



European  
Commission

Horizon Prize

CLEANEST ENGINE  
OF THE FUTURE



# PRIZE APPLICATION TEMPLATE

## Administrative Forms (Part A) Application (Part B)

20 April 2016

**Disclaimer:**

*This document is aimed at informing potential contestants for the Horizon Prize for Cleanest Engine of the Future. It serves only as an example. The actual web forms and templates, provided in the online submission system under the Participant Portal, might differ from this example. Entries must be prepared and submitted via the online submission system.*





# PRIZE APPLICATION TEMPLATE

## Administrative Forms (Part A)

## Horizon 2020

Call:

Topic:

Type of action:

Proposal number:

Proposal acronym:

Wherever in this text the term 'proposal' is used, it shall be understood to refer to an 'application'.

### Table of contents

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<i>Section</i>	<i>Title</i>	<i>Action</i>
1	General information	
2	Contestants & Contacts	

#### *How to fill in the forms*

The administrative forms must be filled in for each proposal using the templates available in the submission system. Some data fields in the administrative forms are pre-filled based on the previous steps in the submission wizard.



Proposal ID

Acronym

## 1 - General information

Topic

Type of action

Call identifier

Acronym

Proposal title

*The title should be no longer than 200 characters (with spaces) and should be understandable to the non-specialist in your field.*

*Note that for technical reasons, the following characters are not accepted in the Proposal Title and will be removed: < > " &*

### Abstract

*The abstract (summary) should, at a glance, provide the reader with a clear understanding of the content of the application and its relation to the objectives of the contest. It must be short and precise and should not contain confidential information. Please use plain typed text, avoiding formulae and other special characters. The abstract must be written in English. There is a limit of 2000 characters (spaces and line breaks included).*

Remaining characters

2000

Proposal ID

Acronym

### Declarations

1) In case of several contestants, the lead contestant declares to have the explicit consent of all contestants on their participation and on the content of this application.	<input type="checkbox"/>
2) The information contained in this proposal is correct and complete.	<input type="checkbox"/>
3) I hereby declare that:	
- I have fully read and understood and agree to the official Rules of Contest.	<input type="checkbox"/>
- I am fully eligible and not excluded from participation in accordance with the Rules of Contest.	<input type="checkbox"/>
- All other contestants have confirmed that they are fully eligible and not excluded from participation in accordance with the Rules of Contest.	<input type="checkbox"/>
4) This application complies with ethical principles (including the highest standards of research integrity — as set out, for instance, in the European Code of Conduct for Research Integrity[1] — and including, in particular, avoiding fabrication, falsification, plagiarism or other research misconduct).	<input type="checkbox"/>

The coordinator is only responsible for the correctness of the information relating to his/her own organisation. Each applicant remains responsible for the correctness of the information related to him/her and declared above. If the proposal to be retained for EU funding, the coordinator and each beneficiary will be required to present a formal declaration in this respect.

According to Article 131 of the Financial Regulation of 25 October 2012 on the financial rules applicable to the general budget of the Union (Official Journal L 298 of 26.10.2012, p. 1) and Article 145 of its Rules of Application (Official Journal L 362, 31.12.2012, p.1) contestants found guilty of misrepresentation may be subject to administrative and financial penalties under certain conditions.

### Personal data protection

Your reply to the prize application will involve the recording and processing of personal data (such as your name, address and CV), which will be processed pursuant to Regulation (EC) No 45/2001 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. Unless indicated otherwise, your replies to the questions in this form and any personal data requested are required to assess your prize application in accordance with the specifications of the prize contest and will be processed solely for that purpose. Details concerning the processing of your personal data are available on the privacy statement at the page:

[http://ec.europa.eu/dataprotectionofficer/privacystatement\\_publicprocurement\\_en.pdf](http://ec.europa.eu/dataprotectionofficer/privacystatement_publicprocurement_en.pdf)

Contestants may lodge a complaint about the processing of their personal data with the European Data Protection Supervisor at any time.



Proposal ID

Acronym

### List of participants

#	Participant Legal Name	Country
1		

Example, not to complete



*Proposal ID*

*Acronym*

*Short name* **null \* Proposal**

Example, not to complete



Proposal ID

Acronym

Short name

## 2 - Administrative data

### Lead Contestant

**PIC**                      **Legal name**

*Short name:*

*Address of the organisation*

Street

Town

Postcode

Country

Webpage

*Legal Status of your organisation*

#### Research and Innovation legal statuses

Public body ..... unknown

Legal person ..... unknown

Non-profit ..... unknown

Operating Grant .....no

International organisation ..... unknown

International organisation of European interest ..... unknown

Secondary or Higher education establishment ..... unknown

Research organisation ..... unknown

#### Enterprise Data

SME self-declared status ..... unknown

SME self-assesment ..... unknown

SME validation sme ..... unknown

**Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.**

NACE Code: -





Proposal ID

Acronym

Short name

### Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Sex  Male  Female

First name

Last name

E-Mail

Position in org.

