

Interactive Crosswind Sign

Abstract

Globally, the cause for 2% of traffic accidents per year is the existence of strong side winds in certain places of road networks and especially on motorways. Most of these accidents are noted in areas in which, statistically, winds blow with high average speed. A further reason is that the topological configuration, such as exits from tunnels and bridges, causes the winds to intensify. The above problem creates the need for an effective system which will be able to warn the drivers.

Our goal is to develop a system that eliminates the negative aspects of conventional warning methods. The system works autonomously and in interaction with the wind to warn drivers effectively. The system which we develop combines the display of the warning message through a LED VMS sign that is better perceived by drivers, without any site installation restrictions.

More specifically, the system is based on the operation of a vertical axis Savonius type wind turbine, direct connected to the illuminated sign. As a whole, the system:

- provides autonomous operation
- is independent of the electricity network and of communication with weather stations as well
- provides interaction with the wind
- is in line with the framework of green development since its operation system is environmentally friendly.

