



Case Study

World's First Solar Train — 6.4 kWp Lightweight Solar System

System Size

6.4 kWp

Location

Byron Bay, Australia

Date

May 2017

Installation Method

Quick-Bonding

Project Application

Transportation/e-mobility

ABOUT SUNMAN

Sunman Energy is a technology company founded by a group of industry veterans delivering the future of Solar. Through the research and development of composite materials, Sunman has successfully commercialized the world's first glass-free, lightweight and flexible Panel – eArc. Replacing glass completely, eArc brings solar power to markets and applications scenarios that were previously impossible.

THE PROJECT

The Byron Bay Heritage train is the world's first solar system, running entirely on energy from the sun. In addition to a conventional solar array on the train's storage shed, the eArc system will provide on-the-road charging and extend the train's battery life. The train will complete 14 round trips per day between Sunrise beach and Byron Bay.



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ULTRA-LIGHT

The train had an impenetrable roof with low load bearing capacity. eArc's lightweight construction proved to be an advantage.

FAST-INSTALLATION

The panels were directly glued to the train's roof removing the need for racking equipment and resulting in less time on roof.

AESTHETIC

The flexibility of eArc allowed the panel to be contoured along the train's curved roof, creating the illusion of integration.

DURABLE

eArc is the first glassless module to pass the same durability tests as conventional glass modules, including IEC 61215:2016, IEC61730:2016 and UL1703 (USA).

eArc has also passed PID, salt mist and ammonia corrosion tests



SMF Modules

eArc MODULES

eArc is the world's first glassless solar module. An innovation combining proven crystalline silicon solar cells with Sunman's patented composite material, eArc has the same durability and robustness of conventional glass modules.

The SMF series is frameless and has the most flexibility out of the three eArc module series. This series of products is suited to many innovative cross-market applications, such as e-mobility and BIPV.

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SUNMAN
Lightweight Solar Pioneer