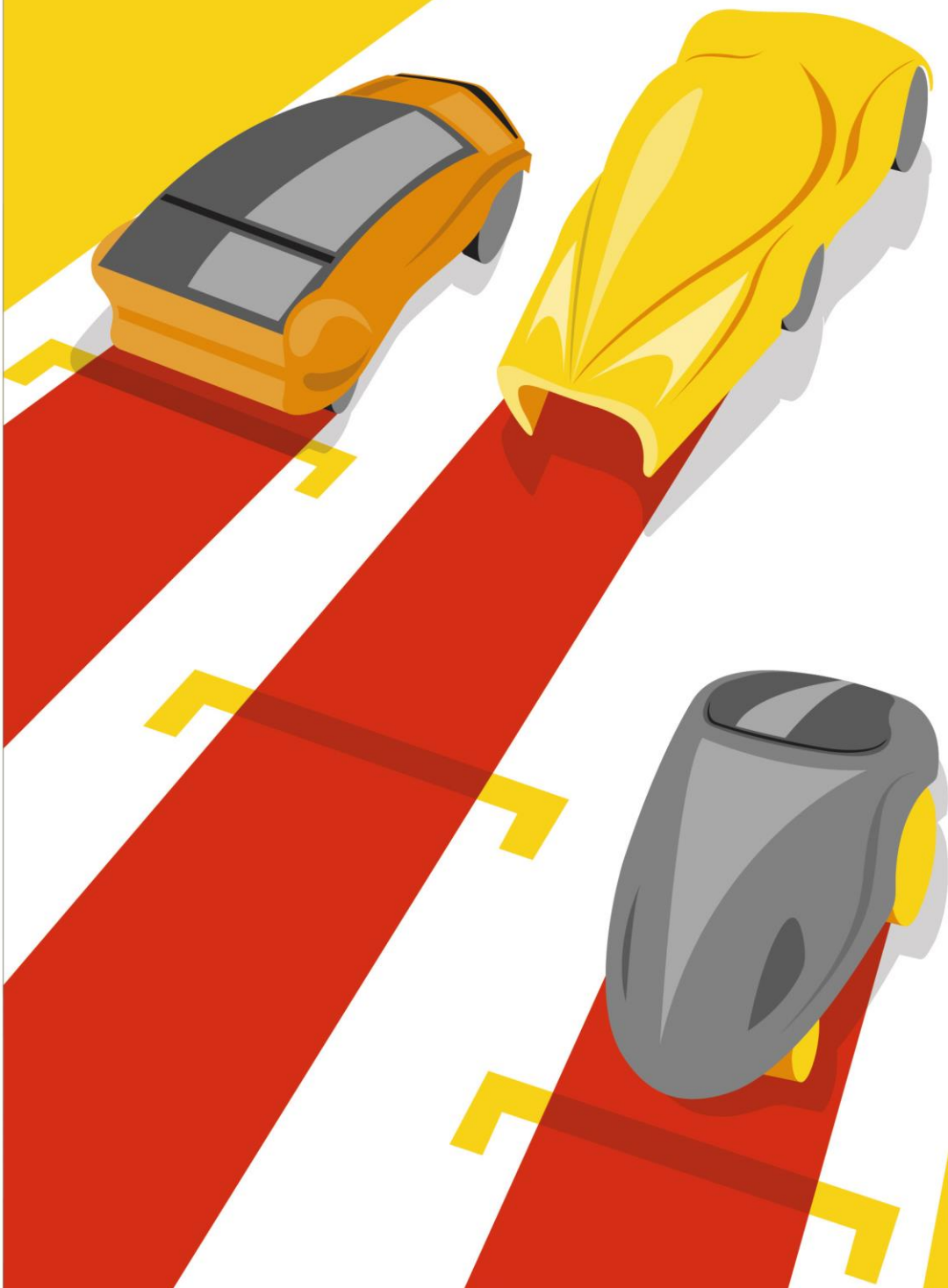




Shell
Eco-marathon

DRIVERS'
WORLD
CHAMPIONSHIP

OFFICIAL RULES
CHAPTER III



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1. DRIVERS WORLD CHAMPIONSHIP RULES

