Frequently Asked Questions

Why is wind an important part of the future energy requirements for the State?	**Wind helps ensure our energy supply is affordable:** Using a renewable energy source like wind is one of the most cost-effective solutions for generating electricity. Western Australia has some of the best wind resources in Australia. **Wind creates more price security:** it reduces our dependence on finite sources of energy that can be affected by price fluctuations based on factors outside of our control. **Wind, solar and batteries are key to a diverse and secure energy system:** A diverse power grid mitigates the risks associated with overdependence on a single energy source. Accessing wind resources in different areas of the State improves network resilience, helping ensure there is backup energy available if there is an outage in another part of the grid.
Why not nuclear?	Aside from the fact that nuclear energy is banned federally, technologies suitable for our grid don't yet exist and probably won't be ready for another 15 years. We need new sources of generation now to support a transition from coal, which has become uneconomic to extract due to dwindling coal reserves. As well as reliability (ie "keeping the lights on"), a key principle of our State's energy transition is affordability. It is not only important that our energy is safe, reliable and environmentally sustainable, but it's also imperative we keep energy bills as low as possible for Western Australians. **Nuclear is incredibly expensive, not only to build, but also to run.** We have looked at the most affordable, reliable and sustainable energy generation options for the state, and every time the model points to a mix of sun, wind, and long duration energy storage technology. Wind and solar generation are the better options for WA because of our strong wind and sun resources and also because they utilise proven technologies that are right available now.
Are windfarms dangerous and noisy. Will I have to move off my property?	In 2016, the National Health and Medical Research Council announced the funding of two research studies into wind farms and health. One study, by Flinders University, was focused on the effects of audible wind farm noise on sleep. The other study, conducted by the University of New South Wales, was focused on measuring the effects of infrasound impacts on humans.

	The Flinders University study found that only 0.3% of people residing within 10km of a wind farm attribute sleep disturbance to wind farm noise. This figure is no higher than that for sleep disturbances attributed to road traffic or other noises. The second study exposed subjects to 72 hours of infrasound, pseudo infrasound, and traffic noise exposure. This study determined that infrasound did not worsen sleep or cause any health concerns. The results from both studies can be found on the National Health and Medical Research Council website. Consider visiting a completed wind farm to experience the noise impacts first-hand.
What are the water requirements around wind turbine projects?	During the construction phase, the water requirements for installing a wind turbine are generally minimal. Water is primarily used for dust suppression during construction and for mixing concrete for the concrete footings. Wind turbines do not require water once operational. In comparison, coal and nuclear power plants are much more water intensive. A typical 1,000 MW coal-fired power station uses enough water in one year to meet the basic water needs of nearly 700,000 people. Source: Australian Conservation Foundation, Water for Coal *https://www.acf.org.au/water_for_coal*
Why can't you put all of the renewables on Government owned land?	There are several considerations that help determine where renewables generation projects are placed. Four key factors include: 1. **Wind resource availability** – is there enough wind in the area; 2. **Energy demand** – where is the energy demand, and what is the most efficient way to deliver energy to those area; 3. **Wind diversity** – helping ensure that wind generation projects are spread across various parts of the State to maintain reliability for the grid; and 4. **Environmental impact** – a wind turbine or transmission lines would have less impact on the environment and could be designed to co-exist better on a paddock than through a State Forest. The most suitable locations for wind turbines will sometimes be on government-owned land – but in other cases, would be better suited in other areas.

