

ECLIPSE SOLAR CAR



FUTUR COMPETITION

**THE BRIDGESTONE WORLD SOLAR
CHALLENGE**
AUSTRALIA, OCTOBER 2021

OUR TEAM'S OBJECTIVE

**CLAIM A WORLD TOP 10 AT THE
BRIDGESTONE WORLD SOLAR CHALLENGE
2021**



Ecole de Technologie Supérieure
1100 Notre-Dame Ouest
<https://eclipseets.ca>

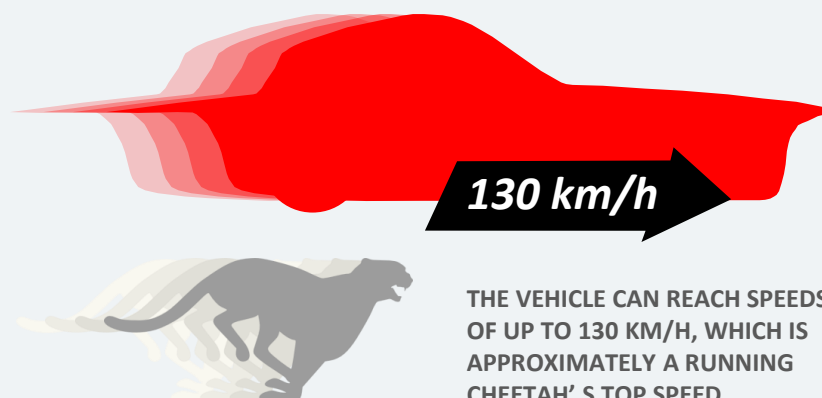
Montreal, Quebec, Canada
H3C 1K3
eclipse.ets@gmail.com
1-514-396-8800 ext.7535





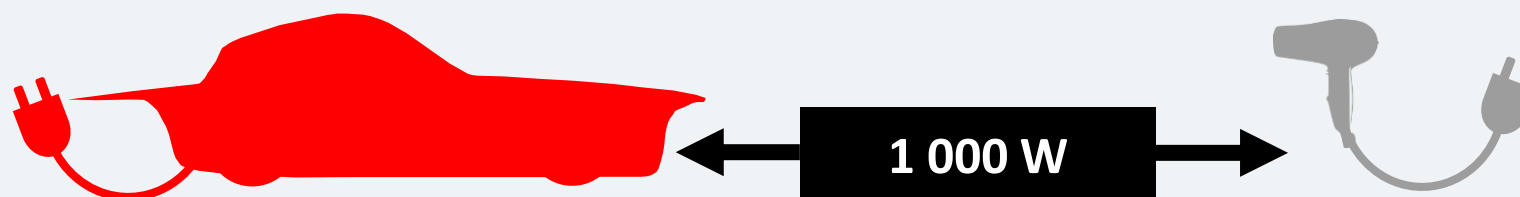
20 MEMBERS

20 UNDERGRADUATES STUDYING IN ELECTRICAL, MECHANICAL, SOFTWARE AND LOGISTICS ENGINEERING DEDICATE TIME AND EFFORTS TO ECLIPSE



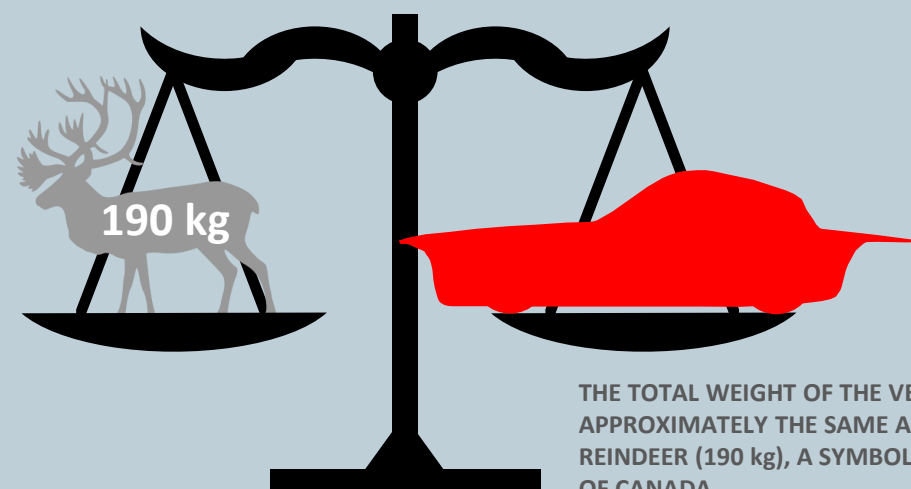
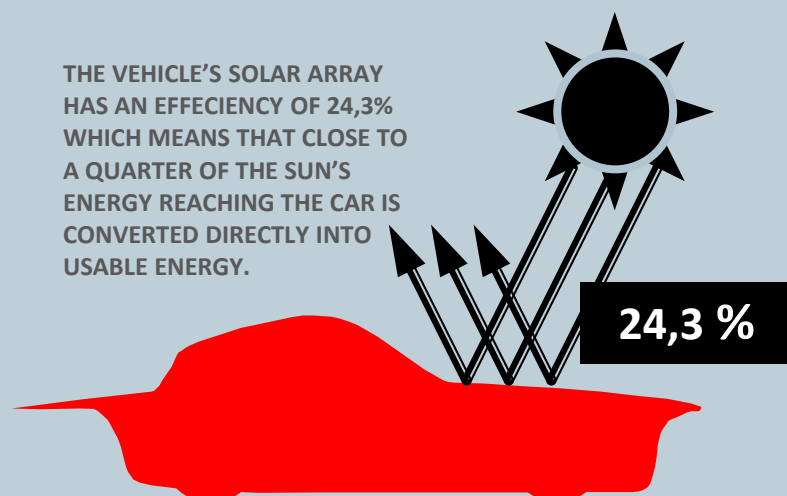
THE VEHICLE CAN REACH SPEEDS OF UP TO 130 KM/H, WHICH IS APPROXIMATELY A RUNNING CHEETAH'S TOP SPEED

