



# Bridgestone world solar car challenge

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Bridgestone World Solar Challenge--the world's premier solar car event relying on solar energy as its power source to travel 3,000 km across the Australian continent over the course of approximately 5 days. We are proud to celebrate 10 years supporting this significant event as its partner. Bridgestone remains passionate about supporting the challenges of the teams and the young engineers who will lead the future. We will also reinforce the development of sustainable tire technologies to support them from the ground up and to contribute to realizing the next-generation mobility society.

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The World Solar Challenge (WSC), since 2013 named Bridgestone World Solar Challenge, is an international event for solar powered cars driving 3000 kilometres through the Australian outback.

With the exception of a four-year gap between the 2019 and 2023 events, owing to the cancellation of the 2021 event, the World Solar Challenge is typically held every two years. The course is over 3,022 kilometres (1,878 miles) through the Australian Outback, from Darwin, Northern Territory, to Adelaide, South Australia. The event was created to foster the development of solar-powered vehicles.

The WSC attracts teams from around the world, most of which are fielded by universities or corporations, although some are fielded by high schools. It has a 32-year history spanning fifteen events, with the inaugural event taking place in 1987. Initially held once every three years, the event became biennial from the turn of the century.

Since 2001 the WSC was won seven times out of ten efforts by the Nuna team and cars of the Delft University of Technology from the Netherlands. The Tokai Challenger, built by the Tokai University of Japan, was able to win 2009 and 2011. In the most recent editions (2019 & 2023), the Belgian Innoptus Solar Team formerly known as the Agoria Solar Team from KU Leuven University won.

Starting in 2007, the WSC has multiple classes. After the German team of Bochum University of Applied Sciences competed with a four-wheeled, multi-seat car, the BoCruiser (in 2009), in 2013 a radically new "Cruiser Class" was introduced, stimulating the technological development of practically usable, and ideally road-legal, multi-seater solar vehicles. Since its inception, Solar Team Eindhoven's four- and five-seat Stella solar cars from Eindhoven University of Technology (Netherlands) won the Cruiser Class in all four events so far.

The 2017 Cruiser class winner, the five-seat Stella Vie vehicle, was able to carry an average of 3.4 occupants



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at an average speed of 69 km/h (43 mph). Like its two predecessors, the vehicle was successfully road registered by the Dutch team, further emphasizing the great progress in real-world compliance and practicality that has been achieved.

The objective of the challenge is to promote the innovation of solar-powered cars. It is a design competition at its core, and every team/car that successfully crosses the finish line is considered successful. Teams from universities and enterprises participate. In 2015, 43 teams from 23 countries competed in the challenge.

Efficient balancing of power resources and power consumption is the key to success during the challenge. At any moment in time, the optimal driving speed depends on the weather forecast and the remaining capacity of the batteries. The team members in the escort cars will continuously remotely retrieve data from the solar car about its condition and use these data as input for prior developed computer programs to work out the best driving strategy.

It is equally important to charge the batteries as much as possible in periods of daylight when the car is not driving. To capture as much solar energy as possible, the solar panels are generally directed such that these are perpendicular to the incident sun rays. Sometimes the whole solar array is tilted for this purpose.

The first edition of the World Solar Challenge was run in 1987 when the winning entry, GM's Sunracer won with an average speed of 67 km/h (42 mph). Ford Australia's "Sunchaser" came in second. The "Solar Resource", which came in 7th overall, was first in the Private Entry category.

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