Department

Same as organisation address

Street

Town  Post code

Country

Website

Phone

Phone 2

Fax

Example,



Proposal ID

Acronym

## Validation result

Show Error

The red 'Show Error' button indicates an error due to a missing or incorrect value related to the call eligibility criteria. The submission of the proposal **will be blocked** unless that specific field is corrected!

Show Warning

The yellow 'Show Warning' button indicates a warning due to a missing or incorrect value related to the call eligibility criteria. The submission of the proposal **will not be blocked** (proposal will be submitted with the missing or incorrect value).

Section

Description

The form has not yet been validated, click "Validate Form" to do so!

Example, not to complete



# PRIZE APPLICATION TEMPLATE

## Application (Part B)

Please follow the structure of this template when preparing your entry. It has been designed to ensure that the important aspects of your work are presented in a way that will enable the experts to make an effective assessment against the evaluation criteria.

**Page limits: Part B should not be longer than 600 pages and may include additional annexes up to 300 pages. You might be also asked to provide additional documentation in a hearing. Data sets, drawings, pictures and other clarifications that can be used when quantifying the results of the suggested solution in terms of key performance metrics should be provided in the annex.**

All tables in these sections must be included within this 600-page limit. For Part B the font allowed is Times New Roman and the minimum font size allowed is 10 points. The page size is A4, and all margins (top, bottom, left, right) should be at least 15 mm (not including any footers or headers).

If you attempt to upload an entry longer than the specified limits above, you will receive an automatic warning, and will be advised to shorten and re-upload the entry. After submission, any excess pages will be overprinted with a 'watermark', indicating to evaluators that these pages must be disregarded.

**Please respect the page limit and do not take it as a target either! It is in your interest to keep your text as concise as possible, since experts rarely view unnecessarily long entries in a positive light.**

## COVER PAGE

**Title of the entry**

**Acronym of the entry**

**List of contestant(s)**

Contestant No *	Contestant organisation name	Country
1 (Lead Contestant)		
2		
3		
...		

\* Please use the same numbering as that used in the administrative application forms (Part A). The contest is open to all legal entities (i.e. natural or legal persons) or groups of legal entities.

Please note however that special rules apply for Israeli entities<sup>1</sup> and for Crimean legal persons and that entities from non-EU Member States that are covered by Council sanctions are not eligible to participate<sup>2</sup> ([see General Annex C to the Main Work Programme](#)).

Moreover, applicants that have already received an EU or Euratom prize cannot receive a second prize for the same activities.

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<sup>1</sup> See [Commission Guidelines on the eligibility of Israeli entities and their activities in the territories occupied by Israel since June 1967 for grants, prizes and financial instruments funded by the EU from 2014 onwards](#) (OJ C 205 of 19.7.2013, pp. 9-11).

<sup>2</sup> For the list of persons, groups and entities subject to EU financial sanctions, see [http://eeas.europa.eu/cfsp/sanctions/consolidated\\_en.htm](http://eeas.europa.eu/cfsp/sanctions/consolidated_en.htm).

## 1. ABSTRACT

## 2. INTRODUCTION

### Concept and approach

Describe and explain the overall concept underpinning the proposed solution. Describe main ideas, models or assumptions involved. Identify any trans-disciplinary considerations. Explain how it differs from the existing technologies and focus on the innovativeness of the solution.

## 3. DETAILED DESCRIPTION OF THE PROPOSED SOLUTION

### Describe the proposed solution in detail and present results of the initial testing.

In order to assess the admissibility and evaluate the award criteria, please provide the information requested below.

#### **1. Description of the innovation and its embodiment**

This refers to the detailed technical description and explanation of the technology and how it is implemented.

It includes complete information about:

- a) the donor vehicle (e.g., model, type, dimensions, weight, tyres) and any modification made on it, with a description of the reason and effects. If any component is installed in the trunk or the cabin, an indication of the used volume and how this can be minimised in a production version.
- b) the powertrain, i.e. type of engine, displacement, type of fuel, number of cylinders, power, weight, engine manufacturer, compression ratio, turbocharging parameters, engine management, fuel delivery, gearbox and its management, exhaust gas recirculation type and management strategy, exhaust after-treatment devices/systems and their control strategy, cooling, noise control, etc.
- c) if modifications of an existing engine or gearbox are proposed, description of any modifications
- d) main technical components of the innovation and their functioning
- e) descriptions, designs and/or blueprints concerning the innovation (included in annex in scalable pdf format)
- f) bill of materials and weights for all components
- g) theoretical effects of the proposed technology on each type of pollutant emissions constituting an award criteria, on any unregulated emission that might be generated by the catalysts or any consumable, and on fuel consumption
- h) any test results (bench and component testing) supporting the above emissions and consumption claims, apart from the mandatory chassis dyno tests described below (for instance, catalyst tests, single cylinder engine and transparent research engine tests etc.)
- i) in case any additive or consumable other than fuel is used (be it stored or on-board generated), complete information on its nature, cost, effect on maintenance and emissions (any potential side effects potentially generating unregulated