	If renewables are placed in less effective areas, this would likely mean we would need more wind turbines built and connected, at a higher overall cost, to have the same effect.
How can we maintain the balance between prime agricultural land and wind projects?	Internationally and across Australia, there are many examples where renewable energy infrastructure is coexisting with the natural environment and existing land uses, including agriculture. At Yandin Wind Farm in WA, the 51 wind turbines in place only occupy around 0.03 per cent of the project site, meaning that normal farming activities, including grazing and cropping can continue. The Western Australian Planning Commission's Position Statement: Renewable Energy Facilities recommends that renewable energy facilities such as wind and solar farms be preferably located on cleared rural land with low agricultural value. Developers will be required to submit land capability assessments as part of their Development Application Process, which will be assessed against the position statement and the required application criteria. **Yandin Wind Farm:** https://www.yandinwindfarm.com.au/ **ARENA's co-location study:** https://arena.gov.au/knowledge-bank/wind-solar-co-location-study/
Will wind turbines limit landowners ability for crop spraying?	Pilots who conduct aerial spraying regularly operate in the vicinity of a range of hazards, including power lines, communications towers, and trees. Prior to each spraying assignment, pilots must complete their own site-specific safety assessment which identifies these hazards and plans their flight around them. Wind turbines are no different to the other obstacles aerial sprayers must consider before they conduct their spraying assignments. Aerial spraying takes place when wind speeds are low, to avoid excessive spray drift on to neighbouring properties. As a general rule, aerial spraying is conducted in wind speeds under 8 knots, or approximately 15 km/h. Wind turbines only operate when wind speed is above 6 knots (11 km/h), meaning that they are likely to be inactive during most aerial spraying assignments. Landowners should speak to developers around arrangements that can be made to minimise impact to

	hosting and neighbouring properties when crop spraying is required. The Civil Aviation Safety Authority Safeguarding Framework details the appropriate steps wind farm developers should take to minimise hazards in areas where aerial agricultural operations occur.
What is the risk that a wind turbine starts a fire?	Wind monitoring masts and wind turbines are designed using materials that provide a safe path for lightning strikes to the ground. They are also designed with materials to limit fire risk and with systems that can monitor and respond automatically to conditions inside the turbine by following shutdown and isolation procedures.
Can aerial support still be provided for fires around wind farms?	In an emergency, wind turbines should be stopped in the 'Y' or 'rabbit ear' position. This position removes one of the blades as a potential obstacle and provides the maximum airspace for an aircraft to manoeuvre. Developers should liaise with the relevant fire and land management stakeholders during the project planning phase and throughout the operational life of a wind farm.
How can landowners be assured that wind farm infrastructure will be properly decommissioned and land rehabilitated at the end of its life?	Decommissioning is typically written into Commercial Lease Contracts between landowners and developers. Landowners should discuss decommissioning options with prospective developers and agree to arrangements that are suitable for both parties. For example, developers may offer to set-up a decommissioning fund, where money stays in the bank for the last 5 years of the project. The contract could include a clause that ensures decommissioning obligations are transferred to any entity that may acquire the project.
What are my obligations related to hosting connecting transmission?	Wind turbines connect to the network via a connecting transmission line. While wind or solar farm developers may be responsible for constructing this connecting transmission line, once it is connected to a regulated network, the transmission line will be subject to the requirements of the network provider (e.g., Western Power and Horizon Power). Landowners hosting transmission infrastructure may have several obligations to ensure the safe and efficient operation of the infrastructure. These obligations may include: 1. **Granting Easements**: Landowners may need to grant easements or rights of way to allow for the construction, maintenance, and operation of transmission lines and related infrastructure.

