



## **INVITATION TO TENDER FOR SOLE SUPPLY CONTRACT**

### **TENDER SUMMARY AND ADDITIONAL TENDER REQUIREMENTS**

The FIA's objective is to select an exclusive supplier of a **battery system** whose task it will be to ensure the production and delivery of the battery system for the **FIA Formula E Championship** ("the Championship"), with the aim to keep positioning the Championship as the laboratory of fast-cycle technology solutions for electric cars.

Interested parties are hereby invited to tender to become the exclusive supplier of a battery system for the Championship.

The tenderers are invited to make a proposal for the supply of the battery system for seasons 5 and 6 of the Championship **and/or** for seasons 5, 6 and 7 of the Championship.

In the event that the tenderers submit both a two-season and a three-season bid, they are invited to clearly indicate how the supply conditions would differ for those two periods.

The selected tenderer will be invited to enter into a contract with the FIA that will establish the terms of the tenderer's appointment as exclusive supplier.

Bids must be submitted in accordance with the FIA's "Invitation to tender for sole supply contract - tendering instructions" available on the FIA's website: [www.fia.com](http://www.fia.com), **apart from Article 1.1.8 which will not apply to this specific procedure.**

The FIA reserves the right to make amendments to this invitation to tender at any time and to issue a new invitation to tender.

Bids must be submitted in accordance with the FIA's "Invitation to tender for sole supply contract – tendering instructions" available on the FIA's website [www.fia.com](http://www.fia.com) apart article 1.1.8 which does not apply to this procedure.

The FIA reserves the right to make amendments to this invitation to tender at any time and to issue a new invitation to tender.

Publication of invitation to tender:	11 March 2016
<b>Tender submission date:</b>	2 June 2016
Opening date:	3 June 2016
Decision as to selection of tenderer:	24 June 2016

## **ADDITIONAL REQUIREMENTS**

### **MARKETING RIGHTS / FIA ACTIONS**

1) Tenderers are invited to contact the Promoter of the Championship, with regard to the acquisition of commercial rights in connection with the Championship. To that end, a presentation of the different options is available from the Promoter on request.

The result of the discussions between the tenderers and the Promoter might be taken into account by the FIA when selecting the exclusive battery supplier of the Championship.

The tenderer shall provide all details relating to the financial or in kind contribution it undertakes to make in exchange for commercial rights in its bid.

The Promoter's contact details are:

#### **FEH Holding**

Sam Piccione

Chief Revenue Officer

0044 771 800 8539

[sjp@fiaformulae.com](mailto:sjp@fiaformulae.com)

However, to avoid any misunderstanding, the primary criteria that will be referred to when assessing the bids will be the strict compliance with the technical specifications, safety provisions, cost reduction and sporting equity. The FIA may decide to select a tenderer without granting any marketing rights, which would mean that the selected tenderer would be obliged to supply unbranded products.

2) In addition to the opportunity described above to acquire commercial rights in connection with the Championship, tenderers are invited to consider supporting FIA CSR programs relating to road safety and /or environmental actions. Such programs can provide the interested tenderers the opportunity to enhance their profile in such domains, in the form of corporate visibility, exchange of expertise, local education programs, awareness campaigns, etc. To this end, a presentation is available from the FIA Marketing and Events Department.

The tenderer shall provide all details relating to the financial or in kind contribution it undertakes to make in exchange for such actions to take place.

The person to contact is:

**Alexandre Gueschir**

E-mail: [agueschir@fia.com](mailto:agueschir@fia.com)

Phone number: +33 6 07 32 37 73

DRAFT CONTRACT FOR THE SUPPLY OF A BATTERY SYSTEM  
IN THE [SEASONS 5 AND 6] OR [SEASONS 5, 6 AND 7]  
OF THE FIA FORMULA E CHAMPIONSHIP

BETWEEN

**THE FEDERATION INTERNATIONALE DE L'AUTOMOBILE (FIA)**

8 Place de la Concorde  
75008 Paris

hereinafter referred to as the "**FIA**"

ON THE ONE HAND,

AND

[•]

hereinafter referred to as the "**PROVIDER**"

ON THE OTHER HAND.

## **PART 1 - GENERAL CONDITIONS**

### **RECITALS**

- (A) The FIA's authority in relation to international motor sport has been recognised since 1904 when national automobile clubs came together to establish the FIA to provide, amongst other things, an international forum to regulate motor sport internationally.
- (B) The FIA is the sole body governing international motor sport and is recognised by its members as the sole authority having the sporting power with the right to organise international FIA championships, including the CHAMPIONSHIP.
- (C) The FIA has an absolute obligation conferred on it by its members to safeguard its authority over all safety, sporting, technical and disciplinary matters relating to the CHAMPIONSHIP, as well as traditional values.
- (D) The FIA will publish the GOVERNING RULES annually.
- (E) The FIA has determined that the interests of the CHAMPIONSHIP require that a single supplier of the PRODUCT should be appointed for a limited term.
- (F) It is intended that the FIA and the PROVIDER will enter into this CONTRACT pursuant to which the PROVIDER will be appointed as the sole supplier of PRODUCT to the CHAMPIONSHIP for the term set out herein (see Part 3 – DEFINITIONS).

### **1. APPOINTMENT AND SUPPLY**

- 1.1 The FIA hereby appoints the PROVIDER to be the exclusive supplier of the PRODUCT to the COMPETITORS for the CHAMPIONSHIP and the PROVIDER hereby accepts this appointment and agrees to supply the PRODUCT to the COMPETITORS for the CHAMPIONSHIP in accordance with the terms of this CONTRACT and the terms of the SUPPLY AGREEMENTS.
- 1.2 Following from its appointment, the PROVIDER shall enter into a SUPPLY AGREEMENT with each COMPETITOR setting out the terms upon which the PRODUCT shall be supplied.
- 1.3 The PRODUCT that is supplied by the PROVIDER to the COMPETITORS shall be compliant with the TECHNICAL REGULATIONS, the SPORTING REGULATIONS and the TECHNICAL SPECIFICATIONS.

