

World Solar Challenge

English 2 – Chapter V

SOLAR CAR

Solar vehicle used for land transport

Run on only power of the sun (some models have batteries)

Depends on the solar array → uses PV cells to convert sunlight into electricity

Battery pack allows the car to go max 400 km without the sun (max speed 97 km/h)

2-3 horsepower motors

Wireless telemetry → helps the driver's team to monitor the car's energy consumption



WHAT IS THE WORLD SOLAR CHALLENGE?

Biennial solar-powered car
race in Australia

3,022 km through the country

Teams from all around the
world (university, high school
students)



HISTORY

Hans Tholstrup → developed the first solar car (The Quite Achiever); traveled 4,000 km through Australia in 20 days → precursor of the World Solar Challenge, sold the rights to the state of South Australia

1987: First race (GM's Sunraycer won it; average speed 67 km/h)

2017: Last race (Dutch NUON team won it; average speed 80 km/h)

RACING STRATEGIES

Balancing of power resources and power consumption is the key

Charge the batteries

Driving speed depends on the weather and the capacity of batteries

Chasing car → retrieve data from solar car through programs

IMPORTANT RULES

Race finishes at Adelaide (2998 km) BUT to record the official time competitors must reach the finish line in the centre of the city

Race is over public roads → cars race under normal traffic regulations

Min. 2 and max. 4 drivers are allowed to be registered for each team

Driving time is: from 8 a.m. to 5 p.m.

IMPORTANT RULES

Competitors have to pause the car for 30 minutes → only limited maintenance is allowed (clean the dust, cool the cells)

Maximum capacity of the batteries is 5 kWh power (batteries cannot be replaced during the race → except breakdown situations)

No restrictions in the design of the car (except outer dimensions)

WORLD SOLAR CHALLENGE 2017



QUESTIONS

Who developed the first solar car?

When was the first World Solar Challenge?

What is the key to win the World Solar Challenge?

What is the role of the chasing car?

Where does the World Solar Challenge take place?

Are there any restrictions (except the outer dimensions) in the design of the car?



**THANK YOU
FOR YOUR
ATTENTION!**