	2. **Compliance with Regulations**: Landowners must comply with relevant state and local regulations, including environmental and safety standards. 3. **Maintenance of Access**: Ensuring that access to the transmission infrastructure is maintained for workers and equipment. 4. **Notification of Changes**: Informing the network operator of any changes to the land that might affect the transmission infrastructure. 5. **Restrictions on Activities**: Certain activities within the easement area may be restricted to prevent risks to public safety or the reliable operation of the network. This can include limitations on building structures, planting trees, or conducting certain types of farming activities. These obligations help ensure the safe and efficient operation of the transmission network and minimise disruptions to both the landowner and the network operator. For specific guidance and more detailed information, landowners should contact the relevant the network operations or consult your easement agreement. Transmission line easement: landowner obligations
What examples are there of neighbour agreements or compensation?	As both are private agreements, the wind developer will decide when and if an agreement will be offered. While compensation and neighbour agreements are usually commercial in confidence, some developers are choosing to highlight their neighbouring agreement programs publicly. An example of a neighbouring agreement can be found on the Pines Wind Farm website: Example - Nearby Neighbour Program For considerations around neighbouring agreements, the Australian Energy Infrastructure Commissioner has developed some helpful guidance, which can be found on: Neighbour Matters Landowners should have an independent legal and financial advisor review all agreements before they are signed. Most developers will offer to compensate the landowner for this review. Neighbour agreements, while voluntary, are considered best practice and can help ensure efficient project delivery. If a wind farm developer has not yet offered or discussed neighbouring agreements, landowners can suggest or mandate that a neighbouring agreement is developed as part of contract terms.

What happens with wind turbines at end of life?	Roughly 80-85% of modern wind turbine materials, including the steel turbine tower, can be recycled. While the wind turbine blades are not yet commonly recycled, new materials and technologies are being trialled. In the meantime, we encourage developers to work with communities to identify the most appropriate way to reuse or recycle all parts of the wind turbine. There may be unique or novel ways to repurpose parts of the wind turbine that are difficult to recycle. For example, in Denmark energy companies have turned decommissioned wind turbine blades into bike shelters and play equipment. In Esperance, Synergy donated decommissioned turbines to the North Metro TAFE, to help further renewable energy education in WA.
What safeguards are in place to reduce/ repair damage to infrastructure, such as roads and vegetation during the transport of turbines?	These areas are heavily regulated by the State Government. As part of the Development Application Process, developers must develop a: • Construction Management Plan; • Traffic Management Plan; and an • Environmental Management Plan Developers are required to return local roads to the pre-construction standards after the completion of a windfarm.
How does renewable energy help lower our State's emissions?	Wind is an emissions-free source of energy. The shift to low-carbon energy sources reduces impacts associated with climate change, such as extreme weather events and declines in biodiversity. For each megawatt of energy produced by a wind turbine, we would save around two-thirds of a tonne of greenhouse gases – equal to taking about 2,300 cars off the road.
What is the 'carbon payback' period for wind turbines?	The 'carbon payback' period for wind turbines is approximately 5–12 months. This is how long it takes for a turbine to 'break even' by offsetting the amount of carbon used in its lifetime (including in its manufacture).
How will renewable energy projects impact my land value?	It is important for landowners to consider both the benefits and potential challenges associated with wind turbine developments. Hosting wind turbines can add value to a property, providing landowners with a diverse source of income through lease payments and other financial incentives. This additional income can help landowners invest in their properties, improve their operations, and support their families. However, it's also important to recognise that the value of agricultural land can fluctuate over time due to a range of

	factors, including market conditions, climate variability, and changes in land use policies. While the presence of wind turbines may increase land values, it doesn't necessarily mean that landowners will be unable to expand their businesses. In fact, the additional income from hosting wind turbines can provide farmers with the financial flexibility to invest in other areas of their operations or purchase additional land when opportunities arise.
What are the impacts of renewable energy projects on land clearing and biodiversity?	Prioritising already cleared land for development can help reduce the amount of land clearing required for a project. This in turn reduces the impact land clearing can have on biodiversity and an environment's capacity for natural carbon sequestration.
Where can I find environmental information related to proposed energy projects in my community?	There are standard conditions for Part IV Ministerial Statements requiring that all data related to a proposal (assessment and post-assessment) should be made publicly available. Exceptions can be requested via the CEO, however this is only for data that may be considered 'commercial in confidence' being a 'trade secret', of which biodiversity data does not meet this definition. Where a proponent/consultant is undertaking biodiversity surveys, they are required to obtain relevant authorisations under the Biodiversity Conservation Act 2016, from DBCA, and the requirements of these authorisations may include submission of data (records or returns) to DBCA, which may be made publicly available via the Dandjoo website. Under Section 40 and Section 122B of the EP Act, 'documentation' including reports and data can be published by the regulatory authority (e.g. EPA, DWER, DEMIRS) as part of a public review process. Similar provisions are made under the Native Vegetation Clearing Regulations. For Part IV, biodiversity survey reports are published on the EPA's website, and for Part V on the DWER Native Vegetation Clearing Permits website. In addition, proponents must submit their biodiversity survey reports and data to the Index of Biodiversity Surveys for Assessment (IBSA), as directed in the EPA's Procedures Manual, and are encouraged to allow publication and use of this data via their metadata licensing statement. This data is then made publicly available via the IBSA website, once the approval process is complete and a determination published.
Will wind turbines harm birds and bats?	Wind energy is estimated to be 35 times safer for birdlife than fossil fuel energy, at only 0.27 avian fatalities per GWh (through collisions).

