

SHELL ECO-MARATHON AMERICAS 2016

OFFICIAL RULES

CHAPTER II



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FOREWORD



Dear teams, participants, friends and enthusiasts,

Following the success of our first year in Detroit I hope the history and spirit of our new host city will continue to inspire all teams to push the boundaries of fuel efficiency even further. Taking to the streets of the Motor City once more will hopefully motivate you on your quest for personal bests, while addressing the global challenges we face around finding new solutions for the future of energy and mobility.

The grassroots of Shell Eco-marathon are based on the ingenuity, hard work and dedication of students from around the world. I would like to remind you that all activities related to your Shell Eco-marathon project must be carried out by the registered teams and its participants. The Organisers reserve the right to withhold technical inspection approval for teams which show substantial knowledge gaps over the design of their vehicle and the functional principles of its component parts.

Remember that you need to get to the competition prepared, with your vehicle ready. So it's highly important to:

- **Read the Shell Eco-marathon 2016 Global Rules, Chapter I carefully.** The document presents all technical and safety rules applied to both Prototype and UrbanConcept classes.
- **Watch the Tech Tips on YouTube.** The videos explain the technical rules in an easy-to-understand way. We have added four new videos for this season.
- **Read this document carefully.** The Chapter II Rules will present to you specific logistics information you need ahead of Shell Eco-marathon Europe 2016.

I look forward to seeing you from April 21-24, 2016 in Detroit!

Norman Koch

Shell Eco-marathon Global Technical Director

1. GENERAL

The Shell Eco-marathon Official Rules 2016 Chapter I and the Americas Rules 2016 Chapter II apply during the entire duration of the Teams' presence onsite.

By participating in Shell Eco-marathon, Participants recognize that the event organizer, Shell Oil Company ("Event Organizer"), and more generally any company belonging to the Shell Group, have the right to use your image for advertising, marketing or promotional purposes associated with this event.

Shell Eco-marathon Americas 2016 will be held from April 21-24, 2016 at the Cobo Center in Detroit, MI, USA.

The campsite will be open to Teams from Tuesday, April 19th at 4:00 PM and will remain open until 9:00 AM on Monday, April 25th to allow for accommodation on Sunday night. Vehicle storage in the exhibit hall will also be provided.

Teams will be offered the opportunity to attend behind the scenes tours* on Tuesday, April 19th with our OEM and Supplier partners. SAE (Society of Automotive Engineers) will host a career day* on Wednesday, April 20th. The career day will include lunch and a student roundtable discussion. (*details subject to change.)

Teams will have access to the Paddocks on Wednesday, April 20th after registration (beginning at 4:00 PM) and need to clear their paddock by 9:00 AM Monday, April 25th. The Paddocks will close every evening at 11:59 PM and reopen at 6:00 AM.

ARTICLE 100: ENTRIES

Schools:

Secondary or technical schools preparing pupils for vocational training certificates, professional certificates or official second-level school-leaving examinations.

Universities/Technical Colleges:

Educational establishments preparing students for higher education diplomas (senior technician certificates, university-level technology diploma, etc.).

Establishments of higher education awarding university-level degree diplomas or student associations.

Teams will consist of no more than 8 official student Team Members (Participants), one of whom is the Team Manager, although additional students may support the Team as required. Only the registered Participants will receive credentials when they check-in for the competition. Individuals who do not carry credentials will not be allowed into the competition area. One faculty advisor should be designated by the Team to receive credentials for admittance to the garage area.

Teams with Participants who are under the age of majority in their state/province and/or country of origin must be accompanied by a professor, teacher or adult leader. Teams with no Participants under the age of majority in their state/province and/or country of origin should be accompanied by a professor, teacher or adult leader except under special circumstances. Such Teams should contact Event Organizer regarding such exemptions.

Teams with four (4) or more participants under the age of 16 must be accompanied by at least one adult per 4 under age participants in addition to the professor, teacher or adult leader.

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Drivers and Reserve Drivers shall be **at least 16 years old** on the first day of the competition and must be a licensed driver in their state/province or country of origin.

ARTICLE 101: DAMAGES NOT COVERED BY THE EVENT ORGANIZER

Any damage caused by drivers or Teams to circuit facilities and surroundings and/or to Shell Eco-marathon facilities shall be charged to the teams having caused said damage. The deposit will be used to cover these damages, but liability is not limited to this amount.

