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PRESS RELEASE

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Peregrine Turbine Technologies Establishes Nuclear Energy Subsidiary

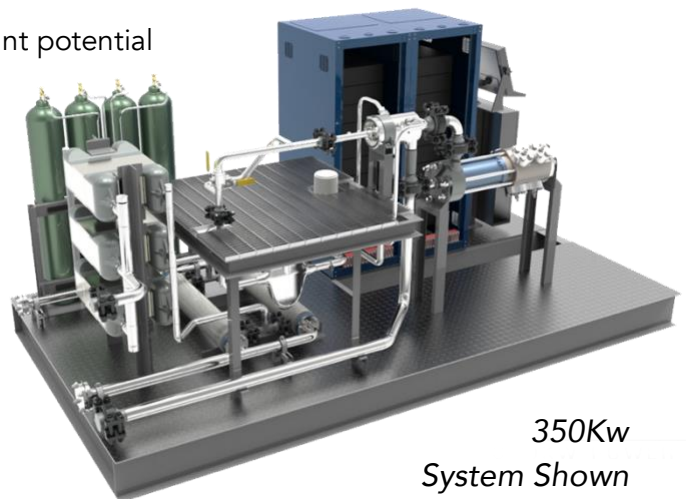
Wiscasset, ME– July 27, 2023 – Peregrine Turbine Technologies today announced the formation of its second Energy Subsidiary, [PTT Nuclear Energy Systems \(PTT NES\)](#).

Peregrine Turbine Technologies (PTT) holds the world’s most efficient power conversion heat engine, the breakthrough energy conversion (heat to electricity) answer to efficient utilization of microreactors, and small modular nuclear reactors.

The development and evolution of a new family of safe, highly efficient, very small nuclear reactors and micro modular nuclear reactors has progressed substantially over the past decade, is accelerating rapidly, and has now become a very high energy surety priority for the US DoD, as well as for carbon reduction/elimination in energy intense applications such as data centers and steel, cement, and other industrial processes.

Peregrine Turbine Technologies has identified significant potential and opportunity for its breakthrough energy conversion technologies in the accelerating VSMR (very small modular reactor) and MMR (micro modular reactor) programs (350 Kw – 10 MW), and a clear intermediate term opportunity in the SMR (small modular reactor) 30 MW to 100 MW class range.

The Company is working to field a family of its’ proprietary modular sCO₂ energy conversions systems with initial capabilities ranging from 350Kw to 10 MW.



*350Kw
System Shown*

The Company's sCO₂ (supercritical carbon dioxide) enabled energy conversion system is 1.5X+ the conversion efficiency of steam with MANY other "mission critical" advantages including dry cooling required, black start capability, size, and maintenance.

Correspondingly, it is 3X+ improvement over conversion efficiency of Air Brayton Cycle engines, and again with MANY additional "mission critical" advantages.

Peregrine's sCO₂ energy conversion technologies are a strong fit for small modular, micro modular, and mobile nuclear reactors. Some of the advantages of the Company's sCO₂ systems vs. conventional steam conversion include:

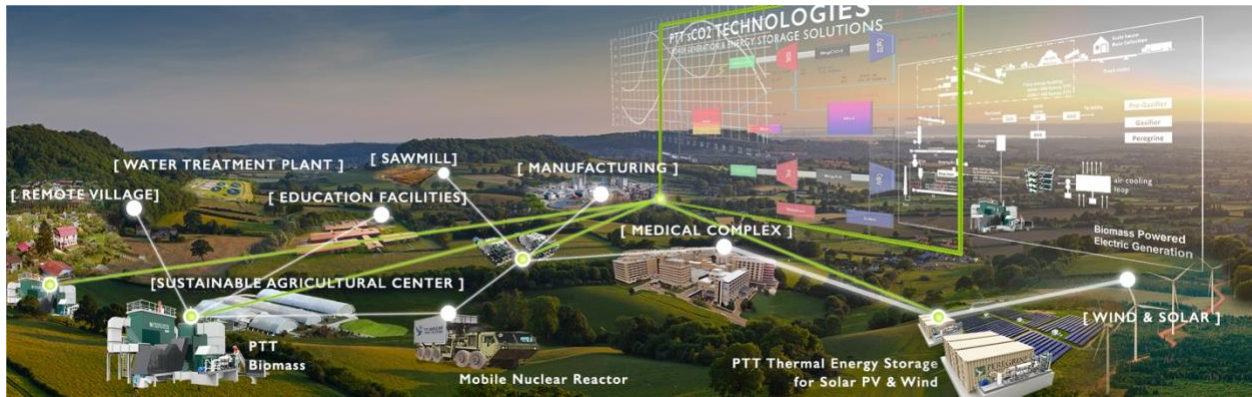
- Higher Efficiency – 45% for Peregrine vs. 32% for conventional steam
- Lower cost/MW
- Dry Cooling
- Oil-free
- Black start capability
- Modular construction at component and system levels
- Significantly fewer moving parts/wear parts (increased reliability/availability)
- Enhanced field supportability with cartridge-style, field replaceable turbomachinery
- Operates at higher temperature (750C) allowing optimization of reactor (smaller size or greater output than with steam conversion)
- Smaller physical footprint (30X greater power density)
- Lower skilled in-field service support and short service to run times
- Does not require licensed operator as no boiler and no fluid phase change
- Increased load following capabilities
- Lower first costs
- Minimized in field construction requirements and time
- Strong fit for DOD/DOE base energy surety, remote communities, and industrial applications with limited support of infrastructure.

Parameter	NUCLEAR POWERED CONVERSION CYCLE		
	PTT sCO ₂	Conventional Steam	Air Brayton Cycle (Air/NG)
Specific Power: Design achieves high specific power	✓	⊖	⊖
Efficiency: High efficiency at low TIT	✓	⊖	⊖
Dry Cooling: Closed cycle system	✓	✗	✓
Packaging: Small footprint	✓	✗	✓
Number of Parts: Small and simple in construction	✓	✗	✗
Maintainability: Modular- packaged as field replaceable cartridge	✓	✗	✗
Reliability: High reliability & fewer parts	✓	⊖	✗
Maturity: TRL	⊖	✓	✓

Assumptions:
Reactor Collant He • Intermediate HX to transfer heat to the conversion cycle • Gas turbine inlet is near ambient pressure

The PTT sCO₂ conversion system has it DNA roots in Sandia National Laboratories' sCO₂ conversion development program accelerating the commercialization of "the conversion technology" for the coming Advanced Nuclear Reactor designs.

Peregrine Turbine Technologies, LLC – “Enabling Access to Energy and Energy Surety via Solutions Not Possible Before Now”.



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 (thermal and electrical) capable of producing and storing power at or near the point of use, operating on local/regional fuels and heat sources including nuclear, with minimal transmission and distribution infrastructure and the associated line losses inherent in central or remote generating plants.

We are especially excited to announce the formation of PTT Nuclear Energy Systems as it will increase our ability to provide additional focus, resources, and leadership to this important and rapidly growing market segment. PTT NES is intended to further support discussions and collaborations with evolving modular nuclear energy developers.”

He also noted that “the Company plans to follow the nuclear conversion Merlin Series of [sCO₂ Conversion Systems](#) with a scaled 10MW Modular System”.

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.

The Company's transformational technologies are expected to bring large-scale performance and capability advances not previously possible with current technologies.

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, Sandia National Laboratories, 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 commercialization.

Additional company information can be found at peregrineturbine.com.