### **2. RELATIONS BETWEEN THE PROVIDER AND THE COMPETITORS**

- 2.1 The PROVIDER shall treat all COMPETITORS in accordance with the PRINCIPLES OF SPORTING EQUALITY.
- 2.2 The PROVIDER shall supply the PRODUCT to all COMPETITORS on equivalent terms. It shall enter into a standard SUPPLY AGREEMENT with each COMPETITOR.

- 2.3 All SUPPLY AGREEMENTS shall be fully compliant with the PRINCIPLES OF SPORTING EQUALITY, the CONTRACT, the SPORTING REGULATIONS, the TECHNICAL REGULATIONS and the TECHNICAL SPECIFICATIONS.
- 2.4 Each SUPPLY AGREEMENT requiring a COMPETITOR to purchase the PRODUCT for use at more than one COMPETITION shall include a clause permitting the COMPETITOR and/or PROVIDER to terminate the SUPPLY AGREEMENT without a penalty of any kind in the event of expiry or earlier termination of the CONTRACT.
- 2.5 If requested by the FIA, the PROVIDER shall supply a copy of each SUPPLY AGREEMENT in order to demonstrate that the PRINCIPLES OF SPORTING EQUALITY are maintained. With respect to the FIA, the PROVIDER hereby waives and confirms that it shall not assert or seek to rely on any confidentiality provision in any SUPPLY AGREEMENT or other agreement relevant to the supply of the PRODUCT to prevent the FIA from reviewing relevant agreements or carrying out its regulatory functions (including ensuring that the PRINCIPLES OF SPORTING EQUALITY are maintained).
- 2.6 The FIA may request amendments to a SUPPLY AGREEMENT if it considers that the SUPPLY AGREEMENT is not consistent or compatible with, or is otherwise contrary to, the PRINCIPLES OF SPORTING EQUALITY. For the avoidance of doubt, the PROVIDER's obligation to abide by the PRINCIPLES OF SPORTING EQUALITY shall not be limited or otherwise affected by the FIA's review of a SUPPLY AGREEMENT and/or a request for an amendment to be made.
- 2.7 In the event of uncertainty regarding whether any action taken or proposed to be taken by the PROVIDER may breach the PRINCIPLES OF SPORTING EQUALITY, the PROVIDER shall request guidance from the FIA, which shall make a determination in this regard.
- 2.8 Where such a determination is made by the FIA, the PROVIDER's actions in complying with that determination shall be deemed to be in compliance with the PROVIDER's obligation in GENERAL CONDITION 2.1 to treat all COMPETITORS in accordance with the PRINCIPLES OF SPORTING EQUALITY.

### **3. LIABILITY**

- 3.1 Without prejudice to the FIA's other rights, the PROVIDER shall indemnify and hold harmless the FIA from and against all reasonably foreseeable losses incurred by the FIA as a direct result of the PROVIDER's:
- (a) failure to supply the PRODUCT of the requisite quantity;
  - (b) failure to supply the PRODUCT of the requisite quality; and
  - (c) negligence in the supply of the PRODUCT.
- 3.2 The PROVIDER represents and warrants that it is in a position to meet any liability that may arise under clause 3.1 of this CONTRACT and hereby covenants to maintain such position for the period of time during which the PROVIDER may be liable.
- 3.3 Notwithstanding general conditions 3.1 and 3.2 above, the PROVIDER which enters into the CONTRACT will produce an attestation certifying that an insurance policy has been contracted in its name with a top-ranking international insurance company for covering its liability as PROVIDER for any and all action which might be taken to

obtain compensation for prejudice caused by a manufacturing defect affecting the PRODUCT used pursuant to the CONTRACT.

#### **4. WARRANTIES**

4.1 The PROVIDER represents and warrants that it has full power and authority to enter into and fully perform its obligations under the CONTRACT and the provisions of the CONTRACT, when executed, will constitute valid and binding obligations on the PROVIDER in accordance with its terms. The PROVIDER also represents and warrants that it has full power and authority to enter into and fully perform its obligations under the SUPPLY AGREEMENTS when executed.

4.2 The FIA represents and warrants that it has full power and authority to enter into and fully perform its obligations under the CONTRACT and the provisions of the CONTRACT, when executed, will constitute valid and binding obligations on the FIA in accordance with its terms.

#### **5. TERMINATION**

5.1 Notwithstanding any other provision hereof, either party may terminate the CONTRACT with immediate effect by written notice to the other if any of the following events occur:

- (a) the other party has committed a material breach of the CONTRACT which is not capable of remedy or, if remediable, has not remedied it within 30 days of the non-breaching party's written notice requiring the default to be remedied (for the avoidance of doubt, a breach by the PROVIDER of any of GENERAL CONDITIONS 1.2, 1.3, 2, 3 and 4.1 and any of the SPECIAL CONDITIONS is acknowledged by the parties to be a material breach);
- (b) steps (including any steps analogous to those following) have been taken to wind up the other party or to place the other party into administration or to have a receiver appointed over any of its assets, other than as part of a scheme of solvent reconstruction or amalgamation; or
- (c) the other party shall cease or threaten to cease carrying on business or the other party shall make any composition or arrangement with its creditors or become subject to any other insolvency process or proceeding (other than as part of a scheme of solvent reconstruction or amalgamation) or have all or any of its assets or undertakings seized by a government or governmental agency or authority (including any acts analogous to the above).

#### **6. GOVERNING RULES**

6.1 The GOVERNING RULES constitute the legal, administrative and technical framework of the CHAMPIONSHIPS and the conditions set forth therein shall have binding force and prevail among the parties to the CONTRACT.

6.2 The CONTRACT shall in principle be interpreted in a manner that gives effect to the provisions of the GOVERNING RULES, the intention of the parties being to construe the provisions of the CONTRACT in the context of the more general framework of the GOVERNING RULES.

6.3 The PROVIDER acknowledges that the TECHNICAL SPECIFICATIONS and GOVERNING RULES are subject to amendment from time to time. The PROVIDER will be responsible (at its own cost) for all research and development associated with the manufacture of the PRODUCT, including the making of any changes to the PRODUCT to be supplied pursuant to the CONTRACT that may be necessitated by any amendment to the TECHNICAL SPECIFICATIONS or the GOVERNING RULES.

6.4 The PROVIDER acknowledges that the FIA may take decisions regarding the supply of the PRODUCT, this CONTRACT and any obligations accruing from the GOVERNING RULES through whatever structure it deems appropriate, including through its disciplinary structures. The PROVIDER shall not challenge the competence of an FIA disciplinary body acting in accordance with the GOVERNING RULES.