2. SAFETY

ARTICLE 102: SAFETY RULES

As with any motorsport activity, there should be an understanding that certain inherent risks will be present. Recognizing and controlling such risks are vital for the well-being of people and local surroundings.

Therefore, compliance with safe driving, general behavior and sporting rules will be mandatory for everyone. All team members must comply with safety measures and notify the Event Organizer about any anomalies or incidents. In the event of dangerous conditions, team members are required to leave the affected areas immediately.

All the areas covered by the event will be monitored by the Event Organizer to assist teams in ensuring safe practices and behavior.

Team Managers shall be responsible for enforcing the following regulations with their team members, which is in the best interests of all participants and the success of the whole event. Any non-compliance with regulations will lead to the following penalties.

ARTICLE 103: SMOKING

Shell draws participants' attention to the fact that smoking is extremely harmful to health. In addition, the event type (similar to a car-racing competition) requires the handling and storage of dangerous components and fluids such as petrol, hydrogen and other fuel materials.

For safety reasons, smoking is specifically not permitted in the Cobo Center, near the welding tent, fuel storage, Stop and Go area, paneling area and Start/Finish areas. Please keep in mind that the Cobo Center is a non-smoking venue. Smoking includes electronic-cigarettes and is only allowed in the external designated smoking areas.

ARTICLE 104: DRUGS AND NARCOTICS

US law strictly forbids the distribution and the consumption of narcotics. Law enforcement officers (Police) may intervene anywhere on the premises for narcotic searches. In addition to legal prosecutions from the authorities, any drug and narcotics related breach of the regulations will be treated as a 3rd infraction of the Team, even if no prior violation has occurred.

ARTICLE 105: ALCOHOL

Shell draws participants' attention to the fact that the abuse of alcohol is harmful to health.

No alcoholic beverages are allowed at the Event or on the track premises, paddock or campsite.

We reserve the right to intervene and remove from the Event, and possibly apply a penalty (**see Article 106**), to any person found to be in a drunken state. Abuse or adverse behaviors might lead to a team's immediate disqualification, **even if no prior violation has occurred**.

ARTICLE 106: PENALTIES

Event Organizer will exclude, disqualify or otherwise penalize any competitor who, in the judgment of the Event Organizer, will not have respected the safety rules expressed herein.

Except otherwise specified, Event Organizer will apply the following penalties for the following infractions:

- Non-compliance with on-track safety or driving rules (unsafe or unwise behavior);

- Non-compliance with off-track safety rules including but not limited to in the paddocks, student lounge, campsite, and other off-track facilities.
- 1st infraction: Formal warning to the Team Manager;
- 2nd infraction: Best overall attempt invalidated at the end of the competition;
- 3rd infraction: Immediate team disqualification.

CAMPSITE RULES

Detailed information regarding the campsite will be provided shortly via the newsletter and the FAQ on the website.

ARTICLE 107: NOISE LEVEL

In the interest of neighborliness and respect for others, noise levels shall be kept to a minimum between 11:00 PM and 7:00 AM at the campsite.

The safety and security team will have complete freedom and power to impose respect of the appropriate noise level during these hours.

ARTICLE 108: BARBECUE COOKING AREA/FOOD

Please note that cooking inside the Cobo Center is not allowed.

PADDOCK RULES

ARTICLE 109: MOVING PROTOTYPE AND URBANCONCEPT VEHICLES

In all places other than on the track, Prototype and UrbanConcept vehicles must be moved without the use of the engine. They must be manually pushed or pulled by an accompanying team member. This applies also on the pit lane and the paddocks.

It is strictly forbidden to run engine-powered Prototype and UrbanConcept vehicles outside of the competition or test track.

ARTICLE 110: EMERGENCY EXITS

Fire and emergency exits must be kept clear at all times from any obstructing equipment or vehicles.

ARTICLE 111: PADDOCK AREA HOUSEKEEPING

Shell requires participants to exercise proper care in their stands especially regarding:

- Stand cleanliness;
- Electrical connections (e.g. cabling on ground to be duct-taped or appropriately secured);
- Display of regulatory stickers and posters, e.g. the "no-smoking" and safety posters that will be supplied by the Event Organizer to each team upon their arrival. *NB: to develop bestpractice sharing in safety, all teams are encouraged to display specific safety pictures or posters in their stands;*
- Clear separation between food/drink and hazardous (toxic/noxious/flammable/solvent) products; Have separate storage e.g. metal box for these products;
- It is forbidden to cook in the paddock;

- Respect of “how to work with hot sources” rule on hydrogen stands;
- Welding services are available and will be done outside in a designated area;
- Wearing of personal protection equipment; and
- Proper use of portable electric equipment and its protection.

