Peregrine Turbine Technologies Announces Long Duration Energy Storage Solution for Clean Power

PTT and Cianbro Corp. announce a Memorandum of Understanding outlining their plan to field a Peregrine LDES system in Cianbro's solar PV field in Maine

Peregrine Turbine Technologies and Cianbro Corporation Announce plans to field the World's first sCO2 enabled, phase change long duration energy storage system (LDES)

WISCASSET, MAINE, UNITED STATES, March 6, 2023 /EINPresswire.com/ -- Peregrine Turbine Technologies and Cianbro Corporation today announced a Memorandum of Understanding (MOU) outlining their collective plan to field a Peregrine long duration thermal energy storage (LDES) system in Cianbro Corporations' solar PV field in Pittsfield, Maine to demonstrate the systems commercial capabilities and performance. Peregrine's sCO2 enabled LDES system is scalable to 10 or more MWhr using the Company's modular storage components.

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>
> *Peter Vigue, Chairman*
> *Cianbro Corporation*

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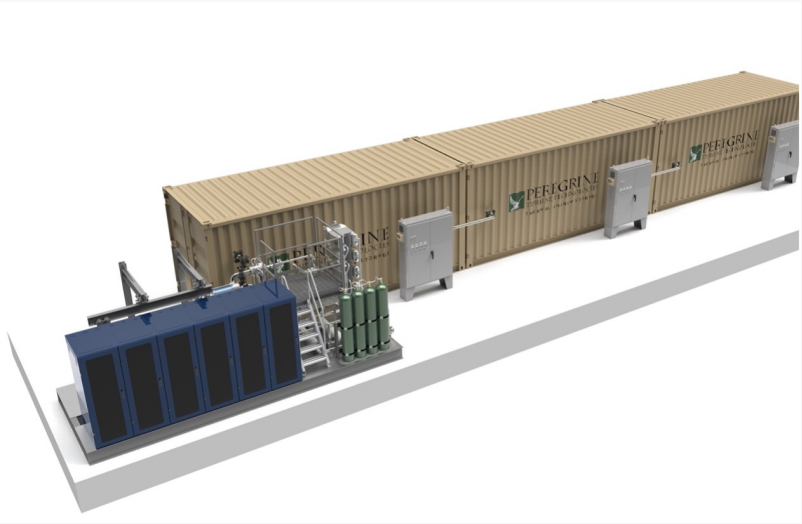
IN FRONT OF AND BEHIND THE METER– ANYTIME. ANYWHERE.

Peregrine Turbine Technologies has combined and demonstrated its breakthrough sCO2 energy conversion technology with a newly developed thermal storage medium, which uses phase change technology to store significant energy as heat at high round trip efficiencies, and in a safe and

easy manner without capacity degradation or the costly and toxic elements of current Li-Ion battery technology.

The rapidly increasing share of renewables in the power mix has brought with it many new challenges, not the least of which are structural strains on existing power-generation, transmission, and distribution infrastructure. New flows of electricity and the inherent variability of renewables are increasingly resulting in imbalances in supply and demand, changes in transmission patterns, and the potential for greater system instability.

Development of Efficient, cost effective, long-duration energy storage technologies (systems that deliver 10+ hours of duration) have become essential to effectively support the continuing wide scale deployment of renewable energy sources and the continued transition to decarbonized energy systems.



PTT's breakthrough sCO2 energy conversion technology with a newly developed thermal storage medium, uses phase change technology to store significant energy as heat in a safe and easy manner

PEREGRINE
TURBINE TECHNOLOGIES

While shorter duration storage is currently being installed to support today's level of renewable energy generation, longer duration storage technologies are needed. Peregrine's less expensive and more efficient storage will make it easier to capture, store and deploy renewable clean energy for use when energy generation is unavailable or lower than demand. Peregrine's LDES system can also provide similar support for other clean energy generation sources such as evolving micro modular nuclear energy and biomass generated energy during times of shifting demand.

Peregrine's flexible and configurable power block and modular thermal energy storage systems enable value stacking of services that allow a level of optimization in newly developing capacity and storage markets for grid services.

The Cianbro field is currently the largest solar energy facility in Maine and within the jurisdiction of ISO New England, which keeps electricity flowing across the six-state New England region. The

current field consists of 40,300 solar panels erected on 57 acres of a 115-acre parcel and has the capacity to send up to 9.9 megawatts of AC electricity to the grid during ideal conditions, enough to supply 6,500 homes at peak generation.

David Stapp, COE/CTO and Co-Founder of PTT stated that “The Company has developed and is preparing to field its proprietary, sCO2 enabled, energy conversion and storage systems capable of producing and storing renewable power to make it dispatchable during peak demand after daylight hours. We are particularly grateful for the support of Cianbro Corporation and the opportunity to demonstrate our advanced generation and storage technologies in a commercial environment”.

Peter Vigue, Chairman Cianbro Corporation, commented: “The placement of the advanced Peregrine sCO2 enabled long duration thermal energy storage system in our Pittsfield solar PV field is another step in an on-going relationship between the two companies. We believe that PTT’s technologies can be transformational in both commercial and military applications. We are pleased to have the opportunity to assist them with moving it into commercial application”.

ABOUT PEREGRINE TURBINE TECHNOLOGIES (PTT)

PTT is a Maine limited liability company formed in April 2012 focused on the development and deployment of advanced sCO2 (supercritical carbon dioxide) turbine power generation, energy storage and propulsion systems in line with the State of Maine’s mission to “Innovate Here, Make Here, Deploy Everywhere”.

The Company has received awards from the Air Force Research Lab (AFRL), the Office of Naval Research (ONR), and the Maine Technology Institute (MTI) in support of its leading development of Brayton cycle sCO2 gas turbine development for energy conversion. PTT also holds a long-term Combined Research and Development Agreement (CRADA) with Sandia National Laboratories for support in the development, testing, and de-risking of its sCO2 turbomachinery.

PTT’s senior leadership team collectively has over 250 years of successful, demonstrated management of complex technologies, systems, products and operations with Companies ranging from GE, Rolls Royce, Pratt and Whitney, Sundstrand, and Solar Turbines to Allied Signal, General Signal, Great Northern Paper Company and American Capital.

The Company is built on the principles of fact-based decision making and collective best thinking, providing it with a strong capacity and experience base to lead this emerging technology from concept through market penetration.

Additional company information can be found at peregrineturbine.com.

ABOUT CIANBRO CORPORATION

Cianbro is Maine’s largest construction company, with more than 4,000 employees and annual revenues exceeding $1Bn.

It is one of the largest, most diverse, successful, open shop, 100% employee-owned construction and construction services companies in the US. Cianbro and its subsidiaries have operational facilities in Maine, Massachusetts, Connecticut, Maryland, New Jersey, South Carolina, Illinois, Texas, and Washington.

Working with a fleet of 3,500-owned equipment units, Cianbro provides construction services from concept through implementation and works start-up, commissioned, and turn-key operations to markets such as building, industrial and manufacturing, infrastructure, and power and energy industries.

Cianbro manages and self-performs civil, structural, mechanical, electrical, instrumentation, telecommunications, thermal, fabrication, and coating. The company was founded in 1949 by the Cianchette Brothers.

Additional company information can be found at cianbro.com

Cianbro and PTT are both Maine/USA-centric companies.

Robert Brooks
Peregrine Turbine Technologies
email us here
Visit us on social media:
LinkedIn
