

Original Questions:

1. Can the community/township place height limitations just like they do in all current zoning districts? **See response below.**
2. Can the community/township place height limitations of 199' in order to keep lights off units (night sky preservation)? **See response to question U1.**
3. Can we restrict the height of wind turbines in an effort to preserve our night skies (so that no lights are mandated by the FAA or other agencies)? **See response to question U1.**
4. Is it within the rights of a township to restrict the height of a turbine so they do not require FAA lighting? This would be to protect the dark night time sky. **See response to question U1.**
5. Does the FAA issue variances on height if the turbines are determined to be too tall or are they made to stay at the restricted height? Under what circumstances is an energy company entitled to a variance, for say height of wind turbines from the FAA? **See response below.**
6. Where in the U.S. are there taller wind turbines than Duke's proposed ones here? How much taller? Are any of them in close proximity to homes? **See response below.**
7. How tall would these wind turbines be to their nose and to the top the blade's highest reach? **Project specific.**

Questions and Responses:

These questions may have been recategorized and reorganized. Some may have been sent to another "theme" area (this will have been explained in red under the "Original Questions" section). In other cases two or more questions will be answered with one response.

- U1. Can the community/township place height limitations just like they do in all current zoning districts?

Response: Yes, communities can create zoning ordinances to limit towers of certain heights. For instance, Arcadia Township had created a height restriction of 300 feet.

- U5. Does the FAA issue variances on height if the turbines are determined to be too tall or are they made to stay at the restricted height? Under what circumstances is an energy company entitled to a variance, for say height of wind turbines from the FAA?

Response: Part 77 of the FAA regulations establishes standards and notification requirements for objects affecting navigable airspace. This notification serves as the basis for determining the potential hazardous effect of the proposed construction on air navigation and for mitigating such impacts. The FAA must be notified of the "construction or alteration" of an object that exceeds 200 ft above ground level or within certain ranges from a public or military airport. Part 77 also contains standards for determining obstructions to air navigation, including any object that exceeds 500 feet (152 meters) in height.

Once the notification is made, the FAA will complete an aeronautical study to determine potential impact to air navigation. One of three responses is typically issued: *No Objection* - the construction did not exceed obstruction standards and marking/lighting is not required; *Conditional Determination* – the proposed construction/alteration would be acceptable contingent upon implementing mitigating measures (Marking & Lighting, etc.); or *Objectionable* - the proposed construction/alteration is determined to be a hazard and is thus objectionable. The reasons for this determination are outlined to the proponent.

FAA guidelines also require lights to be installed on wind turbines along the periphery of a wind farm if they are 200 feet (61 meters) or taller. Agency regulations also require that there must not be any unlit gap of more than half a mile (800 meters) between turbines.

- U6. Where in the U.S. are there taller wind turbines than Duke's proposed ones here? How much taller? Are any of them in close proximity to homes?

Response: There are several large wind farms in the United States that use turbines that are greater than 400 feet tall. The largest wind farm in the United States, for instance, is called Snyder Wind, located in Texas with 21 3-megawatt Vestas 90 turbines, each reaching a height of 492 feet from base to blade tip. Patrick & Henderson, the company which built the foundations for the project, provides more details about Snyder Wind in their "P&H Foundations for Wind Turbine Support" report, page 8. The full document is available online at http://earthsys.com/Library/P%20and%20H%20Presentations/P_H-Foundations.pdf. Distance from homes varies significantly for every development, depending on the terrain, population density, and local zoning.