

# Homerun Resources Inc. Cooperative Research and Development Agreement with U.S. Department of Energy's National Renewable Energy Laboratory

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Vancouver, November 7, 2023 - [Homerun Resources Inc.](#) (TSXV: HMR) (OTCQB: HMRFF) ("Homerun" or the "Company") is pleased to announce that on November 6th, the Company received final execution and approvals on a Multi-Party Shared Resource/Funds-In Cooperative Research and Development Agreement (CRADA) with the U.S. Department of Energy's National Renewable Energy Laboratory (NREL) and The Babcock & Wilcox Company (B&W).

## COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT ("CRADA")

The general purpose of the CRADA is a collaborative effort to jointly evaluate integrating a silica sand refinement process into the ENDURING Energy Storage Application. NREL, Homerun and B&W have recognized the potential of using the novel energy storage technology to process upgrade Homerun's silica sand while providing clean reliable energy. This initiative supports Homerun's goal of refining their silica sand to serve various industrial sectors.

The project is designed to support an advanced energy solution in long duration energy storage using particle-based thermal energy storage and overcome market hurdles for using this technology in broad decarbonization applications. It will help define a technology commercialization pathway that currently lacks first-of-its-kind use and lay groundwork for ongoing technology developments capable of enhancing U.S. industry and manufacturing jobs. If the particle thermal energy storage is realized by this collaboration, it can be deployed to train U.S. workers working on this energy solution for long term economic competitiveness. Additionally, particle thermal storage may enhance energy security and resilience by providing a potential low-cost and long-duration ability to overcome blackouts or weather events that may crumple local electric grids.

In conjunction, NREL will test Homerun silica sand to determine the composition and suitability for use in energy storage and assess other applications of silica purification for photovoltaic (PV) glass, PV silicon or glass substrate for perovskite PV cells, and silicon anode for Li-ion batteries. The Parties will analyze the economic benefits of using Homerun's silica sand for energy storage, including energy arbitrage from energy storage and grid service, processing of the silica sand by using low-cost electricity in energy storage, and generating potential income from processed materials after its use for energy storage (e.g., high-purity silica sand for renewable materials).

## ENDURING ENERGY STORAGE - PATH TO DECARBONIZATION

Energy storage provides a pathway to decarbonizing the economy and reducing dependency on the use of fossil fuels for a clean energy future. Long-duration stationary energy storage is increasingly recognized as a viable solution for improving the resiliency of the grid, integrating more intermittent renewable energy resources such as wind and solar, and providing reliable energy supply to grid or industrial processes.

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NREL led technology development using particle-based thermal energy storage is aimed at enabling a

low-cost technology for long-duration thermal energy storage ("LDES"). This technology is poised to have far-reaching impacts; it has applications in grid storage for renewable integration, and ultimately aims to compete with natural gas.

The ENDURING project led by NREL and collaborated with industry partners has developed key components in the storage system and verified their operation mechanism through laboratory prototypes testing and modeling of the component and system performance. The development supports designs of an electric-charging particle heater, a fluidized bed heat exchanger driving a power cycle, and a particle storage design for storing hot particles at 1200°C. An integrated storage system was designed and analyzed for performance and cost to verify the technoeconomic goals of LDES applications.

The ENDURING technology works by heating stable, low-cost solid silica particles—which unlike molten salts, are stable at both high and ambient temperatures—to over 1,000 degrees Celsius. This charging process happens when electric power is cheapest, allowing the resulting energy to be stored for several days in large storage modules. To discharge this energy, the hot particles are fed through a heat exchanger, ultimately driving an electric generator.

With more abundant renewable electricity available and electrification of the energy sector, thermal energy storage makes more and more sense for the broad decarbonization of the economy. The NREL technology focuses on using low-cost silica sand to provide broad application potentials integrating renewable generation.

#### ABOUT THE BABCOCK & WILCOX COMPANY

Headquartered in Akron, Ohio, The Babcock & Wilcox Company, is a leader in energy and environmental products and services for power and industrial markets worldwide. Follow us on LinkedIn and learn more at [babcock.com](http://babcock.com).

#### ABOUT HOMERUN RESOURCES

Homerun Resources is focused on the development of its business within the critical and energy materials sectors. With a steadfast commitment to operational excellence, sustainability, and building shareholder value, [Homerun Resources Inc.](https://homerunresources.com/) is poised to make a lasting impact in these industries. Learn more at <https://homerunresources.com/>.

On behalf of the Board of Directors of  
[Homerun Resources Inc.](https://homerunresources.com/)

"Brian Leeners"

Brian Leeners, CEO & Director  
[brianleeners@gmail.com](mailto:brianleeners@gmail.com) / +1 604-862-4184 (WhatsApp)

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