ARTICLE 112: SAFETY DATA SHEETS (SDS)

Except for approved race fuels or energy sources, upon request by the Event Organizer all teams should be able to provide the SDS of any products they use in their stands, e.g. solvents, cleaning agents, chemicals, etc.

ARTICLE 113: SAFETY WALKS

Structured safety walks by the Event Organizers will run during the entire event (day and night), to ensure that safety rules are complied with.

3. COMPETITION/PRACTICE

ARTICLE 114: DEFINITION OF COMPETITION

Prototype and UrbanConcept vehicles will use the same track but not at the same time during practice and competition.

Definition: For the attempt to be valid, Teams must complete ten laps for a total distance of .6 miles with an average speed of 15 mph. One lap equals .6 miles; the time requirement for Prototype and UrbanConcept vehicles is 24 minutes (subject to confirmation in the daily Driver briefings).

UrbanConcept: The driver must stop once per lap. The point where to stop will be specified by a panel or a specific road-marking under the control of a Track Marshal. The stop must be a full stop of the wheels. It must take place at this specified point unless other vehicles have already stopped and no space is available on the track to do so. In case of non-respect of the designated place for this stop or a 'rolling stop' the concerned attempt will be invalid.

Attempt: Each team will be limited to a certain number of attempts for the event: the best result will be retained for the final classification.

When the vehicle crosses the start line, an attempt is counted. Even if the vehicle stops near the start line, a new start will not be granted for the attempt in question.

ARTICLE 115: ORDERING MANDATORY EQUIPMENT

This article applies to teams that do not yet have the required equipment in their possession. The following equipment is mandatory and must be purchased via the Event Organizer:

Fuel tanks (gasoline, diesel, ethanol and GtL fuel)

Standard fuel tanks shall be obtained from Event Organizer. These tanks are mandatory and shall not be modified.

- Prototype: 30, 100 or 250 cc
- UrbanConcept: 30, 100, 250 or 350 cc

ARTICLE 116: DRIVING UNDER THE INFLUENCE OF ALCOHOL

Driving under the influence of alcohol is forbidden.

Before using the track either for test runs or the competition, all registered drivers may be subject to random alcohol level checks. Such checks will be systematically conducted in case of serious incidents or accidents on the track.

Alcohol levels, measured with a breathalyzer, must be below the value of 0.1 milligram of alcohol by liter of exhaled air (mg/l).

Any alcohol-related breach of the regulations by drivers will be treated at least as a 2nd infraction of the team, even if no prior violation has occurred.

In addition, the affected driver will immediately be banned from accessing the track as long as his/her alcohol level is above the stated limit. The reserve driver may substitute the main pilot if she/he is eligible to drive.

Any second alcohol-related infraction will lead to the immediate disqualification of the entire team.

ARTICLE 117: RFID TAG ATTRIBUTION

Four RFID tags will be attributed to each team, one for the vehicle, one for the Team Manager and one for each driver.

This tag is your reference for:

- Briefing presence control;
- Technical inspection access, process and final status;
- Competition access, race queue entrance, starts and finishes measurement.

ARTICLE 118: MANDATORY BRIEFING

The morning driver's briefing is mandatory for the Team Manager and all drivers of each team every day.

If the Team Manager is not present at this briefing, the vehicle will not be authorized on track for the whole day.

If only one driver attends the briefing, only this driver will be authorized on track for the whole day.

After each morning briefing the Team Manager and drivers must ensure they get their RFID tag scanned by the Organizers to recognize that they attended the meeting.

ARTICLE 119: TRACK ACCESS CONDITIONS

Track access is authorized for Prototype and UrbanConcept vehicles only during official opening hours.

ARTICLE 120: PEDESTRIANS

With the exception of the Track Marshals or any person duly authorized by them, no pedestrian is allowed on the track.

In public areas and on public roads pedestrians are required to use sidewalks.

ARTICLE 121: BREAKDOWNS AND OTHER INCIDENTS

If due to an incident the race is stopped and the red flag used, all vehicles on the track at this time will receive one additional attempt.

