ÉQUIPE

EXOCET


# SPONSORSHIP DOCUMENT

2023-2024

English

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# ABOUT US

Created in December 2019, Exocet is a team regrouping students from Polytechnique Montréal that are interested in design and innovations in the maritime industry.

The group is composed of 36 members from diverse engineering backgrounds, such as mechanical, electrical, software, aerospace, chemical, civil, and physics. Even though our specialties are very different, we all have the same innovative spirit and desire to learn more about the maritime field as well as green technologies.

Our project aims to design and build a catamaran in order to compete in the Monaco Energy Boat Challenge. This championship goal is to promote the development of ecological technologies applied to the maritime industry.

The team also takes part in many events in the community. Among other things, we participate in the CONAM, the ADRIQ innovation prize gala, the Eureka! festival and we even have two articles published in the Québec Yachting magazine.

# OBJECTIVES AND ACCOMPLISHMENTS

Our first participation in the Monaco Energy Boat Challenge was during the summer 2022 edition of the event. Being the first North American team to ever compete in this prestigious championship, we are very proud of being able to not only attend, but also offer a fierce competition to the other teams. This participation also saw us receive 2 prizes.

In the last year, our team has undertaken a complete transition from an electrical propulsion system to a 100% hydrogen propulsion system. This innovation required a lot of ressources and specialized materials. This project was possible due to the hard work of our team and the support of our partners.

We plan on reducing our carbon impact even further, whilst improving our performances. We firmly believe these modifications will help us perform even more at our next participation to the championship during the summer 2024.

# THE MONACO ENERGY BOAT CHALLENGE

The Monaco Energy Boat Challenge regroup each year, the best of the best in student teams around the globe in order to take part in a carbon-neutral prototypes regatta.

The challenge given to the competing teams is to design and build a cockpit that will be attached to 5 metres long hulls. They also have to conceive and implement the energy and propulsion systems in order to be as powerful and enduring as possible.

Each team is also asked to present in an event called the Tech talks. These short conferences give every team the chance to present their innovations to the others as well as many participating industry professionals.

# Environmental objectives

The maritime transport industry being responsible for 90% of the worldwide trading, this type of transportation plays a key role in the annual human pollution emissions. Whilst it is one of the most eco-energical means of transporting goods, it is generating each year massive amounts of air and water pollution.

The main objective of the championship is to help reducing the ecological footprint of this worldwide industry. It is why there is a price discerned to the most innovative project in regard to its environmental impact. Our team will also do a full life cycle assessment of our project. Including every aspect of our design, fabrication, usage and end of life, it will help us identify our main sources of emissions in order to be able to reduce them event further in the following year.

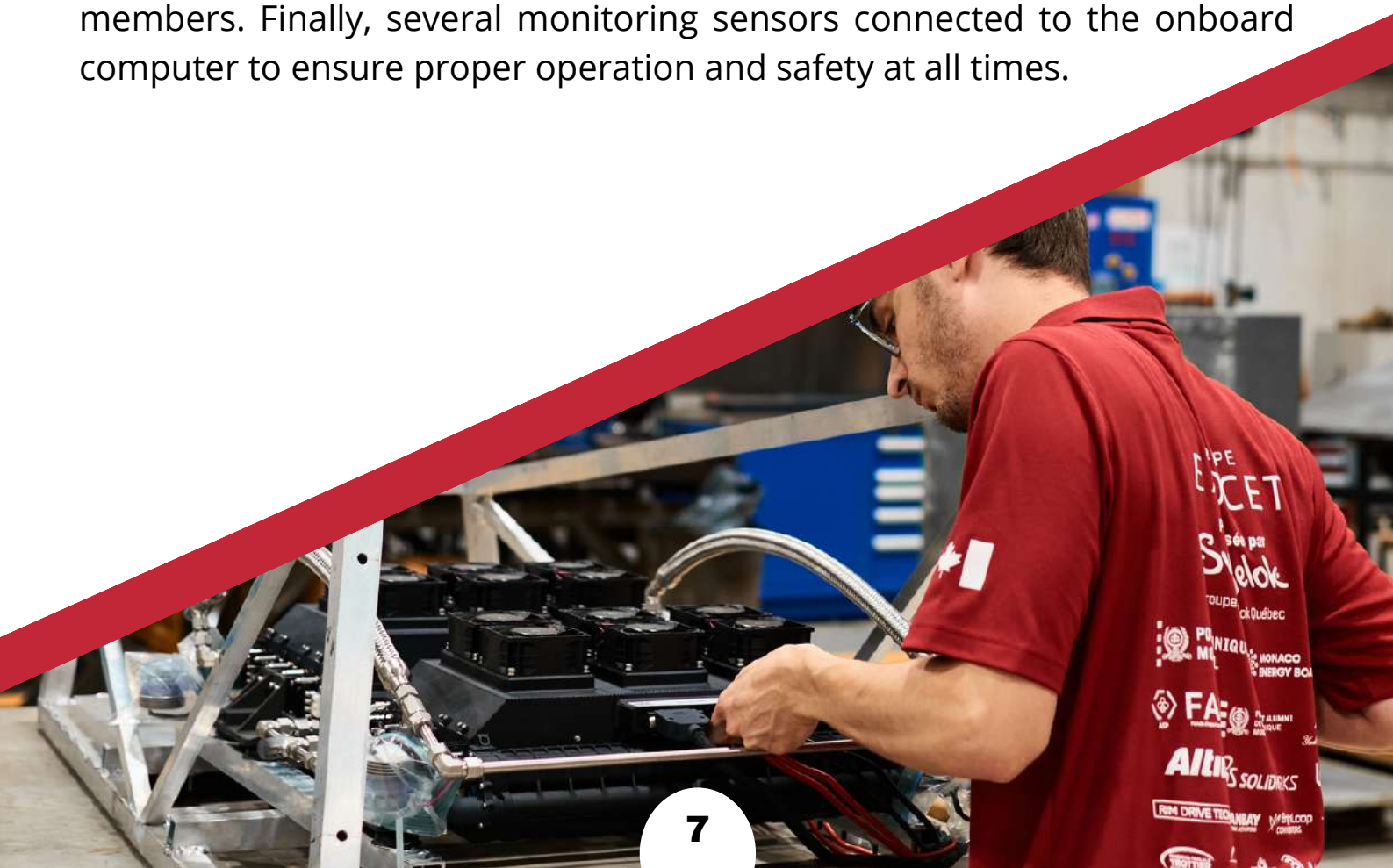
With the environment engraved on their hearts, Exocet has added a position for a Sustainable Development and Eco-design Analysis Manager to the team. This role will ensure that the team's decisions are aligned with our environmental objectives in addition to evaluating the environmental impact of the prototype.

