *– Performance Outcomes apply.*

2.11 WF Element 10 – Transport

Element Objective

WF-EO10.1 The movement of people, materials and equipment associated with a **wind farm** is managed to:

a. minimise disruption to transport networks and ensure their safe and efficient operation; and
b. avoid and minimise adverse impacts on property, infrastructure and vegetation.

Performance Outcome	Acceptable Outcome
WF-PO10.1 Transport routes for oversize overmass (OSOM) vehicle movements are selected, and vehicle movements are scheduled to: a. maintain road and rail user safety; b. avoid unreasonable disruption to local and regional transport networks; c. avoid or minimise the need for: i. modifications to road and rail infrastructure, and utility services; ii. vegetation clearing; and iii. adverse impacts on adjoining properties. **WF-PO10.2** Workforce vehicular access points are sited to minimise disruption to local and regional transport networks.	*Not applicable – Performance Outcomes apply.*

2.12 WF Element 11 – Construction

Element Objective

WF-EO11.1 Wind farms are constructed to:

a. avoid or minimise adverse impacts on the environment, amenity and safety;
b. maintain sustainable use and management of local resources and infrastructure; and
c. maintain safe and efficient movement of people, materials and equipment.

Performance Outcome	Acceptable Outcome
WF-PO11.1 The construction phase of **wind farms** is managed to avoid or minimise adverse environmental impacts, including effects on **flora**, **fauna**, water, land, air quality and noise. **WF-PO11.2** Land disturbed during construction must be **rehabilitated** post-construction. **WF-PO11.3** Construction activities are planned and executed to maintain site safety and minimise risks to workers and the public, including risks associated with equipment use and, where relevant, aviation interactions. **WF-PO11.4** Use of local resources and infrastructure, including water, gravel and waste disposal facilities, is sustainable and does not place undue strain on local supply or services. **WF-PO11.5** Waste generation is avoided or minimised and, where waste is generated, it is reused or recycled where possible and disposed of responsibly in accordance with best practice. **WF-PO11.6** Vehicular movement of **wind farm** components, construction materials and workforce personnel is coordinated to minimise disruption to transport networks and ensure their safe and efficient operation.	*Not applicable – Performance Outcomes apply.*

2.13 WF Element 12 – Decommissioning and Rehabilitation

Element Objective

WF-EO12.1 Wind farms are **decommissioned** upon ceasing operation to:

a. avoid or minimise adverse impacts on the environment, amenity and safety;
b. facilitate sustainable waste management; and
c. maintain safe and efficient movement of people, materials and equipment.

WF-EO12.2 Wind farm host lots are rehabilitated upon **decommissioning** to their pre-development state or to a condition compatible with their intended ongoing or future land use.

Performance Outcome	Acceptable Outcome
WF-PO12.1 Wind farms are decommissioned and rehabilitated within 18 months of ceasing operation. **WF-PO12.2 Wind farms** are decommissioned by removing: a. above-ground infrastructure, unless retention is agreed with the landowner for repurposing (for example, access tracks); and b. below-ground infrastructure to the extent necessary to support future land uses. **WFPO-12.3** Land disturbed as a result of the wind farm and its **decommissioning** is **rehabilitated** to an acceptable condition that supports future land uses, in consultation with the **host-lot** owner. **WF-PO12.4 Wind farms** are **decommissioned** to avoid or minimise adverse environmental impacts, including effects on **flora**, **fauna**, water, land, air quality and noise. **WF-PO12.5 Decommissioning** activities are planned and executed to maintain site safety and minimise risks to workers and the public, including risks associated with equipment use and, where relevant, aviation interactions. **WF-PO12.6** Waste generation is minimised through reuse and recycling consistent with best practice and all waste is disposed of at licensed facilities with confirmed capacity. **WF-PO12.7** Vehicular movement of **wind farm** components, materials and workforce personnel is coordinated to minimise disruption to transport networks and ensure their safe and efficient operation.	*Not applicable – Performance Outcomes apply.*

Appendices

Appendix 1 – Definitions

The terms defined in the Code apply to all grammatical forms of the word.

Aerodrome – means an area of land or water (including any buildings, installations and equipment) intended for use wholly or partly for the arrival, departure or movement of aircraft and is certified as an aerodrome under the regulations made under the *Civil Aviation Act 1988* (Cth).

Aircraft landing area – means an area of ground intended for use for the conduct of take-off and landing and associated aircraft operations for private, aerial work or charter activities.

