



European
Commission

INNOVATIVE
BATTERIES
FOR E-VEHICLES

EIC HORIZON
prize

SOLVE THE CHALLENGE

€ 10 million

Apply by **17 December 2020**

RULES OF THE CONTEST



1. THEME: INNOVATIVE BATTERIES FOR EVEHICLES

1.1 Objectives pursued

The objectives of the prize are:

- To develop a new State of the Art battery solution for electric vehicles to enable enhancement of electromobility uptake in Europe
- Contribute to CO2 and other harmful emission reduction
- Stimulate European battery and battery cell manufacturing value chain

1.2 Expected results

A novel battery system to power electric vehicles that is of reasonably low cost, fully recyclable, exhibits a long life cycle and offers a user experience similar to that of a petrol/diesel powered vehicle in terms of performance, range and re-powering time.

2. PRIZE AMOUNT(S): 10 MILLION EUR¹

3. DEADLINES & ADMISSIBILITY

Deadlines	
Opening of the submission:	23 February 2018
Deadline for registration of interest:	23 February 2019
Closing date for submission:	17 December 2020 at 17:00:00 CET ²

Joint applications by a group of participants are admitted. In this case, the participants must appoint a 'lead participant' to represent them towards the Commission. The participants will be jointly responsible and must all fulfil and respect the conditions set out in these Rules of Contest.

Applications must be submitted by the (lead) participant via the Participant Portal Submission Service.

Applications must be readable, accessible and printable. Incomplete applications may be considered inadmissible if essential elements are missing (see [General Annex B to the Main Work Programme](#)).

The page-limit for your prize application (Part B) is: 150 pages.

Participants are invited to declare their intention to participate by registering their interest via EC-BATTERIES-EIC-PRIZE@ec.europa.eu by the above-mentioned deadline.

Sample application forms will be available on the [Participant Portal Reference documents page](#).

¹ In accordance with the budgetary procedure set in the Financial Regulation No 966/2012, the award of a prize must be preceded by the adoption of the respective budget and the adoption of the financing decision. Since the prize amounts are only to be foreseen in the 2020 budget, they are subject to the availability of the appropriations provided for in the draft budget for 2020 after the adoption of the budget by the budgetary authority or, if the budget is not adopted, as provided for in the system of provisional twelfths.

² Central European Time = Brussels local time.

4. ELIGIBILITY

4.1 Eligibility criteria

The contest is open to any legal entity (including natural persons) or group of legal entities established in an EU Member State or in a [country associated to Horizon 2020](#).

Please note however that special rules may apply for entities from certain countries (see [General Annex C to the Main Work Programme](#)).

Please also be aware that participants that have already received an EU or Euratom prize cannot receive a second prize for the same activities.

4.2 Exclusion criteria

Participants will be excluded if they (or one of them):

- are subject to an administrative sanction (i.e. exclusion)³
- are in one of the following situations⁴:
 - bankrupt, being wound up, having their affairs administered by the courts, entered into an arrangement with creditors, suspended business activities or subject to any other similar proceedings or procedures under national law (including persons with unlimited liability for the participant's debts)
 - declared in breach of social security or tax obligations by a final judgment or decision (including persons with unlimited liability for the participant's debts)
 - found guilty of grave professional misconduct⁵ by a final judgment or decision (including persons having powers of representation, decision-making or control)
 - convicted of fraud, corruption, involvement in a criminal organisation, money laundering, terrorism-related crimes (including terrorism financing), child labour or human trafficking (including persons having powers of representation, decision-making or control)
 - shown significant deficiencies in complying with main obligations under a procurement contract, grant agreement or grant decision financed by the EU or Euratom budget (including persons having powers of representation, decision-making or control)
 - found guilty of irregularities within the meaning of Article 1(2) of Regulation No 2988/95 (including persons having powers of representation, decision-making or control)
- have misrepresented information required for participating in the contest or fail to submit such information
- were involved in the preparation of the prize documents and this entails a distortion of competition.

5. AWARD CRITERIA

The prize will be awarded to the entry that best addresses the following cumulative criteria:

Both primary, (non-rechargeable) and secondary, (rechargeable), battery system solutions will be evaluated.

³ See Articles 131(4) and 106(1) Financial Regulation.

⁴ See Articles 138(2) and 106(1), 107 of the Regulation (EU, Euratom) No 966/2012 of the European Parliament and of the Council of 25 October 2012 on the financial rules applicable to the general budget of the Union and repealing Council Regulation (EC, Euratom) No 1605/2002 (OJ L 218, 26.10.2012, p.1).

