

# EMPower

## Environmental Impact Assessment

EMPower have commissioned an ongoing Environmental Impact Assessment (EIA) for the proposed project to assess what effects the project might have on the local human and ecological environment. EMPower are the primary project management contacts during the project assessments and the company will engage with the key stakeholders at every stage of this research to ensure we keep the local community and all interested stakeholders up to date with accurate project information. The results of all these assessments will form part of the final publicly available Environmental Impact Assessment Report (EIAR) and the planning submission to the consenting authority. The following studies will be conducted as part of this process.



### Population and Human Health

The Population and Human Health assessment includes the processes of analysing, monitoring and managing the intended and unintended consequences, both positive and negative, of planned interventions (e.g. a wind farm project) on the local human population. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment.

This will include the following activity at a minimum:

- identify interested and affected people;
- collect baseline data (social profiling) to allow evaluation and audit of the impact assessment process and the planned intervention itself;
- give a rich picture of the local historical and cultural context
- predict (or analyse) likely impacts and how different stakeholders are likely to respond;
- recommend mitigation measures;
- describe potential conflicts between stakeholders and advise on resolution processes;



### Biodiversity

A detailed biodiversity, flora and fauna study will be conducted in order to understand the current biological conditions present within the Study Area, as well as the likely impacts of such a development on surrounding environments. Surveys include habitat mapping and targeted sampling of flora and non-avian fauna at a variety of survey points within different identified habitats within the proposed projects Study Area as well as additional survey points along the transmission corridor. Timed species counts can be used to record resident fauna species at each survey point.

Plant species will be recorded using baseline study investigations and any protected or endangered species will be noted. The final site design will avoid any sensitive habitats and mitigate by design where possible.



### Ornithology

The Royal Society for the Protection of Birds (RSPB) states that wind power has the greatest potential to make a significant difference in mitigating climate change in the coming decade as: 'it is the most advanced and widely available of the new renewable technologies'. RSPB insists that wind farm proposals that may affect sensitive bird populations or their habitats are subject to rigorous environmental assessment before development is permitted and that the effects of any approved developments are monitored before and after a projects construction.

Impacts of wind farms on bird populations can occur through collisions, habitat loss, avoidance/barrier effects, disturbance displacement or exclusion, e.g. from breeding grounds or foraging areas. For this reason, EMPower take the utmost due care and diligence to ensure that any proposed wind turbines are positioned to cause the minimum possible impact to the native birds well being and habitat. In line with industry best practice, EMPower will be conducting a minimum of 2 years bird surveys prior to submission of a any planning application.



### Noise & Vibration

The evolution of wind farm technology over the past decade has rendered mechanical noise from turbines almost undetectable with the main sound being the aerodynamic 'swoosh' of the blades passing the tower. However, strict guidelines on wind turbines and noise emissions remain to ensure the protection of residential amenity.

Noise assessments that will be undertaken as part of the EIA will comply with the wind farm planning guidelines. Independent noise consultants will undertake a noise assessment to consider the impact of proposed turbine positions on the surrounding area, in particular on nearby residential properties. Measurements of background noise will be taken from the closest dwellings to the Study Area, allowing wind farm noise emissions to be simulated based on the background levels measured and combined with turbine noise emissions. All windfarms must comply with the current guidelines which state that noise levels shall not exceed the greater of, 5dB(A) above background noise levels or 43dB(A) when measured externally at a dwelling or other sensitive receptors.

The final EIA will include a report describing the findings of the noise assessment and any impact on local dwellings from the proposed wind farm. This final report and research will be available for review by any member of the public.



Source/Activity	Indicative noise level dBA
Rural night-time background	20-50
Quiet bedroom	35
Windfarm at 350m	35-45
Busy road at 5 km	35-45
Car at 65km/hr at 100m	55
Busy general office	60
Conversation	60
Truck at 50km/hr at 100m	65
Inside a typical shopping centre	70-75
Passenger cabin of jet aircraft	85
City Traffic	90

Comparison of sound pressure levels in our Environment  
(Source: Factsheet by Australian Government (Greenhouse Office) & Australian Wind Energy Association)

### Water & Hydrology

Hydrology and hydrogeology refers to the study of how water flows under and through the landscape. A desktop survey to establish the baseline conditions within and adjacent to the Study Area will be undertaken. Following this desktop survey, field visits will confirm a number of these findings and inform any required actions or mitigation strategies for the various stages of the proposed project's life cycle, most notably construction. The final project design will minimise the risk of construction materials disturbing local water courses, streams and rivers in the proposed project's vicinity.

