PEREGRINE
TURBINE TECHNOLOGIES

NEWS RELEASE
OCTOBER 11, 2021

BREAKTHROUGH BIOMASS POWER GENERATION TECHNOLOGIES

WISCASSET, ME. ----
Peregrine Turbine Technologies, LLC today announced the formation of an international collaboration to field a commercial grade, sCO2 enabled biomass fueled, pilot plant. The commercial grade First-of-Kind system will demonstrate breakthrough, sCO2 enabled, biomass energy conversion and CHP technologies operating at a commercial level at NXTGN's planned biomass campus in White River, Ontario, Canada.

Commercial Level Demonstration of Advanced Biomass Conversion and Fuel Systems: Peregrine Turbine Technologies, NXTGN, and KMW Energy are working together to field a first-of-kind, 1 MWe biomass fueled system at White River, Ontario, Canada in Q1 2023.

> *"At nearly 2X the electric efficiency of current best technology biomass fueled systems (electrical, heating and cooling), locally produced bioenergy becomes directly competitive with other mainstream energy sources and without subsidies. Sustainable biomass power can be produced at or near the point of use and configured to specific application requirements, saving infrastructure and nonvalue added capital costs, resulting in lower Levelized Cost Of Electricity (LCOE) and which is also dispatchable".*
> ***-Robert Brooks, Co-Founder and Chief Business Development Officer for Peregrine Turbine Technologies.***

Worldwide Shortage of Low-cost Sustainable Energy: Access to energy, more specifically low-cost, clean energy, is a "force multiplier" in the advancement of quality of life. "Energy Poverty" exists in many areas globally, both in OECD (Organization for Economic Cooperation and Development) and non-OECD nations.

Access to affordable, sustainable energy is often a function of logistics, accessible fuel sources and infrastructure, with remote locations most frequently being at particular disadvantage. Fueled by technological advances, wind, solar and bioenergy will

continue to lead the growth in sustainable energy sources and improve access, affordability, and dependability for remote as well as urban locations.

Advanced Technologies, New Fuel Solutions, and Modular Conversion Systems Combine for a Breakthrough Solutions: Breakthroughs in energy conversion efficiencies and advancements in bio-fuel technologies, in combination with modular biomass combustion systems, are positioning to support and accelerate the projected rapid growth of renewables.

Peregrine's highly efficient super-critical carbon dioxide (sCO2) energy conversion system, integrated with KMW Energy's modular biomass combustion system, operating on Next Gen BioEnergy Inc.'s (NXTGN's) and ERS's advanced biomass pellet fuels, are combining to bring strong, affordable, sustainable, CHP solutions to Canada's currently diesel powered First Nation communities and remote mining operations.

NXTGN's objective is for the BioEnergy Campus to demonstrate the synergistic value of biomass CHP/co-generation to provide electric power, thermal energy (heat) and food production as a template for remote First Nations, mining, and community district energy systems.

The system will be operating both on proprietary ERS Fuel's renewable solid fuel ersfuel.com as well as conventional woody biomass. NXTGN will be providing sales and marketing support for the Peregrine sCO2 energy conversion systems to Canada's First Nation communities and remote mining operations.

ABOUT PEREGRINE TURBINE TECHNOLOGIES, LLC:

Peregrine Turbine Technologies, LLC (PTT) is a privately owned, Maine-based, turbine technology company founded in 2012. It has developed the world's first high-speed/ high pressure ratio sCO2 turbine engine. Its advanced turbine is a heat engine that can operate from high quality heat sources or air-combustible fuels, including biomass, biogas, NG, modular nuclear and concentrated solar. PTT's turbine has:

- 30X the energy density of steam
- Provides a 25% - 60% improvement in fuel burn and emissions over other gas turbine engines.