THE VEHICLE'S AERODYNAMICS ARE DESIGNED SO THAT IT'S DRAG FORCE IS 8 TIMES INFERIOR TO THAT OF A TESLA MODEL S.



THE VEHICLE'S ENERGY CONSUMPTION IS EQUIVALENT TO THAT OF A HAIR DRYER.

THE VEHICLE'S SOLAR ARRAY HAS AN EFFICIENCY OF 24,3% WHICH MEANS THAT CLOSE TO A QUARTER OF THE SUN'S ENERGY REACHING THE CAR IS CONVERTED DIRECTLY INTO USABLE ENERGY.



THE TOTAL WEIGHT OF THE VEHICLE IS APPROXIMATELY THE SAME AS AN ADULT REINDEER (190 kg), A SYMBOLIC ANIMAL OF CANADA.

1992 - ECLIPSE I

First solar car team in Quebec. Finished 22nd at the SunRayce 95.



2001 - ECLIPSE IV

6th position after qualifications and 20th position at cumulative time during ASC 2001.



2004 - ECLIPSE V

Participation at the Formula Sun Grand Prix 2004. Award for technological innovation.



2018 - ECLIPSE X

9th at the 2019 World Solar Challenge, 1st in Canada, 2nd in North America 3rd in the American Solar Challenge 2018.



1996 - ECLIPSE II

29th at the SunRayce 97. Two honorable mentions at the Canadian Solar Discovery Challenge 96.



1999 - ECLIPSE III

8th at the SunRayce 99. Honorable mentions for suspension, frame & braking system.



2009 - ECLIPSE VI

Participation at the Global Green Challenge held in Australia. 24th at the WSC 2009.



2016 - ECLIPSE IX

8th at the American Solar Challenge 2016. 1st prize for the most sophisticated simulation



2013 - ECLIPSE VIII

18th at the WSC 2013 and 9th at the ASC 2014.



OUR TEAM'S OBJECTIVE

Nowadays, the protection of the environment is a leading subject. It is the concern for the environment that drives university students in many countries to develop high-tech solar powered vehicles. The aim is to find adaptable solutions for the companies of tomorrow.

IN 1992, A TEAM OF ENTHUSIASTIC AND AMBITIOUS STUDENTS ASSEMBLED TO MAKE A SOLAR CAR.



THE TEAM

Our team is composed of 20 talented students pursuing an engineering career. We are divided into three departments: administration, mechanical department and electrical department. The mechanical department is responsible for designing and manufacturing the mechanical components of our vehicle. The electrical department's purpose is to optimize the collection and conversion of solar energy into electricity, and designing and manufacturing the car's electrical systems. The administration is responsible of the overall management of the project, which includes its financing as well maintaining current, and engaging into new, business relations.

Eclipse believes in technological and technical innovation. Teamwork, ambition, and passion drive every scientific association at ETS. We are therefore compelled to direct our efforts towards these principles.

In addition, we are committed towards our business partners to perform well in each competition we attend, to push back the boundaries of solar car engineering and to excel in the field of sustainable development.



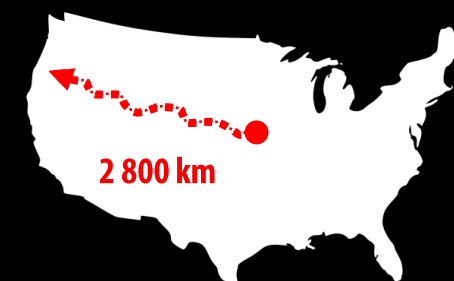
Students who actively participated in the project at the World Solar Challenge 2019. They travelled more than 3000 km from Darwin to Adelaide, Australia to finish the competition in 9th place. This placement means the team is ranked first in Canada and second in North America!



ECLIPSE X HAS BETTER PERFORMANCE RATINGS OF ANY PREVIOUS PROTOTYPES CONSTRUCTED BY OUR CLUB. IT CAN RUN AT MORE THAN 75 KM/H AND STILL MAINTAIN A NET ENERGY BALANCE OF ZERO.



