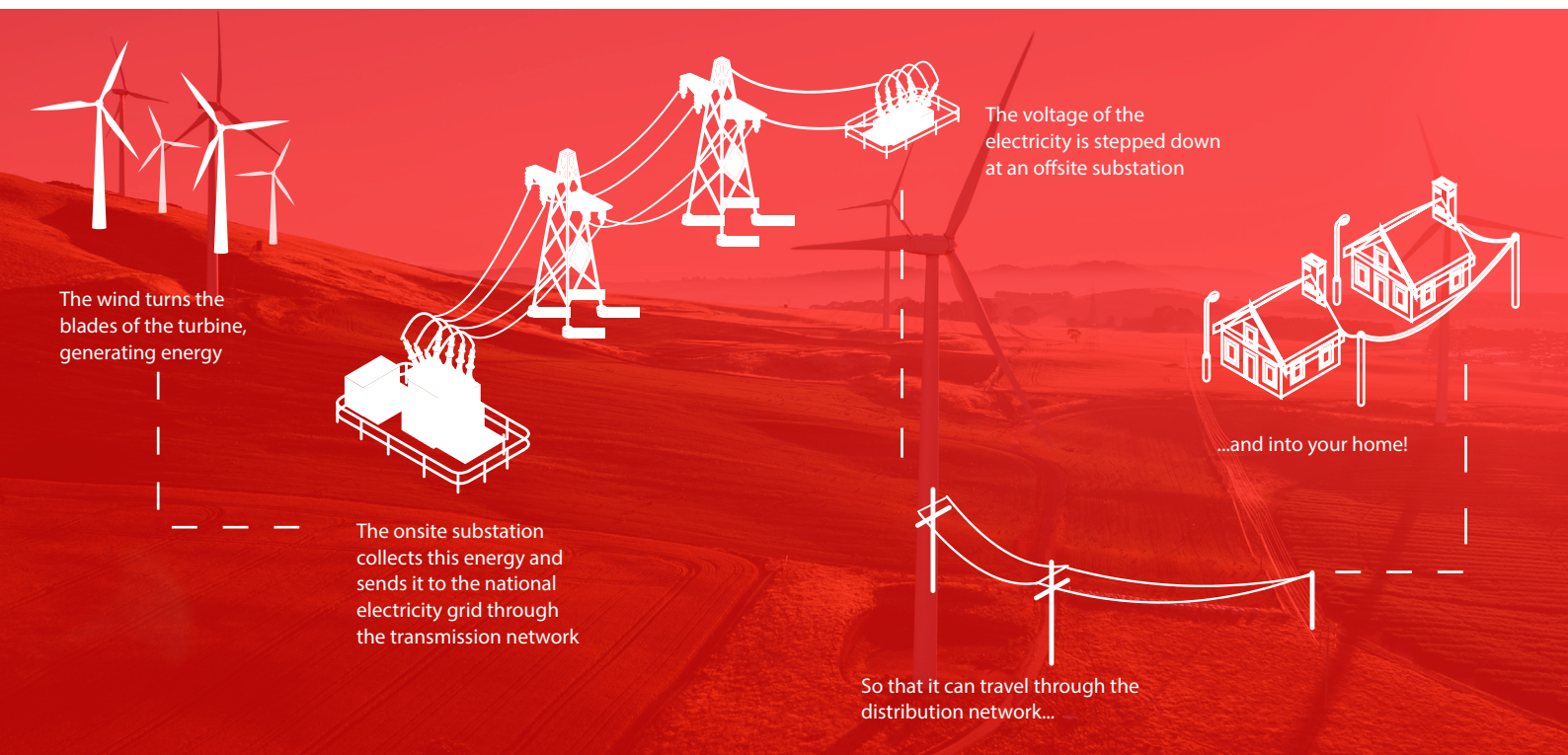


ACCIONA ENERGÍA

How does wind energy work?



FREQUENTLY ASKED QUESTIONS (FAQ'S)

How does a wind turbine work?

Wind turbines generally start to turn at wind speeds of three metres per second (10 km/hr). Most turbines reach maximum power output at a wind speed of around 10 metres per second (36 km/hr).

The rotor turns the blades at approximately 9 to 15 revolutions per minute at a maximum tip speed of 230km/h.

The blades of a wind turbine generally turn in a clockwise direction, and turbine rotation is maintained at a constant speed as the wind blows.

The generating unit (nacelle) contains a generator, transmission system and power transforming equipment. The nacelle is designed so that it can rotate around the shaft to face into the wind, allowing the turbine to produce electricity regardless of wind direction.

How much electricity can a wind turbine produce?

Over the years as technology has improved, the generation capacity of turbines has increased. Modern wind turbines are capable of generating 4-5.5 megawatts of electrical energy at full power.

A single 5.5 megawatt turbine provides sufficient electricity to power around 3,500 homes and save over 15,000 tons of greenhouse gas emissions per year.

How is a wind farm constructed?

Building Access Roads: Each wind farm site starts with building access roads for the transportation of equipment and the connection routes.

Preparing Foundations: Concrete foundations are built to safely secure the wind turbines. Foundations consist of concrete, reinforced steel and bolts.

Assembling the Towers: Wind Turbines are composed of a tower, a 3-blade rotor and a nacelle. Once the foundation is built, the towers will be erected in sections by a large crane and bolted into position. The nacelle is then lifted and fixed to the tower. The hub and blades are then individually attached.

Connecting the Turbines: An underground electrical collection system will be installed to connect each wind turbine to an onsite substation. An overhead transmission line will connect the on-site substation to the transmission network.

Operations and Maintenance (O&M) Building: An O&M building will be constructed as a base to monitor performance on site and store spare parts for ongoing maintenance.

Commissioning and Operation: Once all the turbines are fully operational, this means that the construction phase is deemed complete and commissioned and the wind farm will then enter the operational and maintenance phase.



OUR PROJECTS

Harnessing the power of wind



MacIntyre Wind Farm, QLD (1,026 MW)



produces the equivalent clean energy it would take to power the whole of the Gold Coast!



* Construction commencing 2022

Mortlake South Wind Farm, VIC (157.5 MW)



produces the equivalent clean energy it would take to continuously power over 800,000 refrigerators!



Mt. Gellibrand Wind Farm, VIC (132 MW)



produces the equivalent clean energy it would take to power 2.4 million laptops every day!



Gunning Wind Farm, NSW (46.5 MW)



produces the equivalent clean energy it would take to power the whole of Goulburn!



Waubra Wind Farm, VIC (192 MW)



produces the equivalent clean energy it would take to power the whole of Ballarat!



Cathedral Rocks Wind Farm, SA (66 MW)



produces the equivalent clean energy it would take to power 85 million iPhones per day!



Total wind energy generation = 1,621 MW. Enough to power 1,122,000 homes, which is almost enough to power South Australia's capital city Adelaide!