⁵ Professional misconduct includes: violation of ethical standards of the profession, wrongful conduct with impact on professional credibility, false declarations/misrepresentation of information, participation in a cartel or other agreement distorting competition, violation of IPR, attempting to influence decision-making processes or obtain confidential information from public authorities to gain an advantage.

The prize will be awarded to the entry that best addresses the following cumulative criteria. Where a criterion does not explicitly mention the battery system, this is applicable to both battery system solutions:

1. Provides high standards for safety, sustainability and recyclability;

- a. The battery must be intrinsically safe for the producer, user and the environment. Any issues such as, for example, thermal runaway leading to fire or explosion of the battery should be addressed and eliminated. Any health threat to users, or to workers during the production of the battery, through contact with toxic materials, must be eliminated and this has to be reasonably well demonstrated.
- b. Battery materials should be recyclable and easily dismantled. They should be in line with the framework of a circular and green economy, considering recyclability, durability and sustainability.
- c. The battery must comply with any regulatory framework in place at the closing date for submission.

2. Provides the same experience and user convenience, in terms of range and time required to recharge, as a conventional gasoline/diesel car;

- a. The new battery should allow a driving range of at least 600 km for a standard, state of the art, electric motor driven Euro NCAP small family car.
- b. The battery re-energizing time should be less than 5 minutes. For a secondary battery “re-energizing” means recharging the battery to full capacity at a recharging point (i.e. not during continuous charging as for example through induction or overhead-line charging in the street). Re-energizing should not adversely affect the life time and quality of the battery. For primary batteries re-energising means replacement of the spent battery with a fully charged one at a re-charging station (similar to the process of refuelling a vehicle at a petrol station forecourt)
- c. The battery should allow a performance envelope of the electric powered vehicle that is similar (or better) than a combustion engine powered vehicle, in terms of acceleration, noise, usable temperature range (about -20 to +50 degrees Celsius), use in dry and/or humid conditions, comfort, reliability, under normal road conditions. The battery operating temperature should not hamper the comfort of passengers and should not need the use of energy consuming cooling devices.

3. Has whole-life costs (in terms of battery materials and its functionality) equivalent or better than gasoline/diesel car;

- a. The whole life cycle cost, including consideration of CAPEX and OPEX for the battery, should be market competitive. This has to be shown by respective market studies and market forecast. (For a primary battery the analysis should include battery production, distribution, fitting and recycling/disposal costs)

4. Demonstrates reliable power delivery without significant loss of performance for an economically acceptable life time (power delivery to be demonstrated for a life time higher than batteries currently available);

- a. For a secondary battery, the life time and quality of the battery should guarantee at least an operation of 5 years under normal operating conditions, with a minimum of maintenance and repair. (Normal operating conditions correspond to e.g. the NEDC (new European Driving Cycle) or similar). Life time should be estimated as well as possible, through modelling, calculations and laboratory based accelerated ageing test procedures according to the state of the art available in 2020. Ageing of the battery should be documented/proven according to the best available methods in 2020 and its result should be in line with the aforementioned requirements. The battery must allow a cyclability (which is understood as a

cyclic phase of discharge and full recharge) during normal use that permits the attainment of the quality and life time mentioned above. The battery should have a negligible "memory effect" (deterioration of maximum storage capacity over time) and should be able to be recharged from any point of State of Discharge. The European Commission reserves the right to carry out its own testing by an independent laboratory (e.g. the battery testing laboratory of the JRC) to verify durability/lifetime claims made by the proposers.

- b. For a primary battery, a shelf-life of minimum 2 months with negligible leakage of charge should be demonstrated and the swapping mechanism (to be installed in the vehicle) should guarantee a safe and reliable operation for at least 5 years.

5. Ensures that other performance criteria (car acceleration, safety, etc.) are maintained in comparison to a combustion engine powered vehicle,

- a. The battery should be reasonably lightweight, in order to allow the mounting in a standard state of the art electric driven Euro NCAP small family car, without necessitating cost intensive weight reduction measures to be applied to the car body, or significant upgrades to breaking and suspension systems to compensate for the additional battery weight.
- b. For a secondary battery, it should be demonstrated that when necessary, this is easily accessible and/or dismountable from the electric vehicle for repair

6. Demonstrates a significant advance in new material technologies while avoiding dependence on import materials (e.g. expensive, rare, and unsustainable materials);

- a. The battery should, to a great extent, be made of materials available in Europe, using as few as possible rare earths and critical raw materials, or materials that are non-abundant, and not easily available in the EU, in order to avoid materials supply shortage. The materials should be helping to implement a competitive European battery value chain and allow vertical integration in the value chain from the materials to the final electric vehicle
- b. The CO2 balance of the production of the battery should be as low as possible and provided through a detailed analysis.

