RadMax Technologies Announces Receipt of Modified Two-Phase Steam Cycle Patent

Spokane, Washington, August 10, 2022 -- REGI U.S., Inc. (“REGI” or “RGUS” or "the Company") (OTC:RGUS). The Board of Directors, Regi U.S., Inc. and its wholly owned subsidiary RadMax Technologies, Inc. (RadMax) are pleased to announce the receipt of US patent “Modified Two-Phase Cycle” (US 11,359,517 B2).

This patent validates the use of RadMax two-phase expanders and compressors to improve steam plant Rankine cycle efficiency by 7% - 16% over current practices potentially saving billions in fuel costs and reduced emissions annually. Additionally, the implementation of RadMax two-phase devices for industrial steam processes can recover significantly more energy than current systems thereby increasing process efficiency and reducing costs and CO_2 footprint.

The Rankine steam cycle has been used for decades as the primary electricity generation engine for efficient, steam powered plants. Various means have been employed to increase cycle efficiency. However, current technology and equipment face operational limits because of the need to operate turbines with dry steam and to operate pumps with liquid water. No such limits exist when using RadMax patented two-phase, positive-displacement, compressors and expanders which can operate under the steam dome.

According to the U.S. Energy Information Administration (EIA), about 55% of electricity produced in the U.S. was generated by steam power in fossil fuel and nuclear power plants in 2020. Analyses show that replacing water pumps and low-pressure turbines with RadMax two-phase compressors and expanders can potentially improve power plant overall steam cycle efficiency by about 7% over the more efficient steam plants, or by about 16% over the average plant. The EIA estimated in 2016 that each 1% improvement in cycle efficiency could annually save about 0.4 Quads (0.4 quadrillion BTUs) of fuel resulting in about a 20 million metric tonnes reduction in CO_2 emissions.

Cycle efficiency improvement provided by the adoption of RadMax two-phase compressors and expanders offers the potential for smaller and less expensive, sub-critical plants in this estimated $16 billion market to be as efficient as the most efficient large plants. This can result in more, smaller efficient plants being built closer to the demand instead of building fewer, larger and more distance plants, consequently reducing the load on the distribution system and creating a more secure and responsive grid.

Steam systems are a crucial part of every processing industry and in some applications can account for over half the total energy used. RadMax two-phase expanders operating under the steam dome have cost and performance advantages over turbo expanders and other expander technologies, and can capture significant energy normally lost during the depressurization of flowing steam. This can result in dramatic increased process energy efficiency and reduced CO_2 footprint by reducing energy use.

RadMax is seeking joint development partners to help commercialize our products in these markets.

About REGI U.S., Inc.

RadMax Technologies, Inc., the wholly owned subsidiary of REGI U.S., Inc., is a research and development company focused on creating new, disruptive technologies that are more efficient, compact, and cost-effective than those currently available, and is developing and commercializing high efficiency engines, compressors, expanders and pumps for civilian, commercial and government applications based on our patented RadMax™ axial vane-type rotary technology.

FORWARD LOOKING STATEMENTS:

Statements in this press release regarding the business of RadMax Technologies, Inc. and REGI U.S, Inc. (together the "Companies'") which are not historical facts are "forward-looking statements" that involve risks and uncertainties, certain of which are beyond the Companies' control. There can be no assurance that such statements will prove accurate, and actual results and developments are likely to differ, in some case materially, from those expressed or implied by the forward-looking statements contained in this press release. Readers of this press release are cautioned not to place undue reliance on any such forward-looking statements.

CONTACTS:

Lynn Petersen, VP Business Development
info@radmaxtech.com
(509) 474-1040, ext. 103

Paul W. Chute, CEO
(509) 474-1040, ext. 101
7520 N. Market St. STE #10
Spokane, WA. 99217-7800