BME Formula Racing Team
Project review
and sponsorship offer
Overview

This prospectus outlines a unique business opportunity to get involved in Formula Student and the technical higher education by sponsoring the BME Formula Racing Team.

The various sponsorship levels provide cost effective ways for a company to promote its products and gain awareness among a wide audience of students, industry professionals and the general public through our team’s promotional events and media exposure.

The BME Formula Racing Team are a non-profit organization of university students that design and build formula style (open-wheel and open-cockpit) race cars and compete in the Formula Student competitions. This complex project which includes the design, production, testing and not least the management helps the participating student in a unique way to put theory into practice in a competitive environment and develop a wide range of technical and commercial skills through direct experience.

Competing In the high-level international field of Formula Student we are proud to have achieved better results year by year and in order to keep up the continuous development we need the best partners.
The Formula Student

Formula Student (FS) is Europe’s most established educational motorsport competition, where teams of university students compete in designing and building a race car. The contest is held in 7 countries across Europe: in Silverstone (England), Hockenheim (Germany), Melk (Austria), Fiorano (Italy), Catalunya (Spain), Moscow (Russia) and Győr (Hungary). Backed by the industry and high-profile engineers such as Shell or Ross Brawn, the team principal of MERCEDES GP PETRONAS Formula One Team the competition aims to inspire and develop enterprising and innovative young engineers.

In the 4-day competition students present their understanding of the car, cost analysis and business case to the judges at the static events which give 40% of the overall score. In case the cars comply with the technical and safety rules of Formula Student they are taken to the racetrack where teams continue competing at the dynamic events.

In addition to technical skills, students acquire management, marketing and people skills - so vital across all sectors of employment.
Scrutineering in Silverstone
<table>
<thead>
<tr>
<th>Flag</th>
<th>CAR 41</th>
<th>TU Budapest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flag</td>
<td>CAR 74</td>
<td>Brno University of Technology</td>
</tr>
</tbody>
</table>
“I never fail to be impressed each year by the amount of talent shown by the Formula Student competitors. When it comes to giving the younger generation of engineers a chance to demonstrate their skills, there really is no substitute for Formula Student.”

Ross Brawn OBE, Team Principal, MERCEDES GP PETRONAS Formula One Team and Formula Student patron
The BME Formula Racing Team was founded in 2007 on the purpose of participating in the Formula Student series establishing a tradition at the TU Budapest and also in Hungary. During 4 years of existence we have built 4 race cars and more than 180 people have taken part in design, procurement, production, building and have dealt with management, logistics and business affairs. Currently we have 30 active members among whom you can find mechanical, automotive, electrical engineers and economics students because the wide range of knowledge these four faculties represent is all needed to build a race car and to participate successfully in the competition.

We feel important to integrate and synchronize our activity with the correspondent university courses and to create a closer cooperation with the determinative university departments and companies. We also aim to gain recognition among teachers and industry professionals and to become more popular on the campus and nation-wide.

Our aim in the 2012 season is to supervise the plans of our current car and develop it based on the experiences gained at the competitions. At Formula Student Germany in Hockenheim our target is the Top 10 and at the Hungarian competition the undoubted expectation is to step on the podium.
Our results

FS competition results:

<table>
<thead>
<tr>
<th>Year</th>
<th>Location</th>
<th>Overall Result</th>
<th>Entrants</th>
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<tr>
<td>2008</td>
<td>Hockenheim</td>
<td>2nd best rookie team</td>
<td>78</td>
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<tr>
<td></td>
<td>Overall</td>
<td>49th place</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>Fiorano</td>
<td>16th place</td>
<td>38</td>
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<tr>
<td>2009</td>
<td>Hockenheim</td>
<td>58th place</td>
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<tr>
<td></td>
<td>Silverstone</td>
<td>3rd place (Class 3)</td>
<td></td>
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<tr>
<td>2010</td>
<td>Silverstone</td>
<td>20th place</td>
<td>84</td>
</tr>
<tr>
<td></td>
<td>Overall</td>
<td>2nd place</td>
<td>84</td>
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<tr>
<td></td>
<td>Győr</td>
<td>2nd place (Class 2)</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Overall</td>
<td>6th place</td>
<td>28</td>
</tr>
</tbody>
</table>

Educational results:

- More than 30 “Scientific Students’ Associations” dissertations
- 20 theses
- Several scientific articles
- 3 FISITA Student presentation
**FRC-04 main parameters**

**CHASSIS**
- Frame: steel tube spaceframe
- Bodywork: carbon fibre

**SUSPENSION**
- Type: unequal length double A-arms, pullrod (front) & pushrod (rear) actuated Öhlins spring/damper units
- Brake type: dual cycle brake system

**ENGINE**
- Type: Yamaha R6 5SL
- Cylinder layout: 4 cylinders inline
- Displacement: 600 cc
- Max. power: 80 BHP @ 13000 RPM
- Max. torque: 52 Nm @ 8200 RPM

**DRIVETRAIN**
- Secondary drive: chain drive
- Gear: 4 gear, modified sequence, sequential, electropneumatically actuated, with paddle shifting
- Differential: Drexler LSD