## **7. GOVERNING LAW AND LANGUAGE**

7.1 The language that shall prevail for the interpretation of the CONTRACT shall be English and the CONTRACT and all documents connected with the CONTRACT shall be written in English. In the event of any conflict between the language of the CONTRACT and any translation thereof, the language of the CONTRACT shall prevail. In the event of any conflict between the language of any document connected with the CONTRACT and any translation thereof, the language of the document connected with the CONTRACT shall prevail.

7.2 The governing law of the CONTRACT shall be French law.

7.3 The Tribunal de Grande Instance de Paris, France, shall have sole jurisdiction to settle any dispute that may arise between the FIA and the PROVIDER in connection with the CONTRACT.

## **8. GENERAL**

8.1 Nothing in the CONTRACT guarantees or shall be construed as guaranteeing, the solvency of a COMPETITOR. The FIA is not responsible for ensuring that the COMPETITORS satisfy the terms of the SUPPLY AGREEMENTS and the FIA shall not be liable for a failure by any COMPETITOR to satisfy the terms of a SUPPLY AGREEMENT.

8.2 No delay or omission or failure to exercise any right or remedy provided herein shall be deemed to be a waiver thereof.

8.3 The CONTRACT shall be binding on and enure to the benefit of the parties and their respective successors and permitted assigns. The PROVIDER shall not be entitled to assign or sub-contract its rights or obligations under the CONTRACT in whole or in part without the prior written consent of the FIA.

8.4 Any notice to be given under the CONTRACT shall be given in writing delivered to the other party by any one or more of the following methods:

- (a) personal delivery to one of its corporate officers, in which case notice shall be treated as having been given at the time of such personal delivery;
- (b) first class registered post or courier delivery service (such as DHL or UPS) to the address mentioned above (or such other address as may be notified to the other party in writing from time to time), in which case notice shall be treated as having been given on the date of actual receipt at that address (or

on the next local business day if delivered on a local non-business day or after 4.00 p.m. local time on a local business day), which shall rebuttably be presumed to be the second local business day after posting; or

- (c) facsimile to the numbers below (or such other facsimile number as may be notified to the other party in writing from time to time), in which case notice shall be treated as having been received at the time of actual receipt (or on the next local business day if delivered on a local non-business day or after 4.00 p.m. local time on a local business day) and rebuttably be presumed to have been duly received at the time indicated on the automatic acknowledgement transmitted by the recipient fax machine:

PROVIDER: [•]

FIA: [•]

- 8.5 Any variations of the CONTRACT shall be ineffective unless agreed in writing and signed by the parties.
- 8.6 If any term, provision or condition of the CONTRACT is held by a court of competent jurisdiction to be invalid, void or unenforceable such invalidity, voidness or unenforceability shall not invalidate the remainder of the CONTRACT, all of which shall remain in full force and effect.
- 8.7 The CONTRACT may be executed in any number of counterparts (whether original or facsimile counterparts) and upon due execution of all such counterparts by all parties, each counterpart shall be deemed to be an original hereof.
- 8.8 GENERAL CONDITIONS 3, 7 and 8 shall survive expiry or termination of the CONTRACT for any reason (but shall terminate at the time expressly provided in the relevant GENERAL CONDITION, if any).



## **PART 2 - SPECIAL CONDITIONS**

*[The CONTRACT shall contain, inter alia, the following minimum terms and conditions relating to the supply of the PRODUCT.]*

### **1. SUPPLY OF THE PRODUCT**

- 1.1 The FIA does not guarantee the PROVIDER a minimum quantity of the PRODUCT to be supplied.
- 1.2 The SUPPLY AGREEMENT may provide that each COMPETITOR shall be responsible for the care and maintenance of the PRODUCT and for transportation of them to each COMPETITION.
- 1.3 The PROVIDER must deliver on track support to any official events and on specific demand by FIA for other events. The COMPETITORS alone shall be responsible for the spare parts on track. However, the PROVIDER will be responsible for providing spare parts on the track in order to repair the PRODUCTS and cover reliability problems.

### **2. PRODUCTION DATES AND DELIVERY OF THE PRODUCT**

- 2.1 The hardware and software design specifications of the PRODUCT shall be approved by the FIA in writing by September 2016 at the latest, after which date no further modifications or alterations to the PRODUCT's specifications shall be permitted without the express written previous consent of the FIA.
- 2.2 The PROVIDER shall make first crash test sessions complying with all FIA safety requirements by June 2017 at the latest.
- 2.3 The PROVIDER shall make available one full PRODUCT package to each car manufacturer by 1<sup>st</sup> November 2017 at the latest.
- 2.4 The PROVIDER shall make available race cars full PRODUCT package to all car manufacturers by 1<sup>st</sup> July 2018 at the latest.
- 2.5 The PROVIDER shall make available to each COMPETITOR all necessary technical support, personnel and equipment to assist with usage of the PRODUCT during the first deliveries of the PRODUCT to the COMPETITORS (see TECHNICAL SPECIFICATIONS).
- 2.6 The PROVIDER shall ensure all necessary technical support on the COMPETITIONS as described in the TECHNICAL SPECIFICATIONS.
- 2.7 To facilitate OFFICIAL TESTING by COMPETITORS, if requested by the FIA, the PROVIDER will be present at its own expense at OFFICIAL TESTING with all necessary spare parts, personnel and equipment to fit and service the PRODUCT.

### **3. TECHNICAL CONDITIONS**

- 3.1 The PROVIDER shall ensure that the PRODUCT to be supplied is in conformity with the TECHNICAL SPECIFICATIONS, the SPORTING and TECHNICAL REGULATIONS. In addition, the PROVIDER shall supply a PRODUCT that is capable of being used to ensure that the COMPETITORS' cars comply with TESTING requirements.

- 3.2 The PRODUCT must be adaptable to different types of powertrain motor. The cost of all necessary adjustments will be at the cost of the powertrain suppliers concerned.