	The study found that for every one bird accidentally killed by a wind turbine, nuclear and fossil fuel-powered plants killed 2,118 birds. The large number of fatalities from fossil fuels is mostly from climate change, which alters weather patterns and destroys the habitats which birds rely on. *Source: Journal of Integrative Environmental Sciences*
Can wind turbines fall during extreme weather events?	Although wind turbines are designed to automatically shut off at very high wind speeds, on rare occasions they can be damaged by being hit directly by an extreme weather event (such as a cyclone). There have also been incredibly rare instances of individual blade parts, referred to as trailing edges, becoming detached. These are usually small and flexible, which reduces the chance of injury or property damage.
How often are wind turbines maintained?	Just like any other mechanical machine, wind turbines require regular maintenance to ensure they operate efficiently and most importantly, safely. General practice is that wind turbines are typically serviced every six months to one year. This may differ based on the developer and maintenance schedule. It is recommended that landowners discuss and agree to a maintenance schedule as part of the Commercial Lease Agreement.
How tall are wind turbines?	Wind turbines in Western Australia are typically between 120-160m tall, with blades around 90m long. The footprint associated with wind farms include turbine towers and footings (typically, a 2ha cleared area is required per tower) but also from the access roads, which need additional widths to enable the transport of tower sections, blades, gearboxes, and nacelles.
What transmission infrastructure will be upgraded or built in the SWIS?	Western Power has been undertaking surveys and assessments to better understand environmental and heritage values and to source base information that will be used in planning the upgrades and new transmission required across the South West Interconnected System (SWIS). Clean Energy Link North has been approved and is underway, which will involve upgrading the current mix of 132 kV and 330 kV lines in parts of the northern network to unlock the transmission capacity in the Wheatbelt and Mid-West. To view updates on Clean Energy Link North, visit the Western Power project page: https://www.westernpower.com.au/resources-education/our-

	network-the-grid/future-of-the-grid/clean-energy-link-program/clean-energy-link-north/ Outside of Clean Energy Link North, no decisions on transmission development have been confirmed. Western Power is currently undertaking analysis of the results and will be conducting community engagement and briefing Government on the outcomes and recommendations later in 2025.
I have signed an agreement with a developer to host a renewable project on my land. When will I get confirmation that the project will proceed?	When signing an agreement, it is important to note that there are many factors that may impact the project, including the scale and viability, and that a signed agreement does not guarantee that the project will proceed. Reaching Final Investment Decision (FID) is generally the point at which a project is confirmed to proceed and there are a number of steps prior to this. Development Applications can be submitted once the developer has gathered and developed the items outlined in the requirements, which includes providing information as to how it will mitigate impacts to the natural environment, heritage areas, noise levels, and the community. A developer must acquire approval from the network operators to connect to a new or existing transmission line, the Australian Energy Market Operator (AEMO) to participate in the Wholesale Electricity Market (if in the SWIS) and secure a generation licence from the Economic Regulation Authority if the project is over 100MW (nameplate capacity at the generation point). Other approvals, including environmental approvals, are also required. Depending on the findings of the environmental assessments, some applications will require further monitoring and assessment from the Environmental Protection Authority, or in accordance with the Commonwealth Environmental Protection, Biodiversity and Conservation Act, which can take several years.
What role does local government or community members have on influencing if a renewable project will proceed?	Proponents of wind farm projects have the choice of the following three development application pathways available: 1. Significant Development Pathway (WAPC determination) available for development proposals with an estimated cost of $20 million or more in the Perth and Peel region and $5 million or more elsewhere; 2. Development Assessment Panels for developments with an estimated development value of $2 million or more; and