6. DOCUMENTS

The mandatory supporting documents are set out in the application form.

Participants may be asked at a later stage for further documents (for legal entity validation, bank account validation, ethics review, declaration of honour on exclusion grounds, etc.

7. PROCEDURE

If there are more than 20 applications, there will be a pre-selection phase to select the best 10 applications to pass to jury review. Otherwise, all applications will pass directly to jury review.

The pre-selection panel and jury usually have a different composition, but jury members may participate in the pre-selection panel.

The jury evaluation is planned to take place between May 2021 and July 2021.

The pre-selection panel/jury will evaluate each application against the six award criteria and score them as follows (half marks are possible decimals are not):

Criterion	Threshold	Maximum points
1. Safety and recyclability	9	15
2. User experience and convenience	9	15
3. Lifecycle costs	3	5
4. Lifetime durability	6	10
5. Performance	6	10
6. Material sustainability	6	10
Total	39	65

For applications with the same score, the pre-selection panel/jury will determine a priority order according to the following approach: The score for the criteria No 1, 2, 4 will be given a weight of 2 and the score for criteria No 3, 5, 6 will be given a weight of 1.5. If two or more applications tie for the first rank, the price will be equally divided and awarded to all.

The 3 best applications will be invited as finalists to submit a prototype to demonstrate their solution. This will entail both field trials and laboratory tests. The field tests will involve the fitting of the battery in a Euro NCAP small family car test vehicle (provided by the finalists) and running of the test vehicle over a range of 3000km under normal road conditions (40%urban and 60%extra urban driving) demonstrating no serious damage/need for repair of the battery. The laboratory tests will address durability/lifetime claims made by the finalists and will be performed according to year 2020 state-of-the-art standard battery test cycles. Such testing should be performed by an independent laboratory (e.g. the battery testing laboratory of the JRC), approved by the European Commission.

On the basis of the evaluation by the jury, the Commission will decide on the award of the prize.

All participants will be informed by August 2021 on the outcome of their application.

8. OTHER CONDITIONS

8.1 Payment arrangements

The prize money (EUR 10 Million) will be paid to the (lead) participant in one instalment after the award ceremony by bank transfer, provided all the requested documents have been submitted.

8.2 Publicity — Promoting the prize — Visibility of EU funding

8.2.1 Publicity by the winner(s)

Both finalist(s) and the winner(s) must promote the prize and its results, by providing targeted information to multiple audiences (including the media and the public) in a strategic and effective manner.

Unless the Commission requests or agrees otherwise or unless it is impossible, any communication activity related to the action (including in electronic form, via social media, etc.) must:

- (a) display the EU emblem and
- (b) include the following text:

“This action/activity/person was finalist for/ winner of the EIC Prize " Innovative batteries for eVehicles" from the European Union's Horizon 2020 research and innovation programme”.

When displayed together with another logo, the EU emblem must have appropriate prominence.

For the purposes of their obligations, the finalist(s) and winner(s) may use the EU emblem without first obtaining approval from the Commission.

This does not, however, give it the right to exclusive use.

Moreover, they may not appropriate the EU emblem or any similar trademark or logo, either by registration or by any other means.

8.2.2 Publicity by the Commission

The Commission may use, for its communication and publicising activities, information relating to the action, documents notably summaries for publication as well as any other material, such as pictures or audio-visual material that it receives from the participants (including in electronic form).

The Commission will publish the name of /both the finalist(s) and/ the winner(s), their origin, the amount of the prize and its nature and purpose — unless they have requested to waive this publication (because disclosure risks threatening its security and safety or harm its commercial interest).

Photos and videos taken by the /Agency or the/ Commission either in preparation of the award ceremony or during the award ceremony are the sole property of the /Agency or the/ Commission.

8.3 Dissemination and exploitation of results

The winner(s) must comply with the obligations set out in Title III of the Horizon 2020 Rules for Participation Regulation No 1290/2013⁶

For more information and best practice, see Articles 23a-31 of the [H2020 AGA — Annotated grant agreement](#).

8.4 Processing of personal data

8.4.1 Processing of personal data by the Commission

Any personal data will be processed by the Commission under Regulation No 45/2001⁷ and in accordance with the [Participant Portal privacy notice\(s\)](#).

All finalist(s) and winner(s) consent that the Commission publishes the following information:

- name
- Member State of origin (address or NUTS 2 region)
- their activities in relation to the award of the prize (via the summary for publication they provided)
- prize amount

in whatever form and medium.

