Abstract

Wireless telecommunications technology can experience detrimental effects when a wind turbine is located close to a wireless link path. Wireless links form a diverse network of invisible communication lines across the landscape, and can be difficult to plot accurately. Wind turbine blades rotate in the wind, and if a link path has gone undetected and is close to a proposed wind turbine, then the transmitted information which is sent and received between the two wireless end points may experience some disruption, leading to an unreliable service. Link operators can object to a wind development if these issues are not addressed.

Objectives

A recent assessment was undertaken by Pager Power which removed a potential conflict between a microwave link operator and a wind farm developer. The operator had expressed some justified concern due to the potential disruption expected to the link path service as a result of the proposed wind turbine’s close proximity. The proposed wind turbine’s blade tips were expected to infringe the calculated exclusion zone radius. A number of other site constraints were preventing the wind turbine from being moved away from the proposed link path.

Methods

The feasibility of re-routing the link path around the proposed wind turbine was assessed, which would render the calculated exclusion zone free of potential infringement. The entire development site was assessed for potential locations where microwave link path relay dishes could be mounted.

A suitable location for the relay dishes would need a clear line-of-sight to both of the original link ends, without any potential obstructions restricting the provided service.

Results

The assessment results for this case study found that a link path relay would be feasible within the proposed development boundary, making use of an existing telecommunication mast already in place on the site. The evidence gathered within the report demonstrated visually and technically that the potential location for the new relay dishes would have clear line-of-sight and suitable levels of link path clearance from the proposed turbine blade tips. By making use of an existing telecommunications mast, the expected mitigation costs were also significantly reduced.

Conclusions

The proposed solution was accepted by the link operator. Actions have been put in place as a result, with the operator’s objection being removed.

References

1. Pager Power Ltd. Recent in-house analysis and case study.