#### **4. PROJECT SUPERVISION**

- 4.1 The PROVIDER shall make such modifications to the PRODUCT to be supplied pursuant to the CONTRACT as the FIA ENGINEER may require.
- 4.2 The PROVIDER shall bear all reasonable costs of development of the PRODUCT incurred by the FIA ENGINEER and his support staff.

#### **5. PRICING OF THE PRODUCT**

- 5.1 The price of the PRODUCT (in euros) supplied pursuant to the CONTRACT shall be as detailed on the PRICING FORM, which amount shall be inclusive of all taxes and charges and which amount shall not be increased for any reason.
- 5.2 VAT (value added tax) shall not be charged to those COMPETITORS that are exempt from VAT and that have supplied proof of such exemption to the PROVIDER.

#### **6. MANUFACTURING CONDITIONS OF THE PRODUCT**

- 6.1 Before starting the manufacturing of the PRODUCT to be supplied pursuant to the CONTRACT, the PROVIDER shall provide to the FIA a detailed technical study for the approval of the FIA ENGINEER. In the event that an amendment is made to the TECHNICAL SPECIFICATIONS or the TECHNICAL REGULATIONS that requires an amendment to the PRODUCT supplied pursuant to the CONTRACT, the PROVIDER shall provide to the FIA a detailed technical study of the amended PRODUCT to be supplied pursuant to the CONTRACT to take account of such amendment.
- 6.2 The PROVIDER shall make such modifications to the PRODUCT to be supplied pursuant to the CONTRACT as the FIA ENGINEER may require.
- 6.3 The PROVIDER shall not make any change to the PRODUCT during the CONTRACT without the express prior written agreement from the FIA.

#### **7. COMMERCIAL RIGHTS**

*[Content of the clause depending on the proposal made by the PROVIDER in its bid and of the selection decision].*

### **PART 3 - DEFINITIONS**

The following terms shall be understood to have the following meanings for the purposes of the "CONTRACT".

- 1.1 **[CHAMPIONSHIP** means the season 5 (2018-2019), season 6 (2019-2020) and season 7 (2020-2021) of the FIA Formula E championship **or** **CHAMPIONSHIP** means the season 5 (2018-2019) and season 6 (2019-2020) of the FIA Formula E championship].
- 1.2 **COMPETITORS** means the racing teams that have been accepted to take part in the CHAMPIONSHIP.
- 1.3 **CAR MANUFACTURERS** means the car suppliers registered by the FIA to supply the cars in the CHAMPIONSHIP.
- 1.4 **CONTRACT** means the GENERAL CONDITIONS, the SPECIAL CONDITIONS and the DEFINITIONS.
- 1.5 **DEFINITIONS** means the definitions set out in this Part 3 of the CONTRACT.
- 1.6 **COMPETITION** means any race forming part of the CHAMPIONSHIP. A COMPETITION is deemed to commence at the scheduled time for scrutineering and administrative checks and includes all practice, qualifying and the race itself and ends at the expiry of the deadline for the lodging of a protest.
- 1.7 **CHASSIS SUPPLIER** means the exclusive chassis supplier designated by the FIA to supply the chassis in the CHAMPIONSHIP.
- 1.8 **FIA** means the Fédération Internationale de l'Automobile (FIA).
- 1.9 **FIA ENGINEER** shall mean the technician appointed by the FIA:
  - (a) to carry out all technical checks and controls;
  - (b) to grant any necessary approval in relation to the development and production of the PRODUCT.
- 1.10 **GENERAL CONDITIONS** means the provisions contained in Part 1 of the CONTRACT.
- 1.11 **GOVERNING RULES** means:
  - (a) the International Sporting Code and the Appendices thereto;
  - (b) the SPORTING REGULATIONS;
  - (c) the TECHNICAL REGULATIONS;
  - (d) the Code of Ethics;
  - (e) any other regulations applicable to the CHAMPIONSHIP.

- 1.12 **OFFICIAL TESTING** means official testing, if any, for the CHAMPIONSHIP.
- 1.13 **PRICING FORM** means the pricing form stating the prices at which the PRODUCT will be supplied. The pricing form is included in the TECHNICAL SPECIFICATIONS.
- 1.14 **PRINCIPLES OF SPORTING EQUALITY** means the equal treatment by the PROVIDER of all COMPETITORS with respect to:
- anything which may affect the performance of the PRODUCT;
  - the terms on which the PRODUCT is supplied;
  - the support, access and information made available to COMPETITORS in relation to the PRODUCT; and
  - any other matter which affects or may have an effect, however minor, on sporting performance.
- 1.15 **PRODUCT** means the battery system as such term is described in the SPORTING REGULATIONS, the TECHNICAL REGULATIONS, the TECHNICAL SPECIFICATIONS and any other regulations applicable to the CHAMPIONSHIP.
- 1.16 **PROVIDER** means the battery supplier which tenders and, after selection by the FIA, enters into the CONTRACT.
- 1.17 **PRODUCTION SITE** means the factory that will produce the PRODUCT supplied pursuant to the CONTRACT.
- 1.18 **SPECIAL CONDITIONS** means the provisions contained in Part 2 of the CONTRACT.
- 1.19 **SPORTING REGULATIONS** means the Sporting Regulations applicable to the CHAMPIONSHIPS. The Sporting Regulations are available on the FIA website [www.fia.com](http://www.fia.com).
- 1.20 **SUPPLY AGREEMENT** means any agreement, and all amendments thereto, between the PROVIDER and a COMPETITOR pursuant to which the PROVIDER shall supply the PRODUCT to the COMPETITOR.
- 1.21 **TECHNICAL REGULATIONS** means the Technical Regulations applicable to the CHAMPIONSHIP. The Technical Regulations are available on the FIA website [www.fia.com](http://www.fia.com).
- 1.22 **TECHNICAL SPECIFICATIONS** means the PRODUCT's requirements (see **Appendix I**).

Signed:

On behalf of the FIA:

In his/her capacity as:

In:

On:

On behalf of the PROVIDER:

In his/her capacity as:

In:

On:

**APPENDIX**

I – TECHNICAL SPECIFICATIONS

# **APPENDIX I**

## **TECHNICAL SPECIFICATIONS**

# FIA Formula E Championship Battery system specifications

## 1. INTRODUCTION

The FIA is starting a tender process in order to find a single battery provider for the Formula E Championship.

