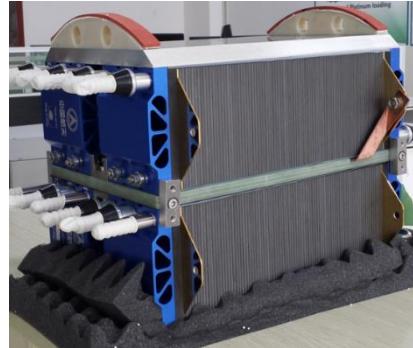




Advanced Fuel Cell Demonstration and Commercialization at NASA Kennedy Space Center

Public-Private Partnership for Technology Commercialization

The Advanced Transportation Dual-Fuel Fuel Cell Development and Demonstration project will conduct pre-commercialization development, demonstration and test activities on Bing Energy's prototype Modular Dual-Fuel (Hydrogen/Oxygen) Auxiliary Power Unit (APU) Range Extender. This system provides ultra-high power density by using Bing's proprietary Bucky paper technology and hydrogen and oxygen fuel sources. The commercial product will be branded as "EnerFuel2", a modular unit used in zero-emission fleet vehicles that enables all day operations without refueling or charging.



Transportation, Energy and Space Technology Hub (TEST Hub)

The work will be performed at the Transportation, Energy and Space Technology Hub (TEST Hub) being established by Energy Florida and its partners at the NASA John F. Kennedy Space Center (KSC). The TEST Hub hydrogen and fuel cell projects will be co-located with KSC's Integrated Ground Operations Demonstration Unit (IGODU), which is developing new cryogenic systems and performing other hydrogen related research & development activities. The TEST Hub provides an interface and services that enables companies, universities and agencies to utilize KSC facilities and expertise for energy related research, development, demonstration and test activities. Activities will be conducted by Energy Florida staff and ITB, Inc as a subcontractor. ITB also manages NASA's agency-wide Technology Evaluation for Environmental Risk Mitigation (TEERM) program. Energy Florida, KSC and ITB have coordinated with the U.S. Department of Energy to secure hydrogen and fuel cell assets, including a \$2 million Proterra 2.0 fuel cell bus (pictured), a hydrogen vehicle fueling system, and a set of stationary fuel cell power units as the foundation of a new dedicated hydrogen and fuel cell development and commercialization capability.

The project has four major objectives:

1. Establish standards and processes for Energy Research, Development, Demonstration & Testing at Kennedy Space Center.
2. Test and demonstrate the Bing Energy fuel cell system.
3. Develop resources and plans for next step operational demonstration and manufacturing activities.
4. Establish the TEST Hub as a permanent operational capability and program.



Alignment with State and Federal Research Funding and Economic Development Priorities:

The TEST Hub's capabilities are closely aligned with requirements of the U.S. Department of Energy and commercial fuel cell and hydrogen technology developers. The DOE Fuel Cell Technology Program (FCT) is emphasizing commercial transportation applications for fuel cell technologies (primarily serving in tandem with electric charge systems as a range extender), and states that technologies have been sufficiently advanced to be cost competitive with existing systems – with the primary requirement being the development of pathways to market. Program management and project support funding will be sought from the DOE Fuel Cell Technology and Technology to Market Subprogram and the Federal Transit Administration once the TEST Hub is operational, supplemented with use charges paid by commercial technology developers. The project advances a number of common local, state and Federal goals:

- Implementation of the Clean Energy element of the Space Florida 2020 and Workforce Florida strategies.
- Pathfinder for commercial utilization of KSC capabilities for energy technology development, demonstration & testing.
- Advancing technology diversification goals that can provide new opportunities for KSC contractors.
- Foundation for future U.S. Dept. of Energy and U.S. Dept. of Transportation funded projects at KSC.
- Leveraging and preserving KSC hydrogen and fuel cell capabilities for deep space missions.
- High visibility success story that can help attract new businesses.
- Grow existing success stories – support Bing Energy's pathway to new in-state manufacturing facilities.

For more information regarding this project: please contact Mike Aller, Executive Director, at 321-205-4533 or michael.aller@energyflorida.org, or Tim Franta, Director of Special Projects, at 321-795-8771 or tim.franta@energyflorida.org.