



## Partnership brochure

ESTEBAN, SOLAR CAR PROJECT  
POLYTECHNIQUE MONTREAL

INNOVATING  
FOR OVER 25  
YEARS

11 CARS  
POWERED BY  
THE SUN

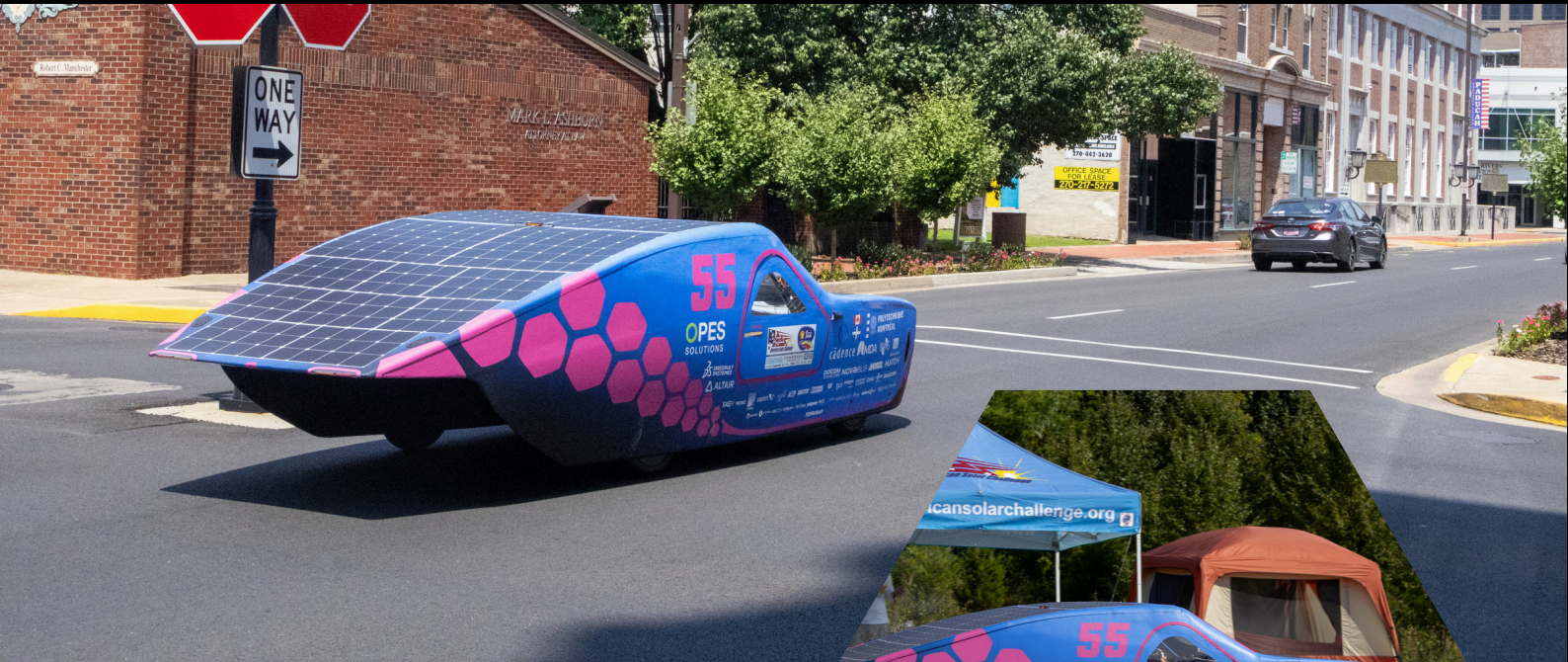
OVER 50  
STUDENTS IN  
ENGINEERING

# ESTEBAN 12



# THE PROJECT

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Since its creation in 1998, the Esteban Project has combined creativity and perseverance to achieve an ambitious goal: the development of a high-performance car powered purely by solar energy.

Every year, the team must display great ingenuity to find innovative solutions to build increasingly efficient prototypes, and in this way contribute to the development of sustainable energy. Today, the Esteban project is proud to present Polytechnique Montreal's latest solar car prototype: Esteban 11.

Once again this year, the team is thinking big. The project's most recent prototype, Esteban 11, proved its worth in the multi-seater category, taking 1st place in both the 2024 Electrek Formula Sun Grand Prix and the 2024 Electrek American Solar Challenge. Thrilled with these results, the team is now beginning the design of Esteban 12 with a new goal in mind: to take part in the Bridgestone World Solar Challenge in Australia in the years to come.