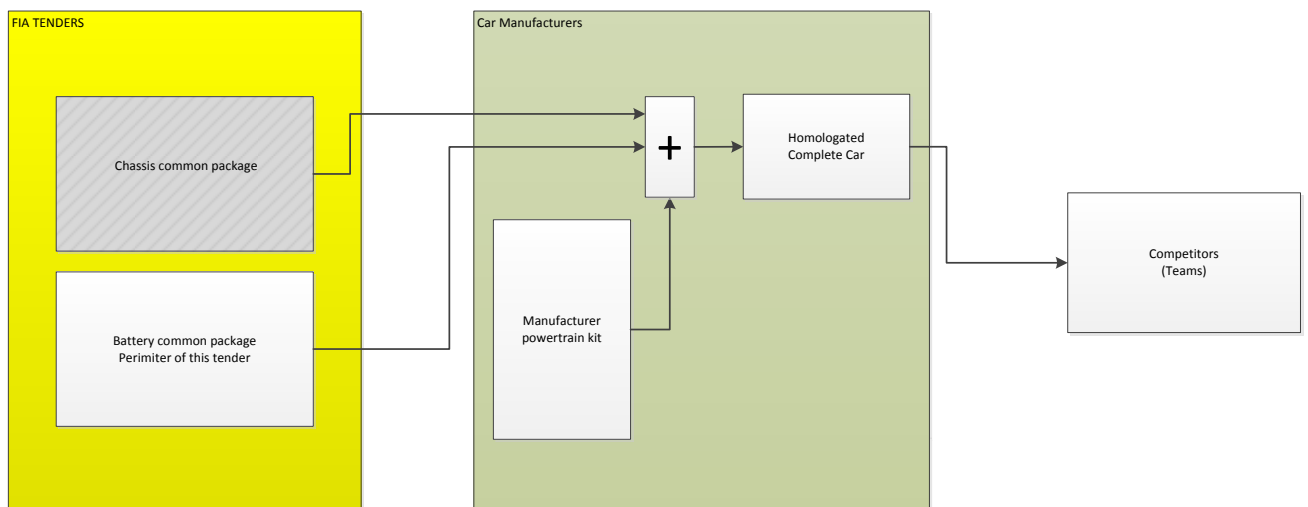
The aim of Formula E is to allow the development of electric technologies and race for the efficiency of the traction chain of the car. In order to maintain cost control with a high level of technology, the FIA is defining a battery pack that all car manufacturers will have to use in their cars which are then delivered to teams.

The selected provider will have to sell to car manufacturers all the parts included in the perimeter of this tender inside a cost cap envelope.

In conjunction with this tender, the FIA will hold another call for tenders to identify a single chassis provider. During development, the selected battery provider and the chassis provider will need to work together on some parts of the tender, in order to take into account specific needs for integrating the battery system into the chassis.

The project proposed by the tenderer will have to comply with the Technical Regulations found in the Appendix and technical specifications included in this dossier. Nevertheless, some flexibility will be possible in order to achieve the weight and performance targets. However, none of the safety requirements or regulations can be part of the discussion; they are to be applied in their entirety.

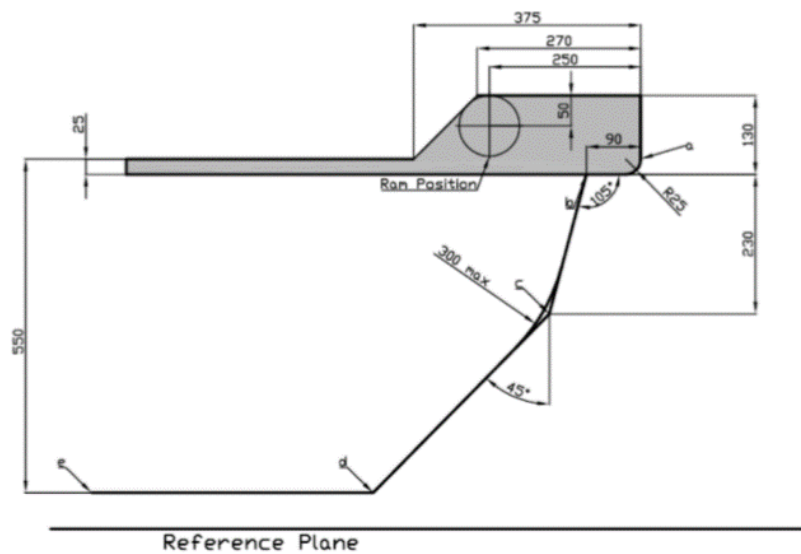
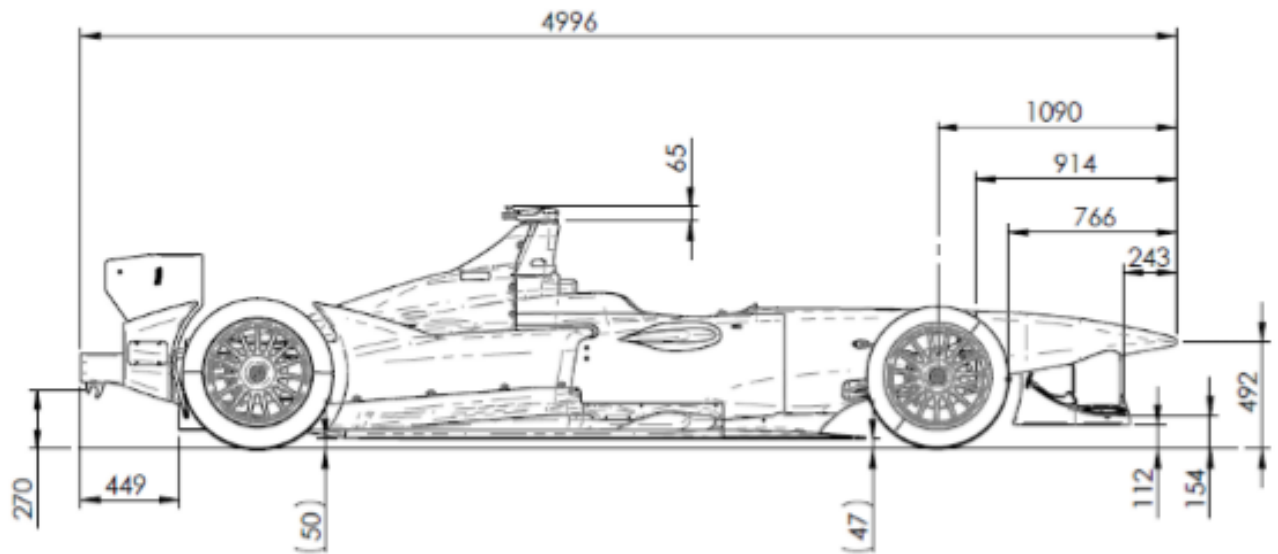
Formula e Season 5  
organisation





