

GENTHERM

Gentherm and General Motors Present Microclimate Comfort System Solution to Increasing Driving Range of Electric Vehicles

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Gentherm's ClimateSense™ microclimate solution provides significant energy savings and improved passenger comfort

NORTHVILLE, Mich., October 28, 2019 – Gentherm, the global market leader and developer of innovative thermal management technologies, recently presented along with General Motors the results of the Company's collaboration with General Motors to understand the real-world effectiveness a microclimate comfort system solution provides to increase the driving range of electric vehicles. The results were presented during the SAE Thermal Management Systems Symposium and showed that Gentherm's ClimateSense™ microclimate thermal comfort system significantly increase driving range and energy savings in electric vehicles.

General Motors' objective was to achieve a 30 percent overall reduction in energy that would achieve equal or superior passenger comfort based on 2 occupants per vehicle. Gentherm developed a proof of concept microclimate seat-centric climate control system where the Company designed and integrated a two-zone ClimateSense™ system into a Chevrolet Bolt EV. The ClimateSense™ system solution is comprised of advanced thermal delivery methods, integrated electronics, embedded software, and a revolutionary thermophysiology based human centric control algorithm. The collaboration with GM also utilized a novel human-centric comfort measurement methodology to measure passenger comfort and the performance of the microclimate heating and cooling system.

Significant findings include:

- ClimateSense™ provides **50-69 percent energy savings** with two zones active and improves overall customer comfort in -7°C cold weather test
- ClimateSense™ provides **34 percent energy savings** with two zones active and improves overall comfort in hot weather testing

"The proliferation of ridesharing, electrification and autonomous vehicles has created a need to redesign the interior of a vehicle. Yet, when we look at the interior cabin of today's vehicle, the HVAC and thermal management approach has only seen minor incremental changes over the last 50 years," said Phil Eyster, President and CEO of Gentherm. "Our ClimateSense™ system demonstrates that it can be the solution that meets the industry's electrification goals of increased vehicle range and energy savings, while creating the overall passenger experience that will meet the demands of electric, rideshare and autonomous vehicles."

More information can be found [here](#).

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About Gentherm

Gentherm (NASDAQ:THRM) is a global developer and marketer of innovative thermal management technologies for a broad range of heating and cooling and temperature control applications. Automotive products include variable temperature Climate Control Seats, heated automotive interior systems (including heated seats, steering wheels, armrests and other components), battery thermal management systems, cable systems and other electronic devices. Medical products include patient temperature management systems. The Company is also developing a number of new technologies and products that will help enable improvements to existing products and to create new product applications for existing and new markets. Gentherm has over 13,000 employees in facilities in the United States, Germany, Canada, China, Hungary, Japan, Korea, North Macedonia, Malta, Mexico, United Kingdom, Ukraine, and Vietnam. For more information, go to www.gentherm.com.