# SUMMARY 2022-2023

The 2022-2023 year marked our first year of development for the second edition of our catamaran. Focused on research, design, and the development of our hydrogen system, the last year allowed all team members to surpass themselves and learn about this still relatively unknown technology.

The mechanical team members designed the hydrogen system, adapted the old structure to the new mechanical constraints, and refurbished the steering system and dashboard. They also took care to remove the covering and clean the structure of any residues to accommodate the new covering in 2023-2024.

The electrical team, on the other hand, was responsible for designing the electrical system that will control the entire boat and also ensure control of the hydrogen systems. Simultaneously, the onboard computer was completely rebuilt. PCBs were also designed and customized by team members. Finally, several monitoring sensors connected to the onboard computer to ensure proper operation and safety at all times.

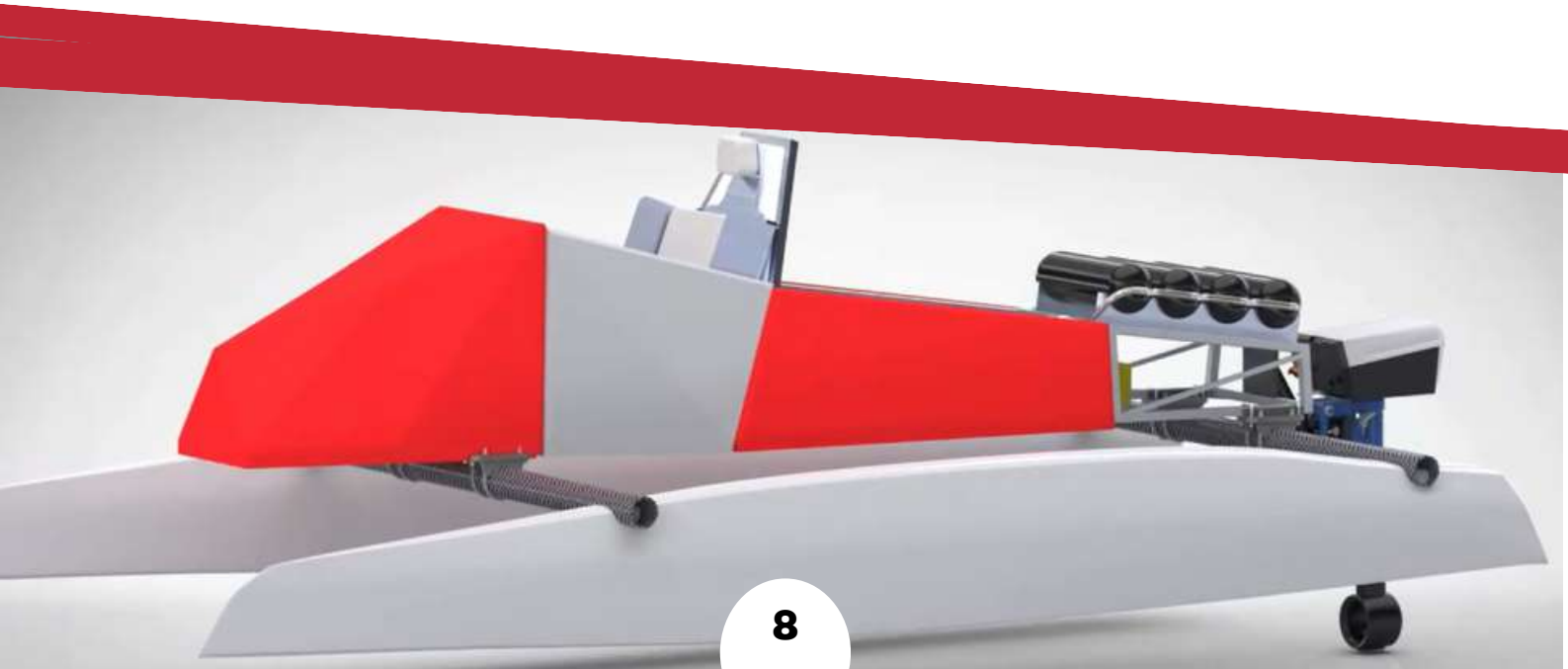


# OBJECTIVES 2023-2024

The current year presents several challenges and will be rich in learning for the team members. Having started the manufacturing last year, 2023-2024 year focuses on adjusting systems and putting them into operation, followed by multiple testing phases.

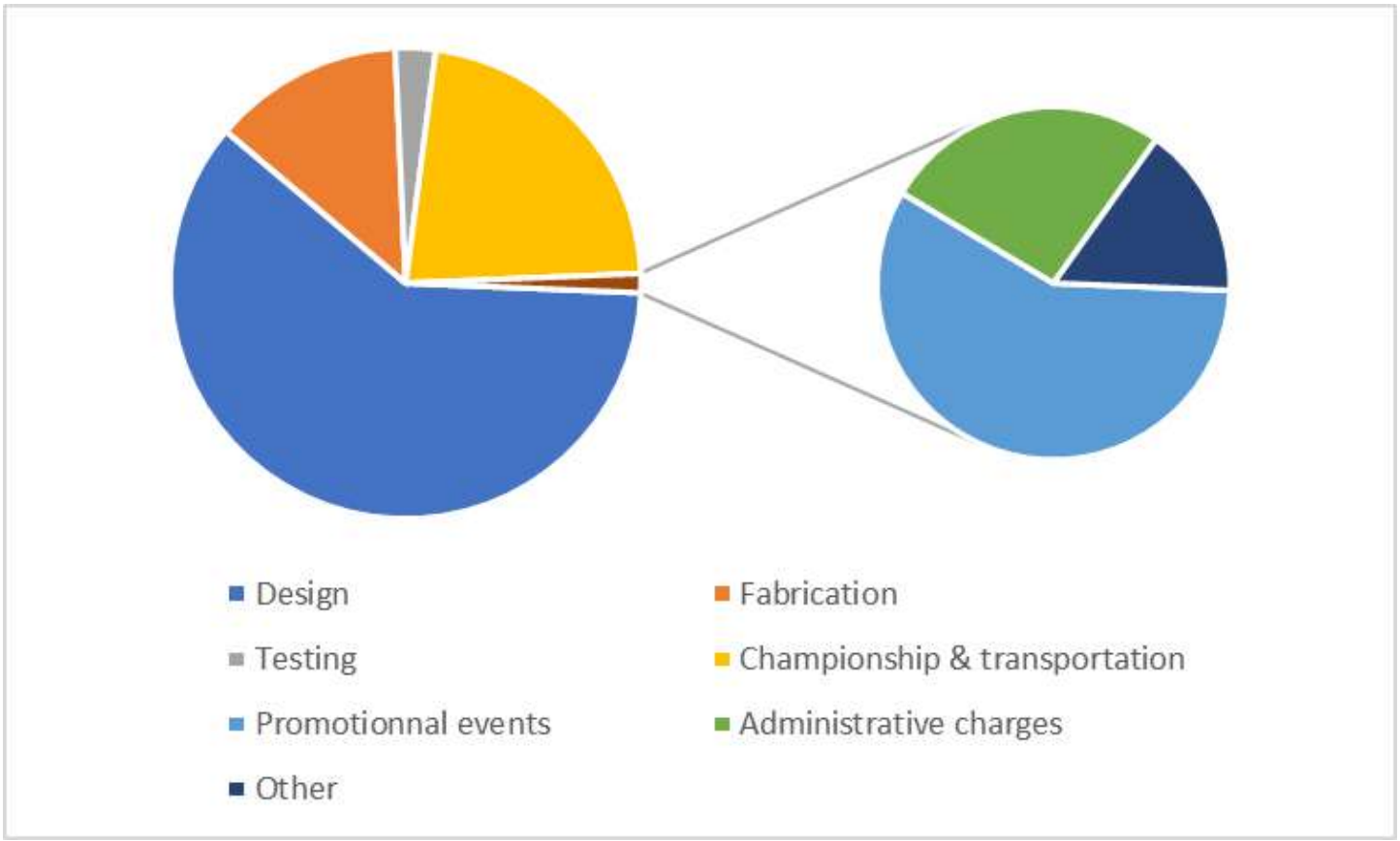
On the mechanical side, the assembly of the hydrogen system will be completed, and tests will be conducted. Initially, hydrostatic tests will be carried out to check for tightness. Then, hydrogen-nitrogen tests will ensure the proper operation of the system and the various safety protocols. Finally, tests with hydrogen will be conducted in a closed laboratory to validate that everything is in order and functional. Additionally, there is the development of the cockpit covering and the design of other systems to facilitate handling, such as a transport cart for hydrogen bottle filling.