1A. GENERAL

ARTICLE 300: TERMS IN THIS DOCUMENT

DWC:	Shell Eco-marathon Drivers' World Championship
Visiting Team:	A Team invited to participate in the DWC Grand Final from the DWC Qualifiers
Parc Fermé:	Secured area where competition vehicles are inspected and teams are not allowed to make modifications without approval.
DWC Qualifier:	DWC competitions at the Americas and Asia events. There will be no DWC Qualifier at the Europe event in 2019, only the DWC Grand Final.

ARTICLE 301: DEFINITION OF COMPETITION FOR THE DRIVERS' WORLD CHAMPIONSHIP QUALIFIER

The Shell Eco-marathon Drivers' World Championship Qualifier is a competition for the region's most energy-efficient UrbanConcept teams to find out who is the fastest, energy-efficient Driver. It serves as a qualifying round for the Shell Eco-marathon Drivers' World Championship Grand Final in Europe.

- a) Competitors will be grouped into three energy categories, Battery Electric, Hydrogen Fuel Cell, and Internal Combustion Engine, with the first, second, and third place teams selected from each class (9 teams maximum).
- b) Each vehicle will be given a fixed amount of energy based on their Shell Eco-marathon Mileage Challenge performance.
- c) From a grid start, teams will race a predefined number of laps using their given energy allowance.
- d) The winner will be the first vehicle to cross the finish line of the Shell Eco-marathon Drivers' World Championship Qualifier. The first three vehicles to cross the finish line will qualify for the Shell Eco-marathon Drivers' World Championship Grand Final in Europe.
- e) If a school has more than one vehicle among the first three to cross the finish line, only one vehicle will qualify for the DWC Grand Final in Europe. In this event, the next place vehicle to cross the finish line will qualify for the DWC Grand Final in Europe.

ARTICLE 302: DEFINITION OF COMPETITION FOR THE DRIVERS WORLD CHAMPIONSHIP GRAND FINAL

The Shell Eco-marathon Drivers' World Championship Grand Final is a competition for the world's most energy-efficient UrbanConcept teams to find out who is the fastest, energy-efficient Driver.

- a) The DWC Grand Final will take place on the Shell Eco-marathon Europe track.
- b) The top placing team(s) among the three energy categories of the Shell Eco-marathon Mileage Challenge Europe will be invited to participate (9 vehicles total).
- c) Each vehicle will be given a fixed amount of energy based on their Shell Eco-marathon

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Mileage Challenge Europe performance.

- d) From a grid start, teams will race a predefined number of laps using their given energy allowance.
- e) The Shell Eco-marathon Drivers' World Championship Grand Final winner will be the first vehicle to cross the finish line.

ARTICLE 303: DRIVER QUALIFICATIONS

Only registered drivers from the Shell Eco-marathon Mileage Challenge are allowed to drive in the Shell Eco-marathon Drivers' World Championship Qualifiers and Grand Final.

ARTICLE 304: PRACTICE LAPS

There will be a designated practice session for teams that qualify for the DWC. Drivers must NOT practice for the DWC during the Shell Eco-marathon Mileage Challenge.

ARTICLE 305: FALSE STARTS

During DWC Qualifier and Grand Final, if a car moves before the start signal is given, the team will be penalized per discretion of the Organizers. Infractions will be signalled by the Race Marshalls.

ARTICLE 306: ADDITIONAL INFORMATION

The race distance, event schedule and a description of awards and prizes for the DWC competitions will be provided by the Organisers at a time closer to the respective events.

ARTICLE 307: CHAPTER I AND CHAPTER II RULES APPLY

Chapters I, II, and III of the Shell Eco-marathon Official Rules all apply to the DWC.

