Noyes, Thomas G. (DNREC)

From: Albert Anderson <triflate@att.net>
Sent: Tuesday, November 28, 2017 1:20 AM
To: Noyes, Thomas G. (DNREC)
Subject: Offshore wind turbine visibility

Sir,
I noticed some concern in the newspaper about the visibility of wind turbines and their effect on tourism. I have done some calculations on the visibility of a 600 foot diameter wind turbine as viewed from a person standing on a beach. I assume a 600 foot diameter turbine is viewed from a distance of 17 miles. For the moment, assume the turbine blades appear face on as a disk that is 600 feet in diameter. Due to the curvature of the earth, only the top 400 feet of the disk is visible from the beach. The other 200 feet of the disk lies below the horizon. It can be shown that the apparent size of the disk will be the same size as a dime when the dime is viewed from a distance of 9'3". If the turbine disk is viewed from the side, it will appear about the same size as the dime when held edgewise from the same distance of 9'3".

It may be possible to minimize the visibility of the turbine blades even further by using a trick first employed by British antisubmarine aircraft in WWII. It may seem counter intuitive, but the trick was to place lights on the leading edges of the aircraft. German submarine crews could spot approaching aircraft at a great distance because the airplane appeared as a dark spot on a bright sky. By illuminating the leading edges, the artificial light could compensate for the skylight that the airplane was blocking. The aircraft could approach much closer to the submarine before it could be spotted by the submarine crew (to the great dismay of the U-boat captain, who was about to be sunk).

I suggest that a similar lighting system be used to decrease the visibility of the turbine. It could use diodes of various colors to match the yellow/orange color of a sunrise and blue/white diodes to match the noon-day sky color. Naturally, at night the diodes would be turned off.

A. Anderson