8.4.2. Processing of personal data by the participants

The participants must process personal data in compliance with applicable EU and national law on data protection (including authorisations or notification requirements, if any).

⁶ Regulation (EU) No 1290/2013 of the European Parliament and of the Council of 11 December 2013 laying down the rules for participation and dissemination in "Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020)" (OJ L 347, 20.12.2013 p.81).

⁷ Regulation (EC) No 45/2001 of the European Parliament and of the Council of 18 December 2000 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data (OJ L 8, 12.01.2001, p. 1).

8.5 Ethics

The activities must be carried out in compliance with:

- (a) ethical principles (including the highest standards of research integrity) and
- (b) applicable international, EU and national law.

No prize will be awarded for activities carried out outside the EU, if they are prohibited in all Member States.

The participants must ensure that the activities have an exclusive focus on civil applications.

The participants must ensure that the activities do not:

- (a) aim at human cloning for reproductive purposes
- (b) intend to modify the genetic heritage of human beings which could make such changes heritable (with the exception of research relating to cancer treatment of the gonads) or
- (c) intend to create human embryos solely for the purpose of research or for the purpose of stem cell procurement, including by means of somatic cell nuclear transfer.

Research activities involving human embryonic stem cells (hESC) are moreover subject to the conditions set out in the [Statement of the Commission related to research activities involving human embryonic stem cells](#).

The participants must respect the highest standards of research integrity — as set out, for instance, in the European Code of Conduct for Research Integrity⁸.

For more information and best practice, see the [Participant Portal Online Manual](#), the [Guidance — How to complete your ethics self assessment](#) and the [Guidance note — Research focusing exclusively on civil applications](#).

8.6 Security

The activities must be carried out in compliance with Commission Decision [2015/444](#), i.e. security-sensitive information must be **EU-classified**, if its unauthorised disclosure could adversely impact the interests of the EU or of one (or more) of its Member States. Applications that are too security-sensitive cannot be awarded a prize.

For more information and best practice, see the [Guidance — Guidelines for the classification of information in research projects](#), the [Guidance — Guidelines for the handling of classified information in EU research projects](#), the [Guidance note — Potential misuse of research results](#) and the [Guidance note — Research involving dual use items](#).

8.7 Conflict of interests

The participants must take all measures to prevent any situation where the impartial and objective award of the prize is compromised for reasons involving economic interest, political or national affinity, family or emotional ties or any other shared interest ('conflict of interests').

They must inform the Commission without delay of any situation constituting or likely to lead to a conflict of interests and immediately take all the necessary steps to rectify this situation.

The Commission may verify that the measures taken are appropriate and may require additional measures to be taken by a specified deadline.

⁸ European Code of Conduct for Research Integrity of ALLEA (All European Academies) and ESF (European Science Foundation) of March 2017 http://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020-ethics_code-of-conduct_en.pdf.

8.8 Liability for damages

The Commission cannot be held liable for any damage caused to the participants or to third parties as a consequence of the prize, including for gross negligence.

The Commission cannot be held liable for any damage caused by any of the participants in the context of the prize.

8.9 Checks, audits and investigations

The Commission, the European Anti-Fraud Office (OLAF) and the European Court of Auditors may carry out checks, audits and investigations in relation to the prize.

8.10 Withdrawal of the prize — Recovery of undue amounts

The Commission may withdraw the prize after its award and recover all payments made, if it finds out that:

- (a) false information, fraud or corruption was used to obtain it
- (b) a winner was not eligible or should have been excluded
- (c) a winner is in serious breach of its obligations under these Rules of Contest.

8.11 Administrative sanctions

If a participant has committed irregularities or fraud or has made false declarations, the Commission may also:

- (a) exclude the participant from all future contracts, grants and contests financed from the EU or Euratom budget for a maximum of five years (or 10 years in case of repetition) and/or
- (b) impose a financial penalty between 2% and 10% of the value of the prize (or between 4% and 20% in case of repetition).

8.12 Cancellation of the contest

The Commission may cancel the contest or decide not to award the prize — without any obligation to compensate participants —, if:

- (a) no applications are received
- (b) the jury does not find a winner
- (c) the winner is not eligible or must be excluded or
- (d) the objective of the contest has already been achieved.

8.13 Complaints

Complaints against decisions negatively affecting the rights of a participant or winner can be brought before the General Court — or, on appeal, the Court of Justice of the European Union — under Article 263 of the Treaty on the Functioning of the EU (TFEU).

9. CONTACT

For more information, please see the prize website.

In case of questions, please contact EC-BATTERIES-EIC-PRIZE@ec.europa.eu