ARTICLE 308: VEHICLE CLASS

The DWC competition is only open to UrbanConcept vehicles.

ARTICLE 309: VEHICLE MODIFICATION

The vehicle used in the DWC must be the same as the Shell Eco-marathon Mileage Challenge:

- a) Chassis and body must be identical.
- b) Powertrain can be repaired or modified but not be replaced. (same engine/motor)
- c) All modifications to the powertrain must be approved by the Organisers.

ARTICLE 310: ENERGY CATEGORIES

Teams must use the same energy category (including fuel type) used during the Shell Eco-marathon Mileage Challenge.

ARTICLE 311: NOT USED

1B. SAFETY

ARTICLE 312: MANDATORY BRIEFING

The DWC briefings are mandatory for the Team Manager and Driver(s) of the participating teams. Only Drivers who attend the briefing can compete on track. If the Team Manager and Driver are not present at this briefing, the vehicle will be disqualified.

ARTICLE 313: NOT USED

ARTICLE 314: MAXIMUM TYRE PRESSURE

Tyre pressures must not exceed the maximum allowed tyre pressure stated by the tyre manufacturer.

ARTICLE 315: FUELLING

All fuelling operations must be performed by the Organisers.

1C. DRIVING RULES

ARTICLE 316: SPEED LIMIT

40 km/h is the maximum speed allowed on the track during practice and competitions. All teams must provide their driver with accurate speed information by speedometer display in the driver compartment.

Before the official winners are announced, there will be a delay while results are reviewed and confirmed by the Organisers. During this time, Organisers will review the recorded speeds for each vehicle during the race. Teams caught speeding may be disqualified.

ARTICLE 317: FLAGS

The following flags will be used during the DWC competition:

- Green: Start
- Yellow: Danger on track, apply extra caution, reduce speed, and overtaking is not allowed.
- Red: Stop immediately. Race Marshalls will take charge of Drivers and their vehicle.

If a red flag occurs and the lead car has completed more than half the race distance, the current race classification counts as final.

ARTICLE 318: NON-STARTING VEHICLES

At the starting flag, Drivers have 20 seconds to start the vehicle. If the vehicle is not able to move after this time, the team will be disqualified, and the vehicle will be removed from the track by the Track Marshalls.

ARTICLE 319: DANGEROUS DRIVING IS NOT ALLOWED

- a) Drivers are not allowed to push another vehicle with their car.
- b) Overtaking will follow the same rules as specified in Chapter I.
- c) Blocking another vehicle by changing track line is not allowed.
- d) If two vehicles arrive at the same time in a turn, each Driver must keep their line on track.

1D. TELEMETRY SYSTEM

The on-board computer and telemetry equipment will be installed prior to the Shell Eco-marathon Mileage Challenge and will also be used for the Drivers' World Championship.

ARTICLE 320-322: NOT USED

ARTICLE 323: SPEED MEASUREMENT EQUIPMENT

The Organisers reserve the right to install additional telemetry equipment to measure speed during the Drivers' World Championship Qualifiers and Grand Final.

ARTICLE 324: ELECTRICAL RELAYS

For all vehicles participating in the DWC, an electrical relay will be provided by the Organizers and must be installed by the teams. The relay will be controlled by the Shell Eco-marathon on-board computer. The relay will be wired into the vehicle's electrical system so that the propulsion system will be disabled when the relay is activated.

ARTICLE 325: TECHNOLOGY EQUIPMENT INSTALLED

Participants are informed of the experimental nature of the proprietary technology installed in their vehicles by the Organisers. Teams accept the risk that using the technology may result in an invalid result or their vehicle not completing the DWC.

2. DRIVERS WORLD CHAMPIONSHIP QUALIFIER COMPETITION

ARTICLE 326: CRITERIA FOR PARTICIPATION

The Shell Eco-marathon Drivers' World Championship Qualifiers will only take place at Shell Eco-marathon Americas and Shell Eco-marathon Asia in 2019. Teams may participate by invitation only. The Organisers will issue a maximum of 9 invitations per region. The invitations will be distributed by the Organisers as follows:

a) Energy Class rankings.

