Development of an Electro Thermal Wind Turbine Ice Protection System

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A joint project between Kelly Aerospace Thermal Systems, MW-Innovations, and Vindkompaniet has produced and electro-thermal ice protection system for the wind turbine community. The patented technology was originally developed by Kelly Aerospace Thermal Systems in Ohio, USA for use on aircraft wings and propellers. The technology involves installation and control of a unique heating element that allows de-icing and anti-icing of aerodynamic surfaces. The heating element is applied to the outer surface of the blade and can be installed on turbines old and new. The unique properties of the element allow it to heat up very quickly with small amounts of power allowing minimal power usage to maintain and ice free blade. The first system was installed on a V90 2-Megawatt turbine in September of 2008 at the Bleikevare, Sweden wind farm. This presentation will discuss the ice protection system, steps taken during the installation process and a report on the current status of the wind turbine and future installations.