## 2. Current Car Technical Information

Information on the current car (seasons 1 to 4):



X	Coordinates	Current
	Parameter	
	Nose Tip	1090
	Front Axle	0
	Rear Axle	-3100
	Front Bulkhead	169
	RESS Front Plane	-1602

RESS Rear Plane	-2519
RESS Centre Plane	-2061
RESS Length	917
% Front	38
C of G	-1922
delta to RESS Centre plane	139
RESS max Y	411
RESS max Z	489
Basic 'cube' Volume	369
RESS Stud Axes (Y,Z);	Current
Upr	127; 388.5
Mid	190; 331
Lower	199.5; 68

### 3. Main season 5 car characteristics and conditions of usage

#### 3.1 Car characteristics

Car weight with driver:	888 kg
Max length:	5000 mm
Max width:	1800 mm

#### 3.2 Track conditions

Battery systems should deliver specified performance for the duration of the race under the following condition range:

Ambient temperature:	5 to 38°C
Humidity:	up to 98 per cent
Ambient pressure:	from 800mb to 1050mb

#### 3.3 Championship and testing information

Pre-season test days:	6 to 8 days
Number of races per season:	up to 15. See typical timetable in Appendix.

## 4. Technical Specifications of the battery system

Below are all the targets concerning the definition of the battery system that are included in this tender. To achieve performance targets, some parts of the technical specifications can be adjusted. Any proposal that is in contradiction with any of the safety requirements will not be taken into account. The main target is to move from two cars to one car per driver per race by significantly increasing the capacity of the battery. At the same time, the product must show a high level of reliability in racing conditions, in particular with the vibration and shock specificities of championships that take place on city track with close walls and heavy kerbs.

### 4.1 Main information

Maximum voltage at anytime:	1000 V
Minimum voltage at anytime:	450 V
Maximum cell weight:	250 kg
Maximum battery pack weight:	330 kg
Maximum battery pack volume:	320 litres
Season mileage:	6000 km
Battery life:	1 season
Cycles:	150

### 4.2 Performance targets

All performance targets must be guaranteed until the end of life of the battery system. For Race and Qualy, reference laps on different circuit including speed and power profile are available upon request to the FIA Technical department (FE\_FIATECHNICAL@fia.com).

Useable energy:	54 kWh
Maximum power release in Qualy:	250 kW
Maximum power release in Race:	220 kW
Maximum power release in FanBoost:	250 kW
Maximum power Regen:	250 kW

### 4.3 Duty cycle

Based on reference laps (see above), the battery system must be able to achieve without any reduction in performance:

FP:	Race laps pace, + 3 Qualy laps at any time in the session.
Qualification:	3 laps in a row (down to percentage of



Cooling system:	The cooling system components outside the battery pack will be designed by the chassis provider based on the technical requirements of battery provider. The tenderer needs to deliver all necessary data during the early stages of the project. The cooling pump does not have to be an integrated part of the battery pack.
Main HV DC connector:	Must be a snatch-free connector with HVIL wire included. It must accept at least 500 disconnections /connections. Must be minimum IP55 connected and IP2X disconnected. This connector will also be used to connect to the charging unit. At no time must the battery be connected to both the car and the charging unit.
Flooding battery system:	In order to flood the battery from outside the car in case of internal fire, some dry coupling must be integrated (STAUBLI N00916298 Male Dash 12). The internal walls must be able to withstand that cells could be totally covered by water injected through the coupling. Water should be able to circulate through the battery, Waste water needs to exit battery enclosure through the bottom of the battery. Tenderer can propose different ways to achieve this functionality.
Extinguisher lines:	Some sort of extinguisher nozzle must be integrated inside the housing of the battery, in order to spray ABC extinguisher product internally if needed. Provider shall specify type of extinguisher needed.
Over pressure control:	In the event that cells generate excessive pressure inside the enclosure, the battery pack must have a system to release this pressure outside the battery pack. This release must be at the bottom of the battery.
FIA HV sensor:	The provider must include in the battery pack the mandatory FIA sensor. It must take into account the capacity to change it on the track in case of failure. This sensor will be linked to the FIA logger through a CAN line. The cost of any sensor change will be covered by the provider or car manufacturer.

#### 4.6 Battery Management System (BMS)

Concept:	The Battery Management System is controlling all safety and performance of the pack, during car usage and charging session. It must also manage the cell balancing of the pack when the car is stationary. Balancing time should no more than 24h / 5%.
Communication lines:	At least 1 CAN line 1Mbits to share data with manufacturer ECU and FIA logger.
Data delivered:	BMS must deliver on the CAN line at least all Vcells, Tcells and details diagnostics.
Upload FIA tools:	Software to check conformity of BMS software and calibration must be deliver to FIA. Or a locking process for these parts.
Logging capacity:	An internal logger must be able to store data for at least 3 events.
Insulation control:	A system to control impedance between HV poles and chassis (after main relay) must be fitted inside the battery pack. (eg Bender A-Isometer iso-F1). A second one before relay and connected to the battery casing is also required.
Main relay :	Should cut both pole of the HV battery. Must be able to open at least 1 time under a full load case.
Fuses :	Fuse must protect personnel in case of short circuit.
RESS light control :	The BMS must control the RESS status light (GREEN light and RED light) following technical regulations art 9.23. This lights must be control up to 15 min after car have been switch off (12V supply). Lights specifications will be done by the chassis provider.
BMS sensors :	Any sensor used by the BMS must be fitted inside the battery pack. Sensors to be homologated by FIA

#### **4.7 Transportation**

Concept:	The tenderer must take care that the product is able to be transported by road, sea, or air with all the regulations of the different administrations. It is the responsibility of the tenderer to stay
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informed regarding any changes to the transportation regulations and to adapt its product if needed. The tenderer can propose a system that reduces the maximum potential voltage during transportation (module).