This competition, in which the team has not competed in for over a decade, will require tenacity and dedication from the entire team. By supporting the Esteban project, our partners are investing in the know-how of over 50 students eager to perform and innovate, and who are convinced that it is possible to build a greener future. Being an Esteban partner means helping future engineers meet the major challenges of today and tomorrow.

# INNOVATIONS

Between Esteban 9 and Esteban 10, the team successfully overcame the challenges involved with the switch from single-seaters to multi-passenger vehicles. Then, with Esteban 11, the team pushed the boundaries of the vehicle's development with, among other things, a split of the battery and an optimized suspension.

With Esteban 12, the challenge will be to comply with both the American Solar Challenge as well as the World Solar Challenge regulations. The team will have to design the vehicle in such a way as to optimize its score in both competitions.

## ESTEBAN 10 AND 11 COMPARATIVE DATASHEET

Vehicle	Esteban 10	Esteban 11
Dimensions	4.9 m x 1.85 m x 1.25 m	4.92 m x 1.8 m x 1.04 m
Weight	330 kg	293 kg
Top speed	105 km/h	100 km/h
Cruising speed	65 km/h	70 km/h
Drag coefficient	0.151	0.128
Battery	9.2 kWh (Li-Ion)	9.35 kWh (Li-Ion)
Power	1.3 kW (1.74 HP solar) 10 kW (13.4 HP motor)	1.3 kW (1.74 HP solar) 10 kW (13.4 HP motor)
Drivetrain type	Front-wheel drive	Front-wheel drive
Autonomy	400 km	450 km

# THE SPECIFICATIONS

With Esteban 11, the integration of new functionalities into the car prompted the team to optimize the performance of the car's electrical systems to satisfy competition criteria and improve the car's practicality.

Below are just some of the cutting-edge technologies integrated into Esteban 11.



## MECHANICAL SYSTEMS

Finite element optimized carbon fiber composite chassis

Prepreg structure or composite made by infusion under vacuum

CAD-developed digital model

Four-wheel hydraulic braking system

Independent suspension

Electrical component supports made with 3D printing



## ELECTRICAL SYSTEMS

Three-phase synchronous wheel motors and regenerative braking

Monocrystalline silicon solar panels

Automotive-standard modular CAN network

Battery management and protection system for car safety

Intelligent dashboard and telemetry for real-time data analysis

Python programming for score optimization in competitions

# THE TEAM

Since its inception, the Esteban Project has made a point of bringing together students from a variety of different engineering programs. To this end, the team currently includes members in mechanical engineering, electrical engineering, software engineering, computer engineering, industrial engineering, engineering physics and civil engineering, all of whom actively participate in the project by helping with promotion, project management, design, manufacturing and fundraising.

Therefore, supporting the Esteban Project also means investing in the development of these future engineers in their quest for innovation and their awareness of the environmental issues of today. It's a unique opportunity to forge links with motivated entrepreneurial students eager to develop knowledge and skills not covered in their courses.

In addition, the Esteban team is proud to see its proportion of female students increase year after year. Indeed, the women involved in this project are key to its success. The team is thus proud to showcase their dedication and commitment.

Finally, once again this year, the team will be pursuing its mission to promote the place of women in engineering through its various platforms. In addition, the project encourages young girls to enter the engineering profession through presentations at elementary and high schools.



# THE COMPETITIONS



## Formula Sun Grand Prix

800 km - 3 days - 25 teams

The Formula Sun Grand Prix is an annual track competition held in the United States.

1<sup>ST</sup>  
PLACE

2024, 2023, 2022,  
2019 & 2018

2<sup>ND</sup>  
PLACE

2016

3<sup>RD</sup>  
PLACE

2017

## American Solar Challenge

2800 km - 7 days - 9 teams

The American Solar Challenge is a biennial rally held on American roads.

1<sup>ST</sup>  
PLACE

2024

3<sup>RD</sup>  
PLACE

2022

## World Solar Challenge

3000 km - 5 days - 30 teams

The World Solar Challenge is a biennial rally held on Australian roads.

16<sup>TH</sup>  
PLACE

2007

21<sup>ST</sup>  
PLACE

2009

# THE ADVENTURE CONTINUES



This summer, Esteban's team will take part in the Formula Sun Grand Prix, a closed-circuit competition in the USA. In 2023, the team took first place using only solar energy. Then, in 2024, the team claimed its 5th consecutive victory at the competition. Esteban will be aiming to take home gold for the sixth year in a row in 2025.

Proud of the results achieved with its eleventh prototype, in 2024-2025 the team will begin the design and production of its twelfth iteration: Esteban 12. Throughout the year, the team will have to demonstrate ingenuity and tenacity in order to design a new high-performance vehicle that complies with the rules of both the American Solar Challenge and the World Solar Challenge.



