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► Phase III Success: \$5.7M in Phase III funding

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Alternative energy approaches are gaining respect within the United States and across the industrialized world. As oil prices increase to unheard of levels, investments in alternative energy technologies increase in direct proportion. Fortunately, DOE has been investing in solar power, wind power, biomass energy and other promising technologies for years. One of its major investments started back in 2002 with its \$850,000 Phase II funding of Wind Tower Composites. Under the auspices of the DOE program titled “Low wind Speed Technology Program,” Wind Tower was awarded a contract to conduct research and development for commercialization of its lighter weight, taller and modular wind turbine towers for utility scale, multi-megawatt wind towers.

Wind turbines are generally clustered in “wind farms” that are installed in remote locations with unobstructed, windy conditions. These wind farms involve incorporation of an appropriate sized wind tower with a large scale wind turbine from companies such as Vestas (Danish), Siemens (German) and GE Energy (U.S.). Generally speaking, these turbine OEMs do not subcontract manufacture the towers, which require customization depending upon their location and height. A typical wind farm installation in the mega-watt class can range between \$2M and \$6M per turbine, depending upon its design and location. Increasingly wind towers are growing taller and taller in their attempt to reach greater wind speeds and thus greater power production. Power generation improves between 6% - 12% at tower heights of 100 meters vs. that achievable at 60 meters.

For towers exceeding 100 meters, the size, weight and transportation become major factors in the tower

design (transportation limits are reached around 80 meters for the rotor diameters). Tubular steel has traditionally been used to construct towers under 100 meters, but Wind Tower Composites (now known as Wind Tower Systems or WTS) has developed, through a DOE SBIR award, a Space Frame Tower to address these size and weight issues. Through its innovative modular design it has reduced the tower weight by 20+ percent and the production cost by 25 percent (five patents pending). These weight savings translate into roughly \$50,000 in manufacturing savings per tower. In addition to this improvement in “unit manufacturing cost,” these towers are much easier to transport and install, given their lighter weight and modular design, thereby saving an equivalent \$160,000 in site preparation, transportation and assembly. One of WTS’s five patents addresses its unique “High-Jack crane-less” installation technique.

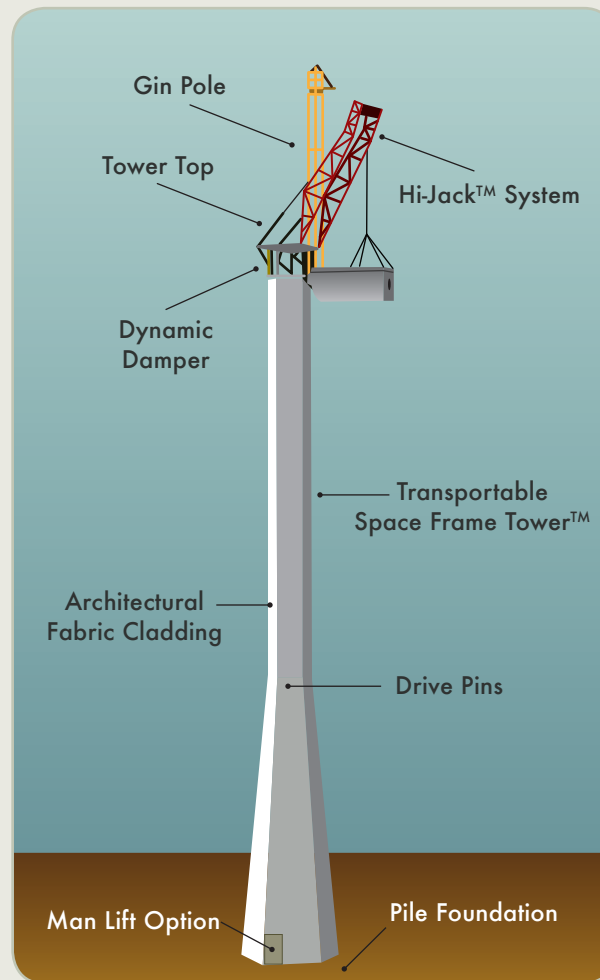


For large installations, the turbine manufacturing companies contract with a wind farm developer for installation of their power generation solution. The developer outsources field erection of the tower and turbine to a third party, which will utilize the proprietary High-Jack system for installation.

WTS's innovative, taller wind turbine towers and crane-less installation systems enable modular, economically transportable towers to be installed for projects that would be difficult using conventional tubular towers and crawler cranes. The ability to economically capture stronger winds at greater heights further enables development of more sites on land. Both benefits result in large increases in suitable land areas for large and small projects, enablement of smaller wind farms closer to load, and reduction in transmission constraints. For remote locations such as the less industrialized nations and islands, installation and maintenance risks are reduced. Technologies providing these solutions are estimated to increase the worldwide developable land area for wind energy by 10 to 20 times.

Located in northern Utah, the company was founded in 2002 as "Wind Tower Composites, LLC" with a mission to research, develop and commercialize lighter weight, taller and modular wind turbine towers. In addition to the Department of Energy award of \$850,000, an additional \$1.5M matching grant from the California Energy Commission enabled construction, testing and certification of its first commercial turbine tower and the demonstration of the crane-less installation method. Based on this certification and the company's clear leadership position, in May 2007 Wind Tower Composites was acquired by Wasatch Wind, Inc. through a \$3.6M Series A funding from DFJ Element, a top-tier renewable energy investment firm. DFJ Element, now know as Element Partners, invests in emerging companies bringing innovative solutions to environmental and resource constraints in energy, water and other large industrial and commercial markets.

Tracy Livingston, director and CEO of Wasatch Wind, said that the benefits of the DOE commercialization process in preparing his company for the investment meetings with DFJ Element were key. "The DOE sponsored Dawnbreaker Commercialization Assistance Program (CAP) provided an excellent process for development of our company's value proposition," he explained. "The formal presentation that we developed for the DOE Forum was an excellent



The illustration to the left is of the innovative WTS Space Frame Tower and the Hi-Jack System.

summary of our technology and business benefits. We have used that presentation over 20 times in our fundraising efforts." Livingston further emphasized the need to follow the disciplined CAP planning process for development of a comprehensive business plan. "It was through this back-and-forth review process that our management team developed the three primary values of our technology. These values are providing lower cost installations, increasing wind utilization over 100 meters in height and lastly, making expansion of wind farms viable in remote areas for economical implementation."

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