Airport – means an aerodrome with significant facilities. This includes:

- Federally leased airports regulated by the *Airports Act 1996*.
- a certified **aerodrome** available for use in regular public transport operations (i.e. commercial fee-paying passengers) and may include contiguous land for aviation-related infrastructure/activities.
- defence airfields under the *Defence Act 1903* and joint-user airports under control of the Department of Defence where an arrangement under section 20 of the *Civil Aviation Act 1988* (Cth) is in force.
- land zoned/reserved for the purpose in the scheme.

Asset Protection Zone – means a managed buffer zone located between a bush fire hazard and a building or piece of infrastructure used to reduce bushfire risk by strategically controlling vegetation and limiting plant flammability within the zone.

Associated infrastructure – means the permanent and temporary buildings, structures and other infrastructure associated with energy infrastructure, including meteorological masts, habitable buildings (such as control or office buildings), storage buildings, fuel storage tanks, mobile concrete batching plants, internal access tracks, fencing, firefighting equipment, gates and signage.

Battery energy storage system – means the use of premises for the operation of one or more battery storage devices that:

a. convert electricity into stored energy; and
b. release stored energy as electricity; and

includes any equipment necessary for the operation of the plant.

Bushfire prone area – means an area designated by the Fire and Emergency Services Commissioner under section 18P of the *Fire and Emergency Services Act 1998* as being subject, or likely to be subject, to bushfires. Refer to Department of Fire and Emergency Services Bushfire Prone Area map.

Coastal zone – means those areas of water and land that may be influenced by coastal processes.

Conservation areas – has the meaning given in the *Environmental Protection Act 1986*.

Dam – means any artificial structure, barrier or levee, whether temporary or permanent, which does or could impound, divert or control water, silt, debris or liquid borne materials, together with its appurtenant (associated) works.

Decommission – means the removal of buildings, structures and infrastructure associated with a land use once it fully or partially ceases operation.

Development site – means that part of a lot(s) on which a building or structure that is the subject of the development stands or is to be constructed.

Ecological community – has the meaning given in the *Biodiversity Conservation Act 2016*.

Electromagnetic interference – means the effect of disturbing or degrading communications and monitoring signals currently in operation and transmitted via microwave, very high frequency and ultra-frequency systems resulting from siting and operation of energy infrastructure and other structures.

Energy infrastructure – means renewable energy facilities, transmission systems and battery energy storage systems.

Fauna – has the meaning given under the *Biodiversity Conservation Act 2016*.

Flora – has the meaning given under the *Biodiversity Conservation Act 2016*.

Ground clearance – means the vertical distance from the ground level at the base of a wind turbine to the tip of its blade when it is in its lowermost position (see Figure 2).

Ground level – means the finished ground level resulting from the development.

Habitable building – has the meaning given under State Planning Policy 3.7 Bushfire (WAPC, 2024).

Host lot – means the lot or lots on which the development is proposed or located and includes all land within the development application or approval area.

Land degradation – has the meaning given under the *Soil and Land Conservation Act 1945*.

Landforms – has the meaning given under the Environmental Protection Authority's Environmental Factor Guideline – Landforms as follows: The distinctive, recognisable physical features of the earth's surface having a characteristic shape produced by natural processes. A landform is defined by the combination of its geology (composition) and morphology (form).

Landscape – means the cumulative expression of natural and cultural features, patterns and processes in a geographical area, including human perceptions and associations with visual landscape incorporating appearance and the type of views provided.'[8]

Maximum blade chord length – means the widest point of a wind turbine blade cross-section, measured from the trailing edge to the leading edge of the blade (refer Figure 6).

Micro-siting – means the movement of wind turbines by small distances within the wind turbine envelope during the detailed design or construction stages of a development.

Migratory species – has the meaning given in the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

Native vegetation – has the meaning given in the *Environmental Protection Act 1986*.

Natural hazards – means processes or phenomena that have the potential to cause significant adverse impacts to people, property and infrastructure associated with fires, floods, coastal erosion and inundation, landslides, other land movements (karst), earthquakes and cyclones.

Noise impact area – means an area of land in the vicinity of a noise-generating land use that is either currently or projected in the future to be affected by an unreasonable noise impact from that land use as identified through a Noise Impact Assessment.

Noise-sensitive land use – means a land use or development occupied or designed for occupation or use for residential purposes (including dwellings, residential buildings or short-stay accommodation), caravan park, camping ground, educational establishment, child care premises, hospital, nursing home, corrective institution or place of worship.

Non-host lot – means any lot adjoining or in proximity to a host lot that may be impacted by the development or land use.