For the electrical team, the challenge will be to ensure that the electrical system meets mechanical constraints and that all programs function. They will also need to develop the communication system that connects the pilot to the ground team. During testing, they will be responsible for simulating failures to test safety protocols.



# Budget 2023-2024

| | |
|---|---|
| Design | 70 000 |
| Fabrication | 15 167 |
| Testing | 3 190 |
| Championship & transportation | 25 789 |
| Promotional events | 880 |
| Administrative charges | 400 |
| Other | 240 |
| **Total** | **115 666 $** |



# WHY BECOME A PARTNER

To invest in Exocet is a great way to foster research and innovation in the sustainable development and the maritime industry. By our multiple activities as well as our participation in the *Monaco Energy Boat Challenge*, we are proud to be North American pioneers in the fields of green maritime technologies.

It is also an excellent way of recruiting young engineering talents from different backgrounds. Highly motivated and standing out by their advanced knowledge in high technologies such as hydrogen systems, our members will certainly be top tier future engineers and employees.

Our team members will also become part of great engineering companies around the world and will have great power in choosing suppliers during their careers. Helping us to know your products and services is a good way to help us being familiar with them.

Lastly, our multiple activities in the community as well as our media appearances, both local and international, will give increased visibility to your company, especially in the maritime and academic fields (see our visibility plans on page 11).

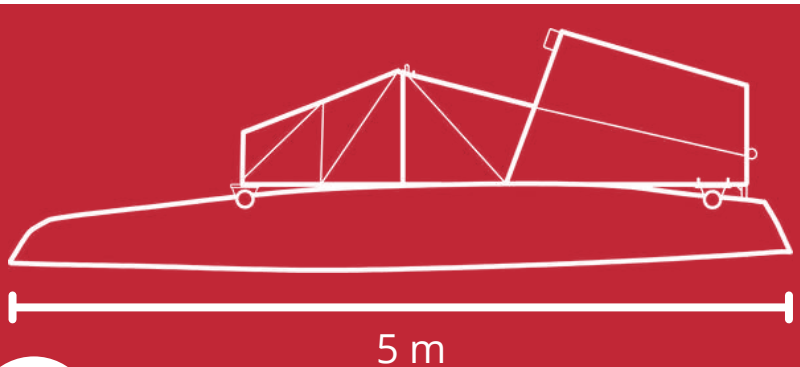
# VISIBILITY PLAN

| | SLOOP | CORTE | KETCH | GOÉLETTE | BRICK |
|---|---|---|---|---|---|
| Sponsorship* ($) | 500 to 999 | 1000 to 1499 | 1500 to 2499 | 2500 + | Most generous |
| Public thank on social platforms | ✓ | ✓ | ✓ | ✓ | ✓ |
| Logo on our boat | Small | Medium | Medium | Large | Massive |
| Logo on our shirts | | | ✓ | ✓ | ✓ |
| Mention "team brought to you by" | | | | | ✓ |

*The monetary value of material sponsorship will be used

Nominal dimensions of logo on the boat :

| | |
|---|---|
| Massive | 45 cm |
| Large | 30 cm |
| Medium | 20 cm |
| Small | 10 cm |



# Contact us

Don't hesitate to contact us if you are interested in a partnership, sponsorship or if you have any questions by using the following address: exocet@polymtl.ca or by contacting a member of our team directly :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# EXOCET IN PICTURES