ARTICLE 122: TIMEKEEPING

All vehicles will be equipped with an electromagnetic transponder that will be fitted after vehicle inspection using adhesive tape or nuts, inside or outside the vehicle according to the vehicle's characteristics. The transponder must be returned to the same location at the end of the event.

ARTICLE 123: START AND FINISH OF COMPETITION

Only vehicles in full working order (i.e. complete chassis and body together) and those having passed both safety and technical inspection will be allowed in the queue to access the fuelling tent and starting line.

The vehicle may be accompanied by a maximum of two persons with ID badges (not including the driver). Once the vehicle has left the starting line, all team members have to leave the starting area.

The starting area is dedicated for the driver to take his/her place in the vehicle under safe conditions, and to close the vehicle body. It is forbidden to work on the vehicle in this area. In case of difficulties to start, a maximum of one minute will be granted to try again, after which time the team must return the vehicle to the paddock or return to the end of the queue. No equipment will be tolerated in the starting area, e.g. heater system, trolley, toolbox, etc.

Drivers must wait until the starting line is clear before starting their attempt. They must wait for a signal from the Track Marshall (green flag) before starting. At the starting line, vehicles will start one by one. Vehicles must be at a full stop and are not allowed any outside assistance during starting. Any pushing of the vehicle is prohibited.

At the finish line: Competitors must refrain from any work on their vehicles prior to inspection of the vehicle by the Organisers. Fuel Marshals are the only people authorized to perform fuel consumption measurement.

4. TENTATIVE TIME SCHEDULE

The final schedule will be confirmed every day at the mandatory morning drivers briefing. The Event Organisers reserve the right to change this schedule at any time in case of poor weather conditions or any other unpredictable circumstance.

(Note: Lunch and Dinner will be provided Thursday – Sunday. Breakfast is also provided for the camping students)

Tuesday, April 19, 2016

9 AM–4 PM Behind the Scenes OEM Field Trips

4 PM Campground Opens

Wednesday, April 20, 2016

9 AM – 4 PM SAE Career Day / Student Roundtable

12 PM Pre-Registration Opens to Eligible Teams

3–9 PM Team Registration Opens

4 PM Paddock Opens

11.59 PM Paddock Closes

Thursday, April 21, 2016

6 AM Paddock Opens

8 AM Registration & Tech Inspection Open

7 PM Tech Inspection Closed

7 PM Drivers Virtual Track Tour MANDATORY (ALL DRIVERS MUST ATTEND ONCE)

11.59 PM Paddock Closes

Friday, April 22, 2016

6 AM Paddock Opens

7 AM Drivers & Team Leader Meeting MANDATORY (ONLY Drivers & Team Managers)

Group Photo (Time Will Be Announced Once Finalized)

8:30 AM Official Opening Ceremonies and Team Safety Meeting (All)

Technical Inspection will not be open during the Opening Ceremonies

10 AM Tech Inspection Open

7 PM Tech Inspection Closed

7 PM Drivers Virtual Track Tour MANDATORY (ALL DRIVERS MUST ATTEND ONCE)

11.59 PM Paddock Closes

Saturday, April 23, 2016

6 AM Paddock Opens

7 AM Drivers & Team Leader Meeting MANDATORY (ONLY Drivers & Team Managers)

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8 AM Competition Start

11.59 PM Paddock Closes

Sunday, April 24, 2016

6 AM Paddock Opens

7 AM Drivers & Team Leader Meeting MANDATORY (ONLY Drivers & Team Managers)

8 AM Competition Start

6–7:30 PM Awards Ceremony

11.59 PM Paddock Closes

Monday, April 25, 2016

9 AM Cobo Center Closed to Students

5. MISCELLANEOUS TERMS AND CONDITIONS

ARTICLE 124: TAXES

Prizes will be awarded in the name of the School for the Team registered for the Event. Winning Schools are responsible for all federal and state taxes related to the prize, if any.

ARTICLE 125: EXPENSES

Each Team shall be granted a stipend to assist with travel cost to/from the Event. The amount of this stipend is specified in Article 130. Each Team is responsible for all other costs and expenses associated with participating in the Event.