Predicted actual shadow flicker modelling – means a modelling approach for wind turbines that estimates realistic **shadow flicker** at a specific location by accounting for meteorological conditions (such as cloud cover), turbine operations and mitigation measures, such as curtailment and shutdown, with the aim of providing a more realistic forecast of shadow flicker under typical operating conditions.

Public drinking water source area – means underground water pollution control areas, catchment areas and water reserves that are constituted under the *Metropolitan Water Supply, Sewerage, and Drainage Act 1909* or the *Country Areas Water Supply Act 1947*.

Rehabilitation – means a process where disturbed land is returned to a stable, productive and self-sustaining condition, taking future land use into account.

Renewable energy facility/facilities – means premises and structures used to generate electricity from a **renewable source/s**. It does not include renewable energy electricity generation where the electricity produced principally supplies and is incidental to an associated domestic, business or community related premises.

Renewable sources – has the meaning given in the *Electricity Corporations Act 2005*.

Repowering – means the replacement or substantial upgrade of one or more existing **wind turbines** or **associated infrastructure** to extend the facility's operating life or improve its generating capacity.

Revegetation – means returning vegetation (indigenous or otherwise) to an area.

Rotor swept path – means the circular area surrounding the nacelle within which the blades rotate (see **Figure 7**). **Sensitive water resources** – means areas in which development has the potential to affect water-dependent ecosystems, natural waterways and estuaries, **wetlands** and selected coastal inlets and embayment that have been recognised at either the state or national level as having high ecological, social, cultural and/or economic values and are sensitive to contamination associated with land use and development. They include:

a) estuary catchments on the Swan and Scott Coastal Plains;

b) land that drains to and is within two kilometres of Irwin Inlet, Wilson Inlet, Torbay Inlet, Manarup Lagoon, Lake Powell, Princess Royal Harbour and Oyster Harbour;

c) land that drains to and is within two kilometres of the estuarine areas of the following: Dampier Creek (Broome), Hill River, Irwin River (Mid West), Margaret River (South West), Murchison River, Hardy Inlet, Chapman River, Walpole-Nornalup Inlet, Wellstead Estuary and Greenough River;

d) land that drains to and is within two kilometres of the following coastal embayments: Cockburn Sound, Coral Bay, Cowaramup Bay, Flinders Bay, Geographe Bay, Jurien Bay, Koombana Bay, Mangles Bay, Peaceful Bay, Roebuck Bay, Shark Bay (south of the northern tip of Peron Peninsula) and Warnbro Sound;

e) land that drains to and is within one kilometre of other estuarine areas, except for portions approved by government for uses such as ports;

f) within one kilometre up groundwater gradient and 250 metres down groundwater gradient of a **significant wetland**; or where the groundwater gradient is unknown or seasonably variable within one kilometre of the **significant wetland**;

g) habitats of specially protected water-dependent **fauna** and the area within one kilometre of groundwater-dependent **threatened ecological communities** and groundwater-dependent priority **ecological communities**; and

h) wild rivers catchments.

Site-specific assessments undertaken during the planning process may identify additional significant **water resources**.

The sensitive **water resource** area boundaries are identified on the policy map of Sensitive Water Resource Areas and may be refined through higher resolution mapping in accordance with the definition provided above.

Shadow flicker – means the recurrent flickering effect caused when rotating wind turbine blades cast shadows across the ground or nearby buildings, creating alternating patterns on light and shade.

Significant landscape – means a **landscape** area or feature that holds special importance or value, formally recognised in international, national or state legislation or policy and which warrants consideration in planning and development decisions. May include World Heritage areas, national and state parks.

Significant view – means a public view that holds special importance or value for its visual qualities or economic or cultural significance, formally recognised in international, national or state legislation or policy which warrants consideration in planning and development decisions. May include views from iconic scenic or tourist routes, trails and lookouts.

Significant wetland – means Ramsar wetlands and those listed in the Australian Government's Directory of Important Wetlands in Australia; wetlands categorised as Conservation Category in the Department of Biodiversity, Conservation and Attractions' Swan Coastal Plain wetlands dataset, wetlands listed in the South Coast Significant Wetlands dataset, other endorsed wetland datasets and other wetlands that have been identified for protection during the land planning process.

Single house – has the meaning given in the Planning and Development (Local Planning Schemes) Regulations 2015.

Solar farm – means a **renewable energy facility** that uses solar energy to generate electricity and includes ground-mounted photovoltaic and thermal technology and any **associated infrastructure**.

Theoretical shadow flicker modelling – means a modelling approach used to determine the maximum theoretical extent and duration of shadow flicker at a specific location. It is based on geometric simulation that accounts for the sun's path, topographic variation and the wind turbine specifications such as blade chord length and hub height.

