SMA Solar Technology AG press release

Life cycle assessment makes Sunny Central UP's sustainability performance transparent

Niestetal, October 28, 2024 – Experts from the Fraunhofer Institute for Building Physics have prepared a life cycle assessment (LCA) for the Sunny Central UP central inverter on behalf of SMA. The study, which was conducted according to internationally recognized scientific standards and methods, examines the sustainability performance of the inverter over its entire life cycle - from raw material extraction to the end of the product's life. The LCA was independently certified by DEKRA Assurance Services GmbH.

Comparison of analyses enables optimization of sustainability performance

"We want to provide our customers with comprehensive and scientifically sound information on the environmental impact of our products over their entire life cycle," said Anna-Lisa Sas, Sustainability Engineer in the Product Sustainability department at SMA. "That's why - in addition to the LCA for the PEAK3 string inverter - we had a life cycle analysis carried out externally and independently certified for the SMA central inverter Sunny Central UP. This enables us to compare the results of both life cycle analyses and derive measures for improving the sustainability performance of our entire product portfolio."

After an average amortization period of 1.4 years, inverter operation contributes to CO2e savings

The 16 environmental impact categories examined as part of the LCA include the "climate change" category and the carbon footprint of the Sunny Central UP. This entailed analyzing the greenhouse gas emissions caused by the inverter across its entire product life cycle.

Based on the results, it is also possible to calculate the CO_2 payback period for the inverter – that is, the time it takes for the amount of CO2e saved by the generation of solar power in a PV system incorporating the Sunny Central UP to offset the amount of CO2e caused by the inverter over its life cycle. Depending on the application scenario examined in the markets typical for the Sunny Central UP, SMA's calculations suggest that the payback period of the inverter is between 1.2 and 1.6 years. After that period, inverter operation over the remainder of the useful life of approximately 20 years helps to save C_o2 relative to the use electricity sourced from the utility grid.

White paper on life cycle assessment available

A life cycle assessment is an established scientific method of quantifying the environmental impact of processes, products and services. ISO 14040 and 14044 standardize the methodology for the LCA, ensuring the transparency needed to deliver a comprehensive representation of the sustainability performance of the product being assessed. A white paper summarizing the key findings of the LCA is available for download on SMA sustainability website.

About SMA

As a leading global specialist in photovoltaic and storage system technology, the SMA Group is setting the standards today for the decentralized and renewable energy supply of tomorrow. SMA's portfolio contains a wide range of efficient PV and battery inverters, holistic system solutions for PV and battery-storage systems of all power classes, intelligent energy management systems and charging solutions for electric vehicles and power-to-gas applications. Digital energy services as well as extensive services round off SMA's range. SMA inverters installed throughout the world within the last 20 years with a total output of approximately 132 GW help avoid the emission of more than 70 million tons of CO_2. SMA's multi-award-winning technology is protected by more than 1,600 patents and utility models. Since 2008, the Group's parent company, SMA Solar Technology AG, has been listed on the Prime Standard of the Frankfurt Stock Exchange (S92) and is listed on the SDAX and TecDAX index.

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