Certification:

At the very least, the system needs to go through UN certification, as stated in the Technical Regulations. A casing must be proposed following UN certification.

## 5. Thermal conditioner unit

The provider needs to supply a conditioner that allows teams at the track to cool down the battery system in between sessions, with the aim of bringing the battery's temperature down to its initial temperature in 30 minutes maximum. Each team needs to have at least two units.

## 6. Discharging conditioner unit

In order to be able to discharge a full battery to an SOC that is compatible with air freight regulations, a discharging device must be proposed by the provider. Only two sets of this device are needed for the entire grid. This system will be directly managed on the track by the provider staff.

## 7. Charger unit

The provider is responsible for delivering the charging unit used on the track to charge the battery.

The charger unit must include all the cables (HV and LV).

### 7.1 Electric characteristics

Voltage:	AC- 380- 400V
Power:	up to 120 kW
Output voltage:	Compatible with the battery pack
BMS link:	must dialog with the battery BMS to manage any safety issues.

### 7.2 Mechanical characteristics

Dimension: The provider must design the unit in order to be as small as possible and as light as possible. Current charger is a 19-inch fly case and around 30U.

Weight: Target weight is 200kg including cables.

### 7.3 Number of parts

Number of parts for competitors: 1 per driver, up to 24.

Number of spares parts at the track: Car manufacturers will manage spare parts at the track; the provider must have three parts available at the factory at all times, ready to be quickly shipped to replace failed parts.

## 8. Safety test requirements

### 8.1 Concept

All safety tests are based on the Formula One 2015 Regulations, adapted to the characteristics of a Formula E car. So this will include as a minimum:

- \* Deceleration test based on acceleration profile from a real car crash test, with angle chosen by the Formula E technical delegate.

All detailed information can be found in the attached file *2016\_Formula\_E\_Crash\_Specifications\_Vx.pdf* to this tender.

## 9. Technical perimeters

The provider must supply:

- \* A battery pack with connectors (including the snatch-free connector)
- \* Temperature conditioner
- \* Charging unit
- \* Discharging conditioner
- \* Battery transportation casing

## 10. Spare parts

Each manufacturer should have some spare parts in order to fix issues directly linked to the usage of the battery.

The provider must have a minimum of five spare battery packs ready to be shipped from its factory at all times.



The provider is responsible for setting a timeline for delivering a battery pack compatible with the championship calendar, meaning that key components need to be stock in order to be able to fill requests from a car manufacturer. The tenderer can propose ways to manage parts.

The provider must have spare parts available at the track in order to be able to repair basic failures (cell change, leaks, BMS change, etc.).

## 11. Business case

### 11.1 Concept

The tenderer’s customers are the car manufacturers who deliver parts to teams. In order to fund the development costs, the tenderer needs to identify milestones in the development planning at which it will deliver valuable information to the car manufacturer. To obtain them, the car manufacturer will have to pay a certain amount of money. Then the tenderer will deliver kits complying with a cost cap. There will also be a limitation in the spare parts price to avoid high operating costs. The target is to cover the development cost as much as possible in the first phase and have a limited margin on the final parts to avoid escalation of the operating cost for the teams. A second cost cap will be defined for the kit delivery to the teams, allowing a car manufacturer to add a margin on top of the tenderer cost cap, in order to cover all administrative costs and spare parts management.

In order to help the provider to recover funding, the FIA will accept that the contract between the provider and each car manufacturer includes some incentive and/or penalties if the car manufacturer does not want to fund the project during the early stages. For example, a time window for funding the first milestone could be defined. If the car manufacturer funds later than this window, the delivery of the first prototype battery pack would be postponed for a certain amount of time. Financial penalties can also be discussed. The contract between the provider and the car manufacturer will have to be reviewed and approved by the FIA in order to guarantee fairness. This is just an example of funding. The tenderer can propose different ways to fund the project, including sponsoring and partial development cost covering.

### 11.2 Potential number of battery packs

#### Option 1: supply for seasons 5 and 6

Year / season	Test cars	Race cars	Car manufacturer spares	Provider spares
2017	Up to 10			
2018 / Season 5		Up to 24	Up to 24	Min 5
2019 / Season 6		Up to 24	Depends if previous year spares used	Min 5

#### Option 2: supply for seasons 5, 6 and 7

Year / season	Test cars	Race cars	Car manufacturer spares	Provider spares
2017	Up to 10			
2018 / Season 5		Up to 24	Up to 24	Min 5
2019 / Season 6		Up to 24	Depends if previous year spares used	Min 5
2020 / Season 7		Up to 24	Depends if previous year spares used	Min 5

### 11.3 Cost cap

Battery pack ready to be installed in the car: Maximum €275k (yearly fee)

This is considered a service fee, meaning that any change of battery linked to a provider error (design default or defect in materials or workmanship) is covered by this fee (including logistic cost).

This cost cap will be enforced if an order from a car manufacturer is placed in a time window to be defined by the provider and agreed by the FIA. This window will be repeated every year. Outside this window a multiplier will be accepted up to the maximum define below:

Replacement battery pack: Maximum 1.35

All prices are considered ex works

Spare parts for repairing battery packs (including at the track):

Replacement parts prices: Maximum 1.35 (catalogue prices)

## 12. Price list

The tenderer must provide an estimated price for main parts, and complete the price form at the end of this file.

## 13. Support

### 13.1 General

The provider must propose in its answer to this tender a support plan.

The car manufacturer must be given support in order to adapt its powertrain to the common battery, and also during the development phase on test cars.

### 13.2 On track support

The provider must support all collective tests and all races. In the development phase, before

the start of the first season, it must also support some car manufacturer tests.

Minimum support expected during events:

- one person per car manufacturer
- 1 Project Leader
- 2 generic technicians

A maximum of 100k€ will be charged to each manufacturer to cover the support plan.

On top of provider support, manufacturer can ask extra support during private testing at its own expenses.

### 13.3 Documentation / reporting

Information to deliver to car manufacturer for any equipment parts of the tender perimeter:

- \* User manual
- \* Safety manual
- \* Failure reports
- \* Event reports

### 13.4 Project management

The provider must designate one project leader that will be the FIA entry point for any topic related to the products that are part of this tender.

