



Why is Apple working on wind turbine technology?

Filing a patent for a new energy storage and generation system, it seems Apple may be looking at new ways to add clean energy to its manufacturing processes.

First discovered by *Apple Insider*, an application filed with the U.S. Patent and Trademark Office in June 2011 details an alternative wind turbine design that generates electricity from converting heat energy instead of rotational energy made possible by the movement of blades.

In standard turbine design, wind energy is used to turn the unit's rotors, which then converts this type of power into electricity through powering machinery or sending it to generators. However, Apple's patent design takes this one step further, and accounts for a problem faced by any system reliant on wind energy — the natural element's variability.

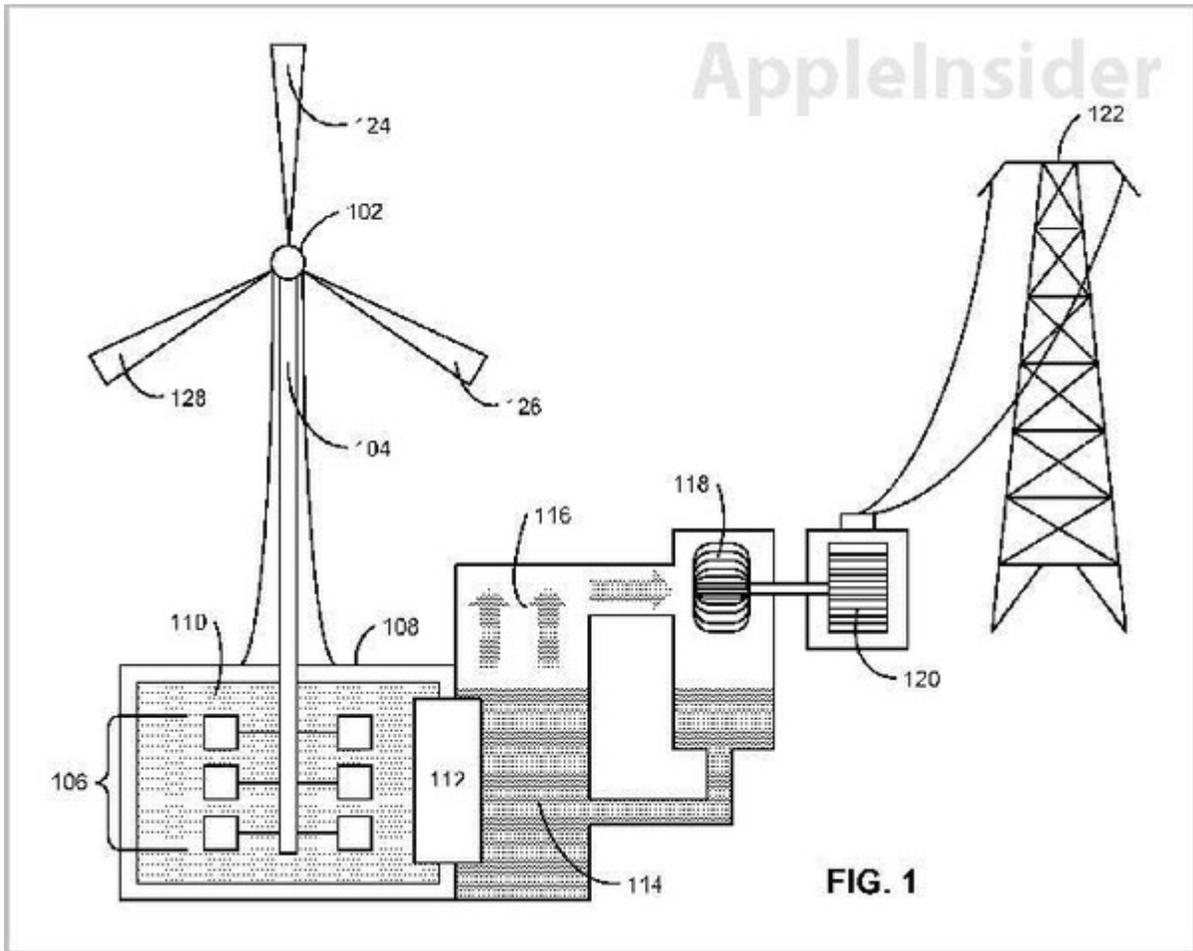
Described as the "on-demand generation of electricity from stored wind energy," the patent application details a mechanism in which rotational energy created by the turbine is used to generate heat, which is then stored in "low heat capacity" fluid. This energy is then transferred into a working fluid which creates steam, which replaces electricity in order to power mechanisms or generators.

As the energy is being stored, heat can be selectively transferred whenever there is a lull in wind activity, keeping machinery going and reducing reliance on back-up power systems.

Apple describes the benefits of the system within the patent application, where the firm says such designs could reduce costs related to wind variation:

The variable nature of wind may interfere with on-demand generation of electricity from wind energy. For example, fluctuations in wind speed may hamper the adequate production of electricity from wind power during periods of peak demand, or conversely, may produce excess electrical power during periods of low demand. In turn, such variability may limit the ability to incorporate large amounts of wind power into a grid system.

How might this kind of technology relate to iPad and iPhone maker Apple? The patent application is not a huge indicator, but as the firm is using clean energy in North Carolina — where it plans to build a 20-megawatt solar farm covering 100 acres — it may be that the company is keen to add additional, renewable energy sources to power its manufacturing chain.



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¹ The source: <http://www.smartplanet.com>