At each regional competition (Americas and Asia) the Organisers will produce a ranking of all valid attempts for each energy category for UrbanConcept vehicles.

b) DWC Qualifier invitations.

DWC Qualifier invitations will be issued to the top 3 teams in each energy category (IC Engine, Battery Electric, Hydrogen Fuel Cell), with a maximum of 9 total teams.

c) Rules of Acceptance

All teams that receive DWC Qualifier invitations must return their signed invitation acceptance documents by hand to the Organisers within 30 minutes.

Accepting an invitation to the DWC Qualifier implies automatic acceptance of participation in the DWC Grand Final during Shell Eco-marathon Europe if the team qualifies.

ARTICLE 327: ENERGY ALLOCATION

For energy allocation, the Organisers will calculate the minimum amount of energy required for each team to complete the DWC Qualifier distance based on their best attempt at the Shell Eco-marathon Mileage Challenge. If, at the end of the Mileage Challenge competition, there are at least 3 teams with valid runs in a given energy category, the first-place team will receive a 5% energy bonus.

If a team breaks a 3-year regional record for the Mileage Challenge, the team will receive an additional 10% energy bonus. Regional records will be posted at the beginning of Technical Inspection at each regional competition.

During the competition, when the energy allowance has been exhausted, the energy measurement and control system will disable the vehicle's propulsion system.

ARTICLE 328: DRIVER QUALIFICATION

All Drivers for the DWC Qualifier must have driven their vehicle for at least 1 valid attempt during the Shell Eco-marathon Mileage Challenge.

ARTICLE 329: TEAM QUALIFICATION

All teams must participate in the Shell Eco-marathon Mileage Challenge for UrbanConcept.

ARTICLE 330: PARC FERMÉ

Vehicles must be present at the Parc Fermé at the date and time announced by the Organisers. Teams that are not present in the Parc Fermé will be disqualified.

An additional Technical Inspection will be performed on each vehicle when they enter the Parc Fermé. Both the Team Manager and Team Driver(s) must be present.

Once inside the Parc Fermé, teams may not make modifications to their vehicles. Any repair or adjustment of the vehicle must not change the original condition of the vehicle when it first entered the Parc Fermé. All repairs or adjustments must be approved beforehand and will be supervised by the Organisers.

Vehicles shall remain in the Parc Fermé until they are escorted to the start grid. Only two team members and one Driver can accompany the vehicle.

ARTICLE 331: STARTING GRID AND TRACK ACCESS

A maximum of two team members and one Driver may access the track. The Organisers will accompany the vehicle to and from the track. The Driver must be in their car while it is pushed by the two team members. One minute before the official start of the DWC race, the two team members must exit the track.

ARTICLE 332: GRID POSITION FOR DWC QUALIFIER

Position on the starting grid for the DWC Qualifier race will be based on a public, random drawing.

ARTICLE 333: DRIVERS WORLD CHAMPIONSHIP QUALIFIER

If two or more vehicles cross the finish line at the same time, the winner will be decided based on the vehicle that started farthest from the start line.

ARTICLE 334: PROTESTS DURING THE DWC QUALIFIERS

Teams have 10 minutes after the end of the race to submit a protest to the Race Director. All decisions made by the Race Director and the Organisers are final and non-appealable.

ARTICLE 335: WEATHER/ENVIRONMENT

If the DWC Qualifier cannot take place, the Organisers will invite the teams to participate in the DWC Grand Final based on the Shell Eco-marathon Mileage Challenge results.

3. DWC GRAND FINAL COMPETITION

ARTICLE 336: CRITERIA FOR PARTICIPATION

Only the 3 winners from each of the two DWC Qualifiers will participate in the Shell Eco-marathon Europe Mileage Challenge. The visiting team's mileage challenge results will determine if the team can compete in the DWC Grand Final. As stated in Article 326, all qualifying teams shall attend and attempt to participate in the DWC Grand Final.

