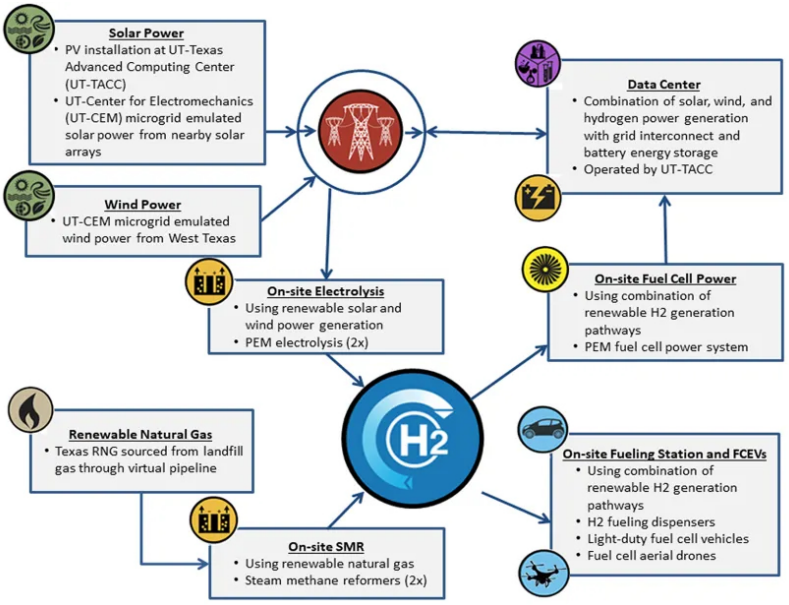
The University of Texas at Austin
Center for Electromechanics
Cockrell School of Engineering

H2@Scale in Texas and Beyond



Hydrogen Research and Demonstration Facility at The University of Texas at Austin's J.J. Pickle Research Campus

The Center for Electromechanics (CEM) through a Department of Energy (DOE) sponsored H2@Scale demonstration project – "Demonstration and Framework for H2@Scale in Texas and Beyond" – is developing a first-of-its-kind hydrogen technology proto-hub with multiple forms of renewable hydrogen generation and end users. The project partners include Frontier Energy (the prime applicant), GTI Energy, along with numerous industry partners across the entire hydrogen value stream invested in developing a hydrogen economy in Texas. Industry partners include Air Liquide, CenterPoint Energy, Chart Industries, Chevron, ConocoPhillips, Hitachi Energy, Low-Carbon Resources Initiative, McDermott, Mitsubishi Heavy Industries America, OneH2, ONE Gas, ONEOK, Shell, SoCalGas, Texas Commission on Environmental Quality, Toyota, and WM.

The hydrogen proto-hub site will include hydrogen generation from steam methane reformers using landfill renewable natural gas and from electrolyzers using variable renewable power generation from wind and solar sources. A hydrogen storage and distribution system will deliver hydrogen to two end use applications at The University of Texas at Austin's J. J. Pickle Research Campus (PRC). The primary end user is the Texas Advanced Computing Center (TACC) through a stationary fuel cell power system that will provide low carbon energy to the computing center. The site will also include dual hydrogen fueling capability with both 700 bar and 350 bar vehicle dispensing that will support a fleet of Toyota Mirais and fuel cell drone operations on the DOE project.

To support the expected growth of the emerging global hydrogen economy, the vision for the proto-hub is to become a longstanding showplace, educational resource, and living laboratory for hydrogen technology. CEM plans to leverage this site to continue collaborative hydrogen energy systems research with UT faculty and researchers, with outside research organizations and labs, and with industry partners.

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