EUROCONTROL AND WIND TURBINES

How to assess the potential impact of wind turbines on surveillance systems?

Many European states have ambitious renewable energy targets for the year 2020. In order to meet these targets, they will have to use renewable, sustainable ways of generating electricity – and wind turbines are useful devices for doing this.

However, wind turbines can potentially have a detrimental impact on the performance of surveillance systems used in air traffic control. A wind farm with many wind turbines could create false targets or lose or corrupt information on an aircraft’s position.

This is still an ongoing concern and EUROCONTROL announced on 20 November that it had recently published an update to its recommended methodology on assessing the potential impact of wind turbine structures on surveillance systems. It also gave suggestions for mitigation options.

The original document was written in 2009 by a group of civil and military surveillance experts from the European Civil Aviation Conference states. The procedures it describes were based on a consolidation of practical experience and supplemented by results from third-party studies.

The recent update* reflects the experiences gained in applying the original methodology and includes provision for emerging techniques and technologies which can help alleviate any interference issues.

The basic approach however remains the same: it is centred on early and constructive dialogue, promoting reciprocal transparency between air navigation service providers – ANSPs – and wind energy developers.

A common, mutually accepted, methodology helps ANSPs maintain the necessary levels of safety by making sure that their surveillance systems are protected, while supporting the installation of wind turbines to the greatest extent possible.

*The EUROCONTROL publication How to Assess the Potential Impact of Wind Turbines on Surveillance Sensors Guidelines is available in the nearby pdf.
This document, issued on 9 September, provides guidelines for Air Navigation Service Providers (ANSP), and also wind energy developers, on how to assess whether or not wind turbines could impact upon the provision of surveillance services currently provided and identifies some possible means of mitigation.

Furthermore, the document aims at maintaining the necessary levels of safety and efficiency of surveillance related Air Traffic Services whilst supporting to the maximum extent possible the development of wind energy.

The proposed process defines different geographical zones, based on simple criteria, for each type of sensors (radar only for the time being). For each of these zones different conditions are defined to ensure that the impact of the wind turbine is tolerable:

- In the safeguarding zone, the closest area to the sensor, wind turbines are not allowed to be built.

- In the second zone, wind turbines can be built provided that a specific impact assessment analysis demonstrates that the impact can be tolerated.

- In the third zone, wind turbines can be built on the basis of the results of a simple and generic impact assessment analysis that is further described in this document.

- In the last zone, the impact is acceptable or even non-existent.

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