



Micro-Grid Training and Demonstration System

With the current economic crisis causing lay-offs and shortages of work for many people, keeping power in the home affordable is hard to come by these days. But one group of engineers at the Texas Center for Applied Technology (TCAT) has come up with a solution to help those in need. They have created a Micro-Grid Trailer, tailored to utilize solar, wind, and propane gas to provide power 24/7 to disadvantaged people along the Texas/Mexico border. The need for off-grid generation of power would significantly improve the quality of life for residents at a low enough cost to make economic sense, especially for residents living in poverty or near poverty situations.

The Micro-Grid Trailer was also built to help train and be an educational resource to community colleges, vocational training programs, high school STEM education programs, and other training programs as well. As the green industry continues to flourish, the need for trained professionals is becoming a real necessity for many employers. The Micro-Grid Trailer has a control system to monitor energy—for training purposes—an air conditioning unit to cool the compartment, as well as a generator and storage batteries inside the trailer.

The uses of this portable energy saving trailer are exponential due to the power output that can save both small communities and big businesses money on their power bills. One such demonstration identified that the temporary power provided to residents would be at rates less than 24 cents/kWh at current fuel prices compared to the Texas state average of \$10.94/kWh¹.

Currently, TCAT is moving to market their product to fortune 500 companies and residential communities that could benefit from the savings in power usage and utilize the Micro-Grid Trailer to operate cafeterias, lounges, and other areas that need 24/7 power. Eventually, they hope that the trailer will become a mainstream product to all neighborhoods and are currently looking for investors.



¹ http://www.eia.gov/cneaf/electricity/epm/table5_6_a.html

TEXAS CENTER FOR APPLIED TECHNOLOGY

There are many problems that require the careful and proper integration of applied technologies to find solutions. The Texas Center for Applied Technology (TCAT) was created to focus on these specific problems and to develop effective and efficient solutions. TCAT's core competency is the innovative application of existing technologies and advanced research to solve complex real-world problems.

TCAT's primary objective is to apply and test technologies to address targeted problems and engage basic research as required. TCAT has employees in a variety of locations with the ability to perform research that cuts across multiple technologies, disciplines, and cultures. The Center's employees are knowledgeable regarding customers' requirements and are ready to respond effectively to provide the best value for the customers' needs including expertise in technology insertion, technology assessments, and test and evaluation.

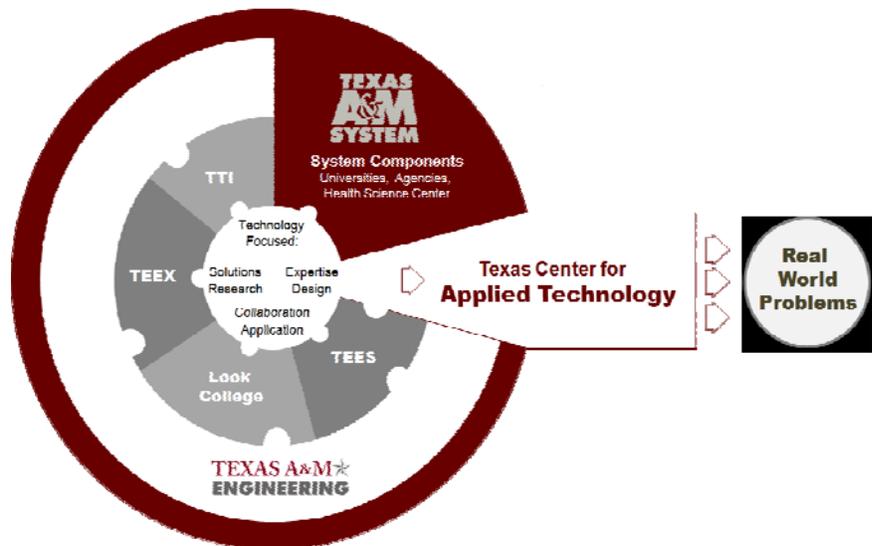
TCAT is part of the Texas A&M Engineering Experiment Station (TEES), a member of The Texas A&M University System. The A&M System is one of the largest and most comprehensive systems of higher education in the United States. Through a statewide network of eleven university campuses, seven state agencies, and a comprehensive health science center, the A&M System educates more than 120,000 students on its university campuses, conducts more than \$780 million in research, and reaches another 22 million people through service each year. TEES is an engineering research agency for the state of Texas and conducts over \$147 million in research annually. Because of the Center's position within the Texas A&M Engineering program, TCAT's expertise can easily be extended by rounding out its team with world class faculty researchers, as appropriate. TCAT is in an excellent position for collaboration not only with The Texas A&M University System components and their customers but with other universities, institutions, centers, and industry.

TCAT'S CORE COMPETENCIES

Energy Sustainability ★ Environmental Sustainability
Manufacturing & Systems Engineering ★ Information Technology ★ Modeling & Simulation
Technology Insertion ★ Test & Evaluation

TEXAS A&M ENGINEERING

Texas A&M Engineering consists of the Dwight Look College of Engineering, and three engineering agencies, including TEES: Texas A&M Transportation Institute (TTI) conducts research and professional education in all modes of transportation. The Texas A&M Engineering Extension Service (TEEX) works to develop a highly skilled and educated workforce and enhances public safety through training, continuing education, and technical assistance.



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