

GP JOULE's Single-Axis Solar Tracker Successfully Completes Independent 20-year Reliability Testing

Southern Alberta Institute of Technology's accelerated life-cycle protocols confirm performance of PHLEGON® PV tracker

TORONTO, ON, Canada – May 29th, 2018. GP JOULE Canada Corp., a subsidiary of GP JOULE GmbH, announced today that the PHLEGON® single-axis tracker has passed a series of accelerated life-cycle tests conducted by the [Southern Alberta Institute of Technology \(SAIT\)](#) in Calgary. The Institute's Green Building Technology Lab and Demonstration Centre confirmed PHLEGON®'s long-term reliability within a wide range of environmental conditions and proved its performance in extreme northern climates. SAIT's Accelerated Life Test Report shows that GP JOULE's active tracking technology provides proven results in the Northern Canadian and U.S. markets where fixed-tilt PV has been dominant.

"Our tracking technology underwent on-going rigorous testing and qualification regimens, from the earliest stages of its deployment in 2010", said David Pichard, CEO of GP JOULE NA EPC business. "We are pleased to share these latest results from SAIT confirming [PHLEGON®'s 20-year proven quality and performance](#). This gives developers and EPCs clear evidence that our tracking technology does not pose additional O&M risks compared to fixed systems or other tracking technologies developed primarily for southern markets."

SAIT cycled PHLEGON®'s mechanical components continuously 7,305 times over a 19-day period to simulate two decades of functionality. PHLEGON® initially underwent the tests without environmental factors, and then went through another round that simulated extreme conditions including grit, freezing rain, and sleet. The test included a deep freeze below -20C, confirming sensitive components function under extreme temperatures. "Freeze-thaw" tests mimicked the effects of spring and fall on the tracker, flooding moving parts with water before immediately exposing them to below-zero temperatures. The actuator, responsible for controlling and rotating the solar panels, completed both the mechanical and environmental rounds of testing -- essentially 40 years without failure.

"GP JOULE wanted SAIT to test two things: First, how the system will operate in Alberta's climate and second, what the cost of operating and maintaining the PHLEGON® over a 20-year lifespan will be," said Tom Jackman, SAIT's principal investigator. "Our testing protocol introduced freezing conditions that were not considered in their original test plan, resulting in substantial ice build-up and additional weight. All components tested without failure."

The PHLEGON® tracker will be on display at [Solar Canada's Summer Solstice BBQ](#) on June 19th from 7:00-10:00pm hosted by SAIT. [Registration required](#).

About GP JOULE

GP JOULE is a global renewable energy company with an extensive track record developing, engineering, constructing, operating, and financing commercial and utility-scale renewable

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projects. In the North American market, GP JOULE provides a full range of PV products and services focused on delivering the lowest production cost per kWh. The company's complete in-house and local execution team includes civil, mechanical, and electrical expertise. Globally, GP JOULE has installed over 500 MWs of PV projects and manages 600 MWs of assets across Germany, France, Italy, Canada, and the United States. Find out more about how we execute profitable turnkey PV projects at www.gp-joule.com.

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