The Story of Grandpa's Knob:
How Vermont made wind energy history

On October 19, 1941, on a mountaintop near Castleton, Vermont made history in the global wind energy industry. On this date, for the first time in the world, a large-scale wind turbine delivered power into an electric utility's system.

It started almost on a whim. Consulting engineer Palmer Cosslett Putnam was bothered by high electric costs at his summer home on Cape Cod; yet he knew the area received a steady ocean breeze. Putnam thought it should be possible to harness this wind and use it for something productive like electricity. And so began his quest to build such a machine.

In 1939, Putnam approached the S. Morgan Smith Company, manufacturers of hydraulic turbines, with his wind turbine design. The company was interested in diversifying their product line and wanted to explore the possibility of developing large-scale wind turbines for power production. Central Vermont Public Service Corporation was secured as a project partner and would be the recipient of the electricity produced should the project succeed.

Five years of laboratory testing preceded the actual construction of the wind turbine. After several years of laboratory research by countless scientists and engineers, it was determined that the Putnam wind turbine design was ready for field-testing. The 2,000-foot mountain in southern Vermont was chosen as the site where the 1.25-megawatt Smith-Putnam turbine was installed. The twin-bladed 175-foot turbine was designed to withstand winds of up to 115 miles per hour and would generate enough electricity to light 12,500 100-watt light bulbs at full capacity.

After many months of field-testing, the switch was thrown and history was made. On October 19, 1941, the Smith-Putnam turbine, in a 25-mph wind, fed electricity into the grid of the Central Vermont Public Service Corporation.

A main bearing failure in 1943 shut the turbine down for two years (due to wartime shortages). It went back online in early March of 1945.

On March 26, 1945, Palmer Putnam received a call that a blade had failed on the turbine. While not a surprise to those who worked on the project, the blade failure would mean the end of the project since wartime shortages made steel a luxury. Replacing the blade would not have been possible at the time. With coal prices 20% cheaper than the price of electricity produced by the wind turbine, the will to continue the project was not adequate and the project was dismantled.

At the time, the Smith-Putnam wind turbine project was considered a risky, even foolish, venture by some. But in the end, the wind turbine on Grandpa's Knob was considered an engineering success around the world. It helped us understand the behavior of wind. It helped us improve wind turbine technology. And, it proved that the wind could be used to generate electricity.

Today, all that remains of the project are four cement footings where the wind turbine once stood. A chunk of steel on one of the footings is engraved with the names of the men who worked at the site and serves as a reminder of this experiment on a little Vermont mountaintop that had significant impact on how we produce electricity around the world.

"The great wind-turbine on a Vermont mountain proved that men could build a practical machine which would synchronously generate electricity in large quantities by means of wind power…And it proved that at some future time homes may be illuminated, and factories may be powered by this new means."
--Vannevar Bush, scientist and scholar, former dean of engineering at Massachusetts Institute of Technology, 1946