	3. Local government. If they choose the local government pathway, the local government's decision on the development application needs to be made in accordance with the provisions of the local planning framework. For example, if an application is lodged with the local government for a land-use that is classed as a discretional under the local planning scheme zoning table, the local government may have grounds to refuse it (noting that an appeal rights of the decision to the State Administrative Tribunal may apply). Under all three pathways, there is a consultation period where the views of local government, hosting landowners, neighbours and community members can be shared and considered as part of the decision-making process.
How is the location of renewable energy projects identified?	There are several considerations that go into where renewables are placed – and particularly wind turbines. Key factors include: 1. **Resource availability:** projects are most viable when there is strong and consistent wind or solar resource in the area; 2. **Energy demand and transmission capacity:** assessment is undertaken to identify the most efficient way to service energy demand. This requires co-locating near a transmission line with sufficient capacity; 3. **Energy diversity:** Wind speeds can vary significantly across different regions. By placing wind farms in diverse locations, the overall variability in wind power generation is reduced. This means that when the wind isn't blowing in one area, it might be blowing in another, helping to maintain a more consistent power supply. Additionally, relying on a single source or location for wind energy can be risky. Natural disasters, maintenance issues, or other disruptions in one area can severely impact energy supply. Diverse placement mitigates these risks, ensuring that energy production isn't overly dependent on any single location; 4. **Environmental impact:** the environmental effects of development and operation must be considered. A wind turbine or transmission line will have less impact on the environment when hosted on cleared land. Wind farms in particularly can co-exist better on a paddock than in a State Forest; and 5. **Network Economic Efficiency:** To ensure the lowest cost to consumers, the network operator must demonstrate cost-effective development and operation of the network. If renewables are placed in less effective

	areas, this would likely mean we would need more wind turbines built and connected to have the same effect.
How are energy generation sources identified?	The Australian Energy Market Operator (AEMO) determines how much electricity we need to meet the growing demand in the South West Interconnected System (SWIS). As we use less coal and need more energy, we'll need other sources to step in. AEMO doesn't favour any specific technology. Instead, it lets the market decide the best options. Some energy solutions work better in WA than others. For example, WA's dry climate and flat terrain make pumped hydro tricky. Wind and solar power are not only cheaper than other options like nuclear, gas, and batteries, but WA also has plenty of wind and sunshine. Analysis shows that a mix of solar and wind, supported by batteries and gas, will provide the most affordable, reliable, and environmentally sustainable energy for WA. All parts of WA will see a mix of these energy sources. From the Pilbara to the Goldfields, new renewable energy projects and power lines will be needed.
How will Government support local communities hosting renewable energy projects?	The WA Government is working to support communities hosting new renewable energy projects in several ways, including: - Establishing PoweringWA to facilitate the energy transition; - Engagement with Local Government Associations (LGAs) to better understand their issues, needs and concerns (starting with engagements between the Minister for Energy/Coordinator of Energy and LGAs); - Working across Government to mitigate issues identified; - Considering options for community benefits; - Developing supporting material and resources; and - Encouraging proponents to engage meaningfully with project neighbours and the broader community. PoweringWA is currently development support resources for landholders hosting or living near renewable energy projects. Additional resources are available on the Australian Energy Infrastructure Commissioner Website - Resources and publications | aeic