emissions) and how they are dealt with

- j) complete information on how regenerations (if any) are managed, the normal regeneration interval, including triggering parameters and procedures to allow for regeneration testing
- k) considerations on durability of the innovative systems or components (in particular of any catalyst) and any results from laboratory or engine tests to support them
- l) exhaustive visual documentation of the prototype vehicle equipped with the proposed technology at the time of testing, including details of the engine, passenger and baggage compartments and of the tyres.
- m) a user manual, i.e. instructions on how to use the submitted prototype in chassis dyno and real driving verification tests in JRC, any specific maintenance requirements, limits not to be exceeded etc.
- n) estimates of manufacturing costs for the prototype powertrain and a description of the expected solutions for scale up in mass production, leading to an estimation of the manufacturing cost of the solution under at least two different production volumes (250.000 and 1.000.000 pieces/year, identifying and including an evaluation of non-recurring costs if a new engine architecture is proposed and a new factory is needed) and routes to market and commercialisation should be provided.
- o) description of the effects of the proposed technology on running and maintenance costs, providing estimates over 100,000 km if any consumables or specific maintenance are required in comparison to current production powertrains in the same category (SCR fluid consumption or additional fuel consumption deriving from LNT regeneration strategies should be estimated, as current vehicles in this category don't normally use NOx after treatment.)
- p) description of the effects of the proposed technology on acceleration performance and driveability and how a justification of how these effects are dealt with
- q) effects of the proposed technology on noise and safety, and a justification of how these effects are dealt with to ensure that the vehicle meets roadworthiness requirements, including a declaration of compliance for noise to allow road testing at JRC if needed, and a self-certification and assumption of liability that the car is safe for testing in the laboratory and on the road. Alternatively, a certification of these aspects by an independent body can be provided.

## **2. Performance of the innovation**

This refers to the presentation of the results of testing on the prototype and description of other parameters as described in the Rules of Contest.

First, the description of the set-up of the testing facility shall be provided. It should include information about the lab that performed the tests, equipment used, related calibration and error rate etc.

Second, the results of emissions, fuel consumption and performance testing shall be reported by following the layout below.

Component	NEDC at 7°C			WLTC at 7°C					CADC at 25°C			
	Urban part	Extra-urban part	Total cycle	Low-speed part	Medium-speed part	High-speed part	Extra high-speed part	Total cycle	Urban cycle	Rural cycle	Motorway cycle 150km/h	Total cycle
NOx [mg/km]												
NO <sub>2</sub> [mg/km]												
NO <sub>2</sub> /NOx [-]												
PM [mg/km]												
PN [# /km]												
CO [mg/km]												

HC [mg/km]															
CH <sub>2</sub> O [mg/km]															
NH <sub>3</sub> [mg/km]															
N <sub>2</sub> O [mg/km]															
CO <sub>2</sub> [g/km]															
Fuel efficiency [l/100 km]															
Other test results															
Acceleration 0-100 km/h															
Acceleration 80-120 km/h															

Table 1: Requirements for the reporting of average emissions over each of the three driving cycles

Additional measurements can be proposed by the contestant(s) to substantiate their claims.

**Test Specifications:**

The applicant shall document the emissions performance of the proposed engine and powertrain technology, obtained from actual testing on the prototype vehicle on a chassis dynamometer. The test shall be conducted, as far as applicable, by following the requirements of UN/ECE Regulation No 83. In particular, the chassis dynamometer and the measurement equipment shall comply with the requirements of UN/ECE Regulation No 83. In particular, the following specific requirements apply:

- a) The following generic coefficients shall be used to simulate the road load of the test vehicle on the chassis dynamometer:  $m=1500$  kg,  $F_0=210N$ ,  $F_1=0$ ,  $F_2=0.049$  N/(km/h)<sup>2</sup>. No other additional mass (e.g. wheels rotating mass) will be applied.
- b) Market fuel shall be used for all tests.
- c) Three cycles shall be driven in the following order: New European Driving Cycle (NEDC) with engine cold start and low temperature ambient conditions, Worldwide harmonized light-duty vehicles test cycle (WLTC) with engine cold start, Common Artemis Driving Cycle (CADC) with engine hot start.
- d) Prior to NEDC testing, the vehicle shall be conditioned at an ambient temperature of 7°C for at least 6h.
- e) The test cell's temperature shall be kept during NEDC and WLTC testing at 7°C.
- f) For CADC testing, the test cell temperature shall be kept at 25°C.
- g) Between the NEDC and WLTC, the engine shall be switched off and the vehicle may be parked on the chassis dynamometer for up to 2 hours; no further vehicle conditioning shall be applied. Between the WLTC and the ARTEMIS cycles the temperature shall be kept at 25 °C for at least 2h.
- h) The duration of vehicle stand-still between the three driving cycles shall be documented.