With Esteban 12, the team plans to take part in the 2027 World Solar Challenge. This competition, in which teams will be crossing Australia from north to south, will gather the best solar car teams in the world. Esteban's team will have to compete against some of the world's most prestigious universities, as well as driving over 3,000 km. Team members will thus have to show perseverance and dedication throughout.

# THE PARTNERSHIPS

Esteban is proud to wear the colors of its partners in its many and varied events. In fact, Esteban 12 sponsors are entitled to a number of benefits. These are presented on the following page.

What's more, certain additional benefits can be granted (such as logo display on the steering wheel, pilot and co-pilot shirts, dashboard, etc.), in return for additional monetary contributions.

Finally, the following specifications should be mentioned in relation to the benefits of Esteban 12 partners:



- The exact placement of the company logo on the jersey and car is at the discretion of the Esteban Project.
- Due to delays in the delivery of competition shirts and vinyl tights, the deadline for a partner to be displayed on the car and official team shirt at the Esteban 12 competitions will be midnight on March 31, 2026.
- Partners offering only software accesses are not eligible for the Diamond tier.

## ESTEBAN 12 SPONSOR TIERS

Sponsor tiers	Crew	Bronze	Silver	Gold	Platinum	Diamond
Value of the contribution	From 0\$ to 1250\$	From 1250\$ to 3000\$	From 3000\$ to 6000\$	From 6000\$ to 10 000\$	From 10 000\$ to 15 000\$	15 000\$ and more



# AVANTAGES

## ESTEBAN 12 SPONSOR PRIVILEGES

Sponsor tiers	Crew	Bronze	Silver	Gold	Platinum	Diamond
<b>Priviledges</b>						
Exclusive information on project progress						
Invitations to events						
Display on the project website and social networks						
Display on the car		Very small size	Small size	Medium size	Large size	Very large size
Company presentation to the team						
Promotion of job offers to the team						
Display on team shirts for competitions			Small size	Medium size	Large size	Very large size
Customized publication on the project's social networks						
Access to the team's candidate database						
Vehicle presentation at the company						
Personalized demonstration						
Display on prototype stand						
Exclusive negotiable visibility						

# VISIBILITY

## PRESENCE AT MAJOR EVENTS



Esteban takes part in many events throughout the year. Whether at public events, corporate exhibitions, school visits or international competitions, the Esteban team proudly represents its partners.

Moreover, energy is a key issue of the 21st century. Esteban is an exceptional tool for stimulating public interest in the technologies of the future, as well as in the unique opportunities offered by the engineering and science professions.

## MEDIA APPEARANCES

In recent years, the project has been the subject of reports and articles in the following media :

- CBC (radio and television)
- 98.5 FM
- Radio-Canada (radio, website and television)
- CTV (television and website)
- PV magazine
- Wall Street Journal
- TVA Nouvelles
- Journal de Montréal, Journal de Québec, Canoë
- Journal Métro
- Les affaires
- PLAN (Revue de l'Ordre des Ingénieurs du Québec)
- La Presse



# THE BUDGET

Every year, to finance the project, the Esteban team relies on both its long-standing sponsors and its ongoing search for new sponsors.

The tables presented below show our forecasted spending for the 2024-2025 project cycle.

## FORECASTED EXPENDITURES 2024-2025

Expenses related to the production of the Esteban 12 prototype	
Mechanical systems	12 000 \$
Aerodynamic shell	31 500 \$
Structural chassis	16 000 \$
Tools & composites	18 500 \$
Equipment	1 000 \$
Motors and controllers	14 670 \$
Battery	25 600 \$
Embedded systems	915 \$
Solar panels	52 750 \$
Electrical connections	4 935 \$
<b>Subtotal</b>	<b>177 870 \$</b>
Competitions and events	
FSGP 2025	39 800 \$
Promotional events	1 500 \$
Road rally	7 550 \$
Road tests	22 200 \$
<b>Subtotal</b>	<b>71 050 \$</b>

Administration	
Truck	3 750 \$
Registration	250 \$
Workshop organization	400 \$
Health & Safety	350 \$
Recruitment and team building	650 \$
Emergency fund	3 000 \$
<b>Subtotal</b>	<b>8 400 \$</b>
<b>Total</b>	<b>257 320 \$</b>



# CONTACT US

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General Co-director

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## SOCIAL NETWORKS

Facebook : Projet Esteban, voiture solaire

Instagram : esteban\_polymtl

LinkedIn : Projet Esteban, voiture solaire