We recommend that a dedicated email address be created for any support requests from car manufacturers.

## 14. Timeline

Publishing of the FIA tender:	March 2016
Tenderer dossier deliver to FIA:	8 June 2016
FIA selection:	24 June 2016
<b>Main data of the battery system</b> *:	TBD by tenderer
<b>BMS protocol</b> *:	TBD by tenderer
UN certification:	TBD by Tenderer
Car Manufacturer registration:	1st February 2017
Purchase order from car manufacturer:	1st February 2017
Battery provider crash test:	1st June 2017
First battery available for each manufacturer (test car)	1st November 2017
Car manufacturer Homologation process	January 2018

Crash test manufacturer	April 2018
Car homologated	June 2018
Race battery available to teams	1 July 2018
Collective pre-season test	August 2018
First race season 5	September 2018

The tenderer must propose a timeline including project milestones where valuable data will be delivered to the manufacturers and the amount of cash needed at that moment of the project will be unveiled. Milestones indicated in the timeline above are examples; the tenderer can propose other ones.

## 15. Tender letter

The following information must be included in the tender, at the very least:

General information on the provider

- \* the organizational ability and resources of the provider
- \* The experience in managing the construction of automotive battery pack
  - ◆ Project management expertise
  - ◆ Engineering expertise
  - ◆ Technical expertise
- \* Manufacturing capability / supply chain management
  - ◆ Definition of the supply chain (suppliers / partners)
  - ◆ Manufacturing / Machining capabilities
- \* Testing facilities
  - ◆ Electric tests
  - ◆ Vibration tests
  - ◆ Dyno / bench
- \* Evidence of ability of the tenderer to raise and maintain funding to supply the battery
- \* The tenderer's human resources
  - ◆ Of the company
  - ◆ Allocated to the project
- \* Description of the proposed project linked to this tender
  - ◆ Concept review (cell selected, cooling system, mechanical protection, electric safety, etc.)
  - ◆ Global performance targets and technical choices to achieve them (weight, power, capacity, etc.)
  - ◆ Description of the validation process and programme it intends to put in place during the duration of the project
  - ◆ TRL matrix positioning (see below)

In case the tenderer is already engaged directly or indirectly in the Formula E Championship, it must declare it, and include in its answer to this tender all information concerning ways to secure confidentiality between projects.

## 16. TRL form

The tenderer needs to fulfil the following TRL matrix in order to show maturity on the project.

### APPENDIX – Technology Readiness Level in battery R&D

Technology Readiness Level	Description (ISO 16290)	Battery R&D state	Step done by the tenderer(Y/N) if Y, proof should be included in the dossier, if N planned time to get it done
TRL 1	Basic principles observed and reported	<ul style="list-style-type: none"> <li>• Study of technology requirements</li> <li>• Comparison of key metrics</li> </ul>	
TRL 2	Technology concept and/or application formulated	<ul style="list-style-type: none"> <li>• Initial concept design</li> <li>• Half-coin cell</li> <li>• Evaluation of basic materials e.g. cathode/anode powder</li> </ul>	
TRL 3	Analytical and experimental critical function and/or characteristic proof-of-concept	<ul style="list-style-type: none"> <li>• Initial key metrics tested</li> <li>• Full coin cell or single layer pouch cell</li> <li>• Verification of initial assumptions</li> </ul>	
TRL 4	Component and/or breadboard functional verification in laboratory environment	<ul style="list-style-type: none"> <li>• Component level validation of materials e.g. capacity, rate capability</li> <li>• Small pouch cell</li> <li>• Full scale cell characteristics forecasted</li> <li>• Initial manufacturing assessment</li> <li>• First order cost analysis of cell</li> </ul>	
TRL 5	Component and/or breadboard critical function verification in relevant environment	<ul style="list-style-type: none"> <li>• Key verification testing conducted e.g. cycle life, abuse tolerance</li> <li>• Full scale prototype cell</li> <li>• Supply chain analysis of materials / components</li> </ul>	
TRL 6	Model demonstrating the critical functions of the element in a relevant environment	<ul style="list-style-type: none"> <li>• Subsystem key functions verified e.g. bus bars, cooling</li> <li>• Battery module or small-scale battery</li> <li>• Manufacturing volume production feasibility study and risk analysis</li> <li>• Identify tolerance sensitivity</li> <li>• Breakdown of actual production cost of cell</li> </ul>	
TRL 7	Model demonstrating the element performance for the operational environment	<ul style="list-style-type: none"> <li>• Critical functions of system verified e.g. BMS, mechanical robustness</li> <li>• Prototype battery pack</li> <li>• Bench or 'flight' testing of key performance e.g. power, cycle life</li> <li>• Manufacturing process control defined</li> </ul>	

TRL 8	Actual system completed and accepted for flight ('flight qualified')	<ul style="list-style-type: none"> <li>• 'Fleet testing' completed</li> <li>• (Pre-)Production battery pack</li> <li>• Manufacturing process control verified</li> <li>• UN DOT qualification</li> </ul>	
TRL 9	Actual system 'flight proven' through successful mission operations	<ul style="list-style-type: none"> <li>• Successful operation of mission with acceptable performance and reliability</li> <li>• Production battery pack</li> </ul>	

## 17. Price form

The tenderer must fulfil those sheets without any change. If the tenderer wants to propose another financial proposal, it must do it as an optional solution.

### 17.1 Price list in euros without VAT / ex Works / ready to be installed in the car

Battery pack complete	
Conditioner unit (cooling system)	
Charger unit	
Discharging unit	
Repair cost for cell change	
Repair cost for BMS change	
On-track support plan	
Extra days support	

### 17.2 Development of financing plan

For each Milestone please define:

- Date
- Data to be delivered
- Percentage of total development cost to be fund at that step based on total development cost express in the first line.

Estimated total development cost (k€):	
Milestone 1:	Date : Data deliver : % dev cost :
Milestone 2:	Date : Data deliver :

	% dev cost :
Milestone 3:	Date : Data deliver : % dev cost :
First battery system (to car manufacturers) (k€) :	
Initial order date for car manufacturers	Date :