AMERICAN SOLAR CHALLENGE



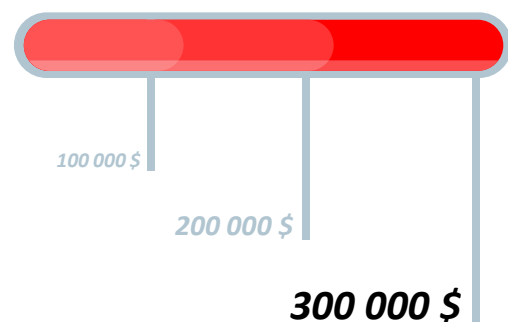
The American Solar Challenge (ASC) is a typical car race. The goal is to design, build and drive solar powered cars. Teams from around the world are racing over an estimated 2,800 km in the United States. To qualify and compete, cars must first perform and prove themselves on a closed circuit. Once the steering, braking, acceleration and other systems are accepted, the cars race on the racetrack and test their aerodynamics and efficiency to get the best cumulative time and to flee with victory!

WORLD SOLAR CHALLENGE



The Bridgestone World Solar Challenge (WSC) is an internationally renowned race across the Australian continent. The university teams leave Darwin, located in the north of the country, to go to Adelaide, 3,000 km below. Solar cars must handle a variety of factors such as dust, wind, sand, heat and sun to cross the finish line first and earn top honors!

FINANCING OBJECTIVE :



THE SCHOOL:

Founded in 1974, the *Ecole de technologie supérieure* (ETS), part of the University of Quebec, is a school located in Montreal offering engineering degrees. The School's objective is to provide high quality education and to promote research in applied engineering and technology with a view to foster the technological and economic development of Quebec.

Within the context of this objective, and working in conjunction with the industry, the School focuses its activities on cooperative teaching, applied research and technology transfer. Scientific student association such as Eclipse are much solicited by the school.

OBJECTIVES

Eclipse is a multidisciplinary team where students are committed to:

- I Contribute** to the cleaning-up of the environment and the promotion of sustainable development.

- II Create** an expertise in solar electricity for Quebec's energy industry.

- III Excel** in designing, manufacturing and assembling of experimental prototypes powered by solar energy.

- IV Represent** our business partners honorably and professionally through demonstrations of technical know-how.

- V Maximize** the potential of each member by the exchange of innovative ideas in solar energy and teamwork.

WHERE YOU COUNT THE MOST

Undertaking this major project implies human, material and financial resources.

To reach the target, the team depends upon industrial partners, just like you!

In funding the project, you encourage future engineers on their academic and professional development. Your contribution (with tax benefits) will provide you maximum visibility within the academic community, reaching out to the business community. Eclipse offers you the opportunity to support a dynamic team developing cutting edge technologies and knowledge. This partnership offers many advantages for your enterprise.

For example, by investing \$2,000 or more in the next generation of engineers, you can double your corporate influence upon engineers. Indeed, by an "Award of excellence", presented during our prestigious scholarship ceremony at ETS, you will receive two times the visibility, one through our association, the twice via the school. Your company will benefit from a brand image among the university community, students, graduates, ETS industrial partners and the general public, as well as a simplified recruiting opportunity for trainees or engineers.

For more details, please contact Ms. Caroline Girgis, Business Development Coordinator at *Fonds de développement de l'ETS* (FDETS) by e-mail : caroline.girgis@etsmtl.ca or by phone : 514-396-8441

VISIBILITY

ETS' solar car causes a great deal of interest among medias and the general public.

Every year, prototypes are exposed within the school, at our open houses, in museums, and in prestigious showrooms. They also appear in

news shows, newspapers, magazines, editorials, and websites.

Furthermore, the club enjoys important mediatic coverage during our competitions where banners are always up and members wear official team uniforms upon which is our list of sponsors is displayed.

THE INNOVATIVE 2018 PROTOTYPE
FINISHED IN 9th PLACE AT THE WORLD
SOLAR CHALLENGE 2019
COMPETITION WHICH TOOK PLACE
FROM DARWIN TO ADELAIDE IN
AUSTRALIA.



FUNDING CHART

CATEGORIES	VALUES	LOGO ON WEBSITES AND BANNERS	LOGO ON THE CAR	SURFACE AREA ON vehicle	LOGO ON UNIFORMS
SPECIAL	20 000 \$ or more	✓	✓	Custom made*	✓
DIAMOND	10 000 \$ - 19 999 \$	✓	✓	Extra Large*	✓
PLATINUM	5 000 \$ - 9 999 \$	✓	✓	Large*	✓
GOLD	3 000 \$ - 4 999 \$	✓	✓	Medium*	✓
SILVER	2 000 \$ - 2 999 \$	✓	✓	Small*	✓
BRONZE	500 \$ - 1 999 \$	✓			✓

*Contact us for an arrangement at the height of your importance.



Picture taken from www.etsmtl.ca