



**Background:** Texas Engineering Experiment Station, TEES, is the engineering research agency for the state of Texas. As part of the Texas A&M University System, TEES provides our clients with access to the full expertise of the 900 research scientists, engineers, and professional staff of the University. TEES' mission is to identify and conduct research in areas critical to the state's economic development and quality of life; to promote new technology and entrepreneurship; to leverage and network human, physical, and financial resources; and to enhance and strengthen education in Texas. TEES addresses the specific technological problems our society now faces and will face in the future.

Approximately 400,000 citizens of the State of Texas live in the "Colonias" along the Texas-Mexico border. Many of these communities have no water, waste water, or electrical service due to unscrupulous developers.

Texas Congressional District 28 serves 4 border counties along the Texas-Mexico Border and 5 additional counties in south central Texas. The FY10 Department of Energy (DOE) appropriation bill authorized \$550,000 to provide a continuation of the projects funding by prior congressional marks and the Texas State Energy Conservation Office (SECO) to provide temporary electric power micro-grids in border Colonias not served by the electric grid. The 2009 session of the Texas Legislature has modified Texas law such that the issues that prevented grid connection in Colonias has been resolved and the Colonia residents are now on track to connect to the existing grid.

**Project Description:** To provide 24 hour continuous power to un-electrified communities to improve their standard of living. These Colonias communities can range from one to fifteen homes and will be within 1 square mile. The system will create temporary "micro-grids" to Colonia residents until grid connection is available. These "micro-grids" will provide minimum amounts of electrical power to meet basic needs of the community. These micro-grids will utilize renewable energy and include energy storage.

**Project Limitation:** Economic use of all generations sources for 24 hours.

**Specific Goals for Presentation, Communities served:** Team will identify current needs for electrical energy in Colonias and present an objective design that will start to satisfy the need.

**Considerations:** Cost, funding, availability, space requirements, legal land issues, permit requirements

**Resources:**

Texas State Energy Conservation Office - <http://www.sos.state.tx.us/border/colonias/>

Texas Observer Aug 8, 2008 "Let There Be Light" - <http://texasobserver.org/article.php?aid=2817>  
<http://www.youtube.com/watch?v=1ozapmuHL2E>

Center for Housing and Urban Development - <http://chud.tamu.edu>

Texas Rio Grande Legal Aid (TRLA) - [www.trla.org](http://www.trla.org)

Texas Engineering Experiment Station - <http://tees.tamu.edu/>

Texas Center for Applied Technology - <http://tcat.tamu.edu/>

Department of Energy - <http://www.energy.gov/>