**ELETRONICS**
- Engine Management: MoTec M400
- Sensors: wheel speed, steering wheel angle, spring travel, accelerations, tyre pressure, tyre temperature
- Datalink: CAN wireless gateway
- Other: programmable PDM, simulator, LCD screen, strain gauges on suspension rods

**Specifications**
- Total mass: 225 kgs
- Accelerating from 0 to 100 km/h: 3.7 s
- Max. speed: 200+ km/h (depending on the final drive ratio)
At the beginning of the year 2009 the idea of building an electric or hybrid car rose in the BME FRT. The group which deals with the new project goes by the name of FRT FSE (Formula Racing Team, Formula Student Electric). The first car was built in 2011 and is purely electric powered. Before the fairly costly foreign competitions we have entered the MVM Energy 2.0 Race of which we have won the Race and Prototype Cars category. Then we have participated in the Formula Student Electric in Torino and came in 6th place as the best newcomer team.
Results of our electric powered car:

2011

Formula Student Electric & Hybrid, Torino:
overall 6th place (16 entrants)

MVM Energy 2.0 Run, Budapest, Racecar and Prototype Category:
overall 1st place
absolute fastest lap
absolute longest distance covered

MNASZ national slalom championship

48th M+F Toyota Cup, Kecskemét, Green category:
1st, 2nd, 3rd place, overall 7th place (73 entrants)

49th M+F Toyota Cup, Kecskemét, Green category:
1st, 2nd, 3rd place, overall 2nd place (50 entrants)
FRCE-01 main parameters

**ENGINES**
Type: 2 pieces of 4 * 3 phase sinusoidal synchronous engines with permanent magnets, developed by the EV-Sport
Nominal power: 20 kW (per engine)
Peak power: 50 kW (per engine)
Nominal voltage: 60V
Rated current: 52A (4 * 3 phase per engines)
Engine management: developed by EV-Sport

**ACCUMULATORS**
Type: 2 pieces of LiFePO4 accumulator pack developed by the team
Rated voltage: 158.4V
Capacity: 36.8 Ah

**CHASSIS**
Type: tubular-steel frame
Bodywork: glass fiber, carbon fiber

**DRIVETRAIN**
Secondary drive: chain drive
Half-shafts: homocinetic joints at both ends of the axles

**SUSPENSION**
Type: unequal length double A-arms, pushrod actuated Öhlins spring/damper units
Braking system: dual cycle hydraulic brake system, regenerative braking on the rear axle
Sándor Kling, driver, PhD student, composite team
We do our activities within the legal frames of the Formula University Public Benefit Organization. The goal of the organization is to expand technical students’ theoretical professional knowledge with field experience by involving them in national and international non-profit science projects and student competitions and therefore to improve the standard of their professional preparedness, their position in the labor market and that of the technical higher education.
By sponsoring or supporting the BME FRT, your company will gain direct contact with 15,000 technical university students and determinative departments. You can meet some of the **most talented engineering students**, take part in their education and so assure that they acquire the knowledge your company needs.

We can successfully communicate the values, new developments and carrier opportunities of your company on campus by our university connections and can raise awareness in the general public by **exposure in the media**. You can also strengthen the company’s positive image by supporting a sport and educational project.

Depending on the extent of the support your company’s logo will be placed on team clothing, on the car, on posters and flyers.
We help your company to realize its communication targets on several platforms as follows:

- **at TU Budapest** we provide the opportunity to hold a presentation to introduce your company

- **Media** – thanks to our successes we can take advantage of the growing awareness and popularity so the team’s regular appearance in the media is assured.

- **Events** – each year we participate at the Job Fair of the TU Budapest and the Automobile Technology Expo, organize a Professional Day and participate in international competitions.

- **Facebook** – more than 5000 fans, outstandingly the most popular Formula Student team on Facebook.

- **Youtube** – the 2010 promovideo has been watched by more than 39,000 people in less than 1 year and many of our videos have more than 10,000 viewers. Moreover we regularly make videos of various subjects (e.g. at the venues of the competitions).

- **Homepage** – 50 average daily visitors, who stay for 3 minutes on average

- **Jobbox** – we promote the carrier opportunities of our sponsors to help find the best workforce
Types of support

Financial support

It is inevitable to buy certain parts, devices and in addition we have to raise money for the entry fees of the competitions and for the travelling. We can receive financial support through the Formula University Public Benefit Organization.

Material support

Most of the resources we use are material supports. All kinds of material, tools and devices we can use for building the race car of facilitates our work (work clothing, safety equipment) helps us.

Vocational training contribution

Our team is able to receive this kind of support by the Budapest University of Technology and Economics’ Department of Automobile Engineering.

Professional support, manufacturing

Approximately 90% of the race cars are uniquely designed by us however we are not able to entirely fabricate them ourselves. We are in need of partners who have the technology and the machines to produce them.
Sponsorship levels

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<th>DIAMOND</th>
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**ON RACECAR BODYWORK\(^2\)**

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1 - One year support, accepted till 01.05.2012.
2 - One year support, accepted till 01.05.2012.
3 - Our supporters’ up to date job offers on our homepage with Facebook support.

In case of the supports received before February 1st 2012 we provide 40% bigger logos at each level!
The Formula Student and the Formula Student Electric teams have distinct budgets and individually provide their sponsors with exposure. For further information please contact our Sponsorship team.
Be part of our success!
Your relationship managers

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