ARTICLE 126: THIRD PARTY RIGHTS

By entering, each Team warrants and represents that its vehicle is original and does not infringe, defame or otherwise violate the rights of any third party; does not violate any federal, state or local laws or ordinances; and does not utilize the property of others without express permission to do so.

ARTICLE 127: TRANSFER OF PRIZES

No substitution or transfer of prizes. Shell reserves the right to award alternate prizes in the Event a prize becomes unavailable. Shell reserves the right to not award any prize.

ARTICLE 128: DISQUALIFICATION

Shell shall have the right, at its discretion, to disqualify any entries that they deem to be obscene, defamatory or otherwise not in good taste.

ARTICLE 129: RELEASE OF LIABILITY

Shell Oil Company and its parent, affiliate and subsidiary companies and all of their respective officers, directors, employees, shareholders, representatives and agents shall have no liability and will be hold harmless by Team Members and Schools for any claim, action, liability, loss, injury or damage to any Team Member, Schools and/or any other person or entity, including personal injury or death to any person or damage to personal or real property, due in whole or in part, directly or indirectly by reason of participation in this contest, or the acceptance, possession, use or misuse of a stipend and/or prize (including any travel or related activity).

Team Members and Schools acknowledge that they will be required to sign an Assumption of Risk Waiver and Release from Liability Agreement provided by Shell in order to participate in the Event. Team Members who are under 18 years of age may have to have additional documents signed by their parents and/or guardian.

ARTICLE 130: TRAVEL ALLOWANCE

The travel allowance set forth shall be given by Shell to each registered Team traveling from either North, Central or South America upon their arrival at the competition. For all non-Americas teams, special permission will need to be given by the Event Organizer. The distances are measured from the central administration building or main campus address of the registered School to the address of the event location. If there are any uncertainties about distance measures, the final decision will be made by the Event Organizer.

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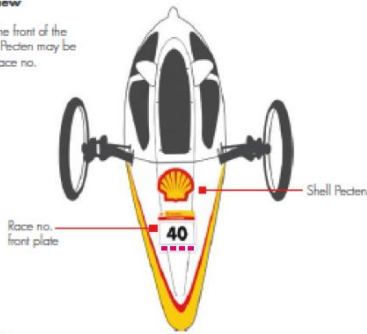
FROM	TO	ALLOWANCE
0	250 Miles	\$150
251	500 Miles	\$250
501	750 Miles	\$500
751	1,000 Miles	\$750
1,001	1,500 Miles	\$1,000
1,501	2,000 Miles	\$1,500
2,001	Or More Miles	\$2,000

6. IDENTIFICATION OF VEHICLES

PROTOTYPE AND URBANCONCEPT

FRONT View

Note: On the front of the vehicle, the Pecten may be above the race no.

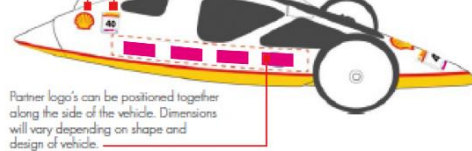


SIDE View

Shell Pecten, R and L sides

Race no. side plate

Partner logo's can be positioned together along the side of the vehicle. Dimensions will vary depending on shape and design of vehicle.



FRONT View

Note: On the front of the vehicle, the Pecten may be above the race no.

Race no. front plate

Shell Pecten

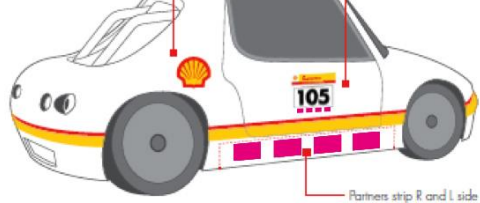







SIDE View

Shell Pecten, R and L side

Race no. side plate

Partner logo's can be positioned together along the side of the vehicle. Dimensions will vary depending on shape and design of vehicle.



IDENTIFICATION	POSITION	FORMAT	NUMBER	NOTES
Shell logo 	Right side Left side Front of vehicle	215 mm x 200 mm	3	Mandatory
Race no. plate 	Right side Left side Front of vehicle	200 mm x 260 mm	3	Mandatory
Partner strip 	Right side Left side	L = 770 mm x 80mm	2	Mandatory
Safety and security stickers 	Determined by Technical Team after valid inspection		1 each	Awarded after successful inspection
Helmet stickers 	Right side Left side	L = 130 mm x 20mm and 46.7mm x 46.7mm	3	Optional