ARTICLE 337: IDENTIFICATION

Visiting teams participating in the DWC Grand Final will receive a new set of official stickers before participating in the Shell Eco-marathon Europe Mileage Challenge. The new stickers shall be fixed to their vehicle body before the vehicle is presented at Technical Inspection.

ARTICLE 338: ENERGY ALLOCATION

For energy allocation, the Organisers will calculate the minimum amount of energy required for each qualifying team to complete the DWC Grand Final distance based on their best attempt at the Shell Eco-marathon Europe Mileage Challenge. The first-place team in each energy category will receive a 5% energy bonus.

If a team breaks a 3-year European record for the Mileage Challenge, the team will receive an additional 10% energy bonus. European records will be posted at the beginning of Technical Inspection at Shell Eco-marathon Europe.

During the competition, when the energy allowance has been exhausted, the energy measurement and control system will disable the vehicle's propulsion system.

ARTICLE 339: QUALIFICATIONS FOR DWC GRAND FINAL RACE

All European Teams:

- Must have at least one valid run in the Shell Eco-marathon Europe Mileage Challenge.
- Must be in the top ranking of their energy category.

All Visiting Teams:

- Must have at least one valid run in the Shell Eco-marathon Europe Mileage Challenge.
- Must be in the top ranking of their energy category.
- Will not be eligible for any prizes or awards for the Shell Eco-marathon Europe Mileage Challenge.

Energy Category Top Ranking:

- The teams invited to participate in the DWC Grand Final will be based on the energy category mix of the visiting teams, meaning the total number of visiting teams for that energy category + one European team (minimum).
- Each visiting team will have the opportunity to qualify to compete in the DWC Grand Final Race.
- There will be at least one vehicle from each energy category invited to participate in the DWC Grand Final Race.
- There will be at least three European teams invited to compete in the DWC Grand Final.

Example Scenarios:

- 1) *If among the 6 visiting teams, there are 2 teams in each of the three energy categories (ICE, H2, & BE), then the top 3 vehicles (2 + 1) from each energy category will be invited to compete in the DWC Grand Final, with a total of 9 vehicles. In this example, teams must be in the top 3 in their energy category of the Shell Eco-marathon Europe Mileage Challenge in order to compete in the DWC Grand Final.*
- 2) *If among the 6 visiting teams, there are 4 ICE, 1 BE, and 1 H2, then the DWC Grand Final will consist of 5 ICE, 2 BE, and 2 H2 vehicles, with 9 vehicles total. In this example, teams must be in the top 5 for ICE, in the top 2 for BE, or in the top 2 for H2 in the Shell Eco-marathon Europe Mileage Challenge in order to compete in the DWC Grand Final.*
- 3) *If among the 6 visiting teams, there are 3 ICE, 3 BE, and 0 H2, then the DWC Grand Final will consist of 4 ICE, 4 BE, and 1 H2 vehicles, with 9 vehicles total. In this example, teams must be in the top 4 for ICE, in the top 4 for BE, or first-place for H2 in the Shell Eco-marathon Europe Mileage Challenge in order to compete in the DWC Grand Final.*

ARTICLE 340: PARC FERMÉ

The Parc Fermé procedure for the DWC Grand Final will be the same as described in Article 330.

ARTICLE 341: STARTING GRID AND TRACK ACCESS

The track access procedure for the DWC Grand Final will be the same as described in Article 331.

Position on the starting grid for the DWC Grand Final will be based on a public, random drawing.

ARTICLE 342: DWC GRAND FINAL

If two or more vehicles cross the finish line at the same time, the winner will be decided based on the vehicle that started farthest from the starting line.

ARTICLE 343: PROTESTS DURING THE DWC GRAND FINAL

The protest procedure will be the same as described in Article 334.

ARTICLE 344: WEATHER/ENVIRONMENT

If the DWC Grand Final cannot take place, the winners will be decided by the Organizers.