Threatened ecological community – has the meaning given in the *Biodiversity Conservation Act 2016* and the *Environmental Protection and Biodiversity Conservation Act 1999* (Cth).

Threatened species – has the meaning given in the *Biodiversity Conservation Act 2016* and the *Environmental Protection and Biodiversity Conservation Act 1999* (Cth).

Transmission system – has the meaning given in the *Electricity Industry Act 2004*.

Turbine curtailment – means the intentional reduction or stopping of blade rotation to avoid or minimise an impact, such as noise, shadow flicker, the risk to wildlife.

Unreasonable noise impact – means a level of noise impact that exceeds the lowest assigned level permitted for a "Noise sensitive premises: highly sensitive area" in Table 1 of the Environmental Protection (Noise) Regulations 1997.

Visually sensitive land use – means a land use where people live or regularly spend extended periods of time, including residential dwellings, short-stay accommodation, schools, hospitals, recreation areas and generally excludes commercial or industrial premises.

Water resources – means watercourses, **waterways** and their estuaries, inlets and floodplains, **wetlands**, groundwater, surface water, stormwater and drainage. A water resource includes all aspects of the water resource, including water, organisms and other components and ecosystems that contribute to the physical condition and ecological health of the water resource.

Waterway – means any river, creek, stream or brook, including its foreshore area or reserve, floodplain, estuary and inlet. This includes systems that flow permanently, for part of the year or occasionally; and parts of the waterway that have been artificially modified.

Wetland – means an area of seasonally, intermittently or permanently waterlogged or inundated land, whether natural or otherwise, and includes a lake, swamp, marsh, spring.

Wind farm – means a renewable energy facility that uses wind energy to generate electricity and includes wind turbines and any **associated infrastructure**.

Wind turbine – means a structure that incorporates a machine designed to convert wind energy into electricity and comprises a foundation, tower, nacelle and rotor. It does not include a wind mill, which uses wind energy to generate mechanical energy.

Wind turbine envelope – means a defined area of land measured from the centre of an indicative wind turbine location within which a wind turbine and its foundation may be sited.

Appendix 2 – Material to Accompany a Development Application

Clause 1.5.1 of the Code requires the following information to accompany an application for development approval for **energy infrastructure**.

All Energy Infrastructure

1. Outcomes from any pre-lodgement community and stakeholder engagement undertaken including:
   a. Details of pre-lodgement engagement activities undertaken.
   b. Summary of information, plans and images shared.
   c. Feedback received, including key issues raised.
   d. Explanation of how feedback was considered or addressed.
2. Confirmation of servicing availability (such as water, power, waste) for any proposed **habitable buildings**.
3. Details of the proposed **transmission system** and transmission line route to connect the **renewable energy facility** and/or **battery energy storage system** to the state's electricity grid and the status of the connection approval where relevant.

Wind Farms

Site Plan Details

1. A plan showing:
   a. Location and GPS coordinates for each **wind turbine** (where individual siting is confirmed), or GPS-defined boundaries of **wind turbine envelopes**.
   b. Setbacks of **wind turbines** and **wind turbine envelopes** from **non-host lot** boundaries and reserves.
2. A plan showing the location, design and depth of **wind turbine foundations**, electricity cabling and other underground infrastructure.
3. A plan showing the location of any **associated infrastructure**.

Wind Turbine Specifications

1. Total number and characteristics of the **wind turbines**, including:
   a. **hub height;**
   b. **blade length** and **rotor diameter**;
   c. **maximum blade chord**;
   d. **blade tip height;**
   e. **ground clearance;**
   f. **rotor swept path;**
   g. colours, materials and finishes;
   h. noise-generation characteristics;
   i. aviation safety lighting; and
   j. transformer locations (near to or inside the tower).

Reports and Plans

1. Noise Impact Assessment
2. Single House Development Potential Impact Assessment (where relevant)
3. Landscape and Visual Impact Assessment
4. Shadow Flicker Assessment (where relevant)
5. Environment Report
6. Bird and Bat Management Plan
7. Water Management Report
8. Bushfire Attack Level (BAL) Contour Map
9. Bushfire Management Plan
10. Coastal Hazard Risk Management and Adaptation Plan (where relevant)
11. Geotechnical Assessment (where relevant)
12. Aviation Impact Assessment
13. Electromagnetic Interference Assessment
14. Transport Impact Assessment
15. Construction and Environmental Management Plan
16. Preliminary Decommissioning and Rehabilitation Management Plan

Note: Information required in the above reports and plans is detailed in Part Two – Wind Farms