The Peregrine sCO2 Turbine is a modular system with extraordinary CHP and demand-response capabilities. When integrated with KMW's modular combustion system, the system has 2.7 and 1.7x Efficiency vs Best Available Current ORC and Steam Technologies

> *"We are delighted to have the participation and strong collaborative involvement of both Protocol Energy/NxtGn and KMW Energy", notes David Stapp, CEO/CTO and Co-Founder of Peregrine Turbine Technologies, LLC.*
>
> *"We are also grateful for the past and on-going support from Senator Susan Collins,*

Maine Technology Institute, Sandia National Laboratories, the US Air Force Research Laboratory and the US Office of Naval Research. We believe that Peregrine's biomass fueled sCO2 systems are positioned to bring strong, cost effective and environmentally friendly solutions to the many energy disadvantaged areas around the globe".
-David Stapp, CEO/CTO and Co-Founder, Peregrine Turbine Technologies, LLC.

NEXTGEN BIOENERGY INC. ("NXTGN")

NXTGN is a privately owned, bio-energy developer headquartered in Ontario, Canada. The Company is a biomass project developer focused on its' proprietary engineered pellet manufacturing facilities in eastern Canada, with off-takes to the Canadian, European, and the US sustainable energy markets.

NXTGN and PTT have executed a Memorandum of Understanding between the two companies for the location, demonstration, and on-going operation of a 1 MWe Biomass CHP plant at a biomass campus planned in White River Ontario, Canada. Additionally, NXTGN will be providing sales and marketing support for the Peregrine sCO2 energy conversion systems to Canada's First Nation communities and remote mining operations.

Regarding the collaborative development and pilot initiative:

"We have been collaborating with PTT for almost two years and are now at the point of configuring a most unique carbon neutral bioenergy demonstration facility. This bioenergy campus will demonstrate the synergistic and carbon neutral provision of heat, power, and year-round food production as an alternative to diesel fossil fuel in remote communities. PTT is the innovative foundation to, and the operational heart of the BioEnergy Campus"
-Thomas Logan, Executive Chairman NextGen BioEnergy Inc.

KMW BIOMASS ENERGY SYSTEMS CONSORTIUM:

KMW Energy, a member of Nor-Arc/Normex/KMW Energy consortium, is a leading manufacturer of biomass combustion systems boilers and heaters with over 70 years of experience. KMW's proprietary reciprocating grate combustion system is the industry's most proven, reliable, cost-effective solution to converting biomass and waste derived fuel into energy. KMW custom designs and fabricates complete biomass boiler systems including fuel handling, combustion system, heat recovery boiler, emission control and control systems. KMW also supplies complete CHP plants including steam turbines, ORC turbines, condensers, and cooling systems. The KMW modular design includes shop-built combustor and package boilers, greatly reducing the cost and complexity of your boiler project.

KMW has extensive experience supplying boiler systems to sawmills, hospitals, schools, pulp and paper mills, power utility plants, cogeneration facilities, district heating systems

and greenhouses. The KMW combustion system operates with the greatest fuel flexibility, with systems operating on wet bark up to 60% moisture, C&D, RDF, sludge, biosolids and agriwaste.

Nor-Arc/Normex/KMW Energy consortium is a leader in the development, fabrication and application of advanced biomass clean energy systems with a strong history of applications in district energy, hospital, sawmill and school applications. Deploying this "first-of-kind" PTT 1 MWe sCO2 enabled Power Generation System, operating on NxtGn advanced biomass pellets and other woody biomass fuels in a utility grade biomass application, accelerates its' time to commercialization. KMW will be supplying modular biomass combustion systems in collaboration with PTT for NxtGn and other applications. The Nor-Arc/Normex/KMW Energy consortium will also be directly advancing the sales and installation of PTT sCO2 biomass systems throughout the Canadian provinces.

> *" KMW, together with PTT, have developed an innovative remote power generation solution, eliminating the need for expensive and operator intensive conventional ORC or high pressure steam power generation equipment. Through precise combustion control and a proprietary sCO2 heat exchanger the system can achieve unparalleled electrical generation efficiency. With high efficiency, closed loop cooling system and no stationary engineer required, the KMW/PTT system is ready to displace diesel power across Canada. The demonstration at the NxtGn energy campus is a major milestone in proving the efficiency and ease of use of the groundbreaking technology."*
> ***-Eric B. Rosen, CEO KMW Biomass Energy Systems.***