Buoyant Airborne Turbine to harness winds in Alaska

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(Phys.org) —Call it a power-transmitter in the sky. Better still, call it by its official name, the Buoyant Airborne Turbine (BAT) which a company called Altaeros Energies will be launching soon in Alaska to be used in an 18-month test. The $1.3 million BAT project is partially financed by the Alaska Energy Authority's Emerging Energy Technology Fund. The project is being permitted for a site south of Fairbanks. The launch could mark what the team sees as the next generation of wind power. This will be the first planned commercial demonstration of the product; last year, Altaeros tested a BAT prototype in 45 mph winds and at a height of 500 feet at its test site in Maine. The energy-giving BAT is to be deployed 1000 feet up above ground, designed to avoid impact on avian wildlife. BAT will be taking advantage of winds powerful enough

to send back power to earth. Ben Glass, CEO, said the project will generate enough energy to power over a dozen homes.

BAT's engineers also have taken into account severe weather conditions. Altaeros BAT is designed to survive 100+ mph winds and operate in heavy precipitation The system is able to dock autonomously to wait out a storm on its ground station, where it can continue to produce power.

"The world demands cleaner low cost alternatives to fossil fuels," said the company's promotional video, and they are answering that call with this high-altitude wind turbine. BAT uses a helium-filled, inflatable shell for lifting, while high-strength tethers hold the BAT steady and send electricity down to the ground. The lifting technology, said the team, is adapted from "aerostats, industrial cousins of blimps." He said the BAT can be transported and set up without the need for large cranes, towers, or underground foundations that have hampered past wind projects. The company site noted that BAT reduces the second largest cost of wind energy, the installation and transport cost, by up to 90 percent, through its containerized deployment. Also, the device, operating up to 600 meters, generates over twice the energy of similarly rated tower-mounted wind turbines.

Altaeros Energies was founded in 2010 at the Massachusetts Institute of Technology. BAT could draw interest from those in the power and microgrid market, currently served, said the company, by expensive diesel generators. "Target customers include remote and island communities; oil and gas, mining, agriculture, and telecommunication firms; disaster relief organizations; and military bases."

Made of gas-tight and durable fabric, the shell is inflated with helium. The company said the Altaeros BAT will use helium for all deployments. "Modern airships, blimps and aerostats have used helium for decades to lift heavy equipment into the air for long periods of time to film our

sports stadiums and protect our borders. The Altaeros BAT adapts existing industrial-grade fabric technology to achieve a low gas leak rate similar to modern helium inflatables. Hydrogen is also approved and deployed as a lifting gas for aerostats and could be used for future products."

More information:
www.altaerosenergies.com/pressrelease_2014_03.html
www.altaerosenergies.com/faq.html