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| **NCBR NOTES** |  |

**Annex 4 to the Regulations – Specimen of an application form for admission to the Procedure and conclusion of the Agreement under the "Hydrogen Storage" programme**

Procedure No. \_\_\_\_\_\_\_\_\_\_\_\_

**Application for admission to the Procedure and for the conclusion of the Agreement under the**

**"Hydrogen Storage" programme**

*Instruction: The Applicant fills in only the white fields. Unused fields should be crossed out.*

# DATA OF CONTRACTING AUTHORITY

|  |
| --- |
| **Narodowe Centrum Badań i Rozwoju[The National Centre for Research and Development]****ul. Nowogrodzka 47a, 00-695 Warszawa** |

# APPLICANT DATA

|  |  |  |
| --- | --- | --- |
| **ENTITY (leader of the consortium) \*** | **FULL NAME** | Click or press here to enter text. |
| **LEGAL FORM (DEFINED IN ACCORDANCE WITH ARTICLE 37 OF THE ACT ON NCBR)** | Click or press here to enter text. |
| **ADDRESS WITH POST CODE** | Click or press here to enter text. |
| **PHONE NUMBER** | Click or press here to enter text. |
| **E-MAIL** | Click or press here to enter text. |
| **NIP [TAX ID. NO.]** | Click or press here to enter text. |
| **REGON** | Click or press here to enter text. |
| **NAMES AND SURNAMES OF PERSONS REPRESENTING THE ENTITY** | Click or press here to enter text. |

\* if the Application is submitted jointly by several entities, the application should be accompanied by a sheet for each entity with information corresponding to the information contained in the table above.

# CONTACT PERSON DATA

|  |  |
| --- | --- |
| **NAME AND SURNAME** | Click or press here to enter text. |
| **POSITION** | Click or press here to enter text. |
| **ADDRESS WITH POST CODE** | Click or press here to enter text. |
| **PHONE NUMBER** | Click or press here to enter text. |
| **E-MAIL (DATA TO ARRANGE THE DATE OF PRESENTATION WITHIN THE SUBSTANTIVE APPRAISAL)** | Click or press here to enter text. |

# PROJECT NAME

|  |
| --- |
| (information can be attached as a separate document) |
| **Click or press here to enter text.** |

# DESCRIPTION OF HYDROGEN STORAGE TECHNOLOGY

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| --- |
|  (information can be attached as a separate document) |
| Click or press here to enter text. |

# P PARAMETERS

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Parameter** | **Value or description of the expected minimum parameter [unit - if applicable]** | **Value or a description of the declared P Parameter as a target to be achieved in the Programme** |
| 1. | Energy density of the storage system | Energy density per mass of a full system (filled with hydrogen) of a hydrogen storage $ E\_{m min}= 1,4 [kWh/kg] $ | The sum of points for energy density $P\_{d}=P\_{dm}+P\_{dv}$ greater than or equal to:$$P\_{d}\geq 0$$ | Click or press here to enter text. |
| Energy density per volume of the hydrogen storage system $ E\_{V min}= 0,8 [kWh/dm3]$ | Click or press here to enter text. |
| 2. | The cost of producing one hydrogen storage system in terms of stored energy in the form of hydrogen (in commercial production) | max. 20 [Euro/kWh] | Click or press here to enter text. |
| 3. | Hydrogen parameters at the output of the hydrogen storage system, enabling the supply of the PEM type hydrogen fuel cell | Quality in accordance with SAE J2719 Physical parameters required to supply a PEM type hydrogen cell  | Click or press here to enter text. |
| 4. | The ambient temperature allowing the hydrogen storage system to operate | from -25 to 40 [degrees C - range] | Click or press here to enter text. |
| 5. | The lifetime of the hydrogen storage system, understood as the guaranteed number of storage system refills from the minimum to the maximum operating level of hydrogen in the Hydrogen Storage System, which does not cause the hydrogen storage system capacity to drop by more than 5%; it is possible to carry out a service operation once during the declared lifetime, for example by exchanging the absorbing material or replacing the valve, however the cost of such service operation should be included in the cost of production of one hydrogen storage system | min. *Nmin* = 1000 [cycles]  | Click or press here to enter text. |
| 6. | The speed of charging the system with hydrogen  | Maximum 10 minutes for filling HSS from minimum to maximum operating hydrogen level or min. 0,5 [kg H2/min.] | Click or press here to enter text. |
| 7. | Monitored Hydrogen Storage System Parameters | The temperature and operating pressure of the hydrogen storage system, the hydrogen level of the system | Click or press here to enter text. |
| 8. | Additional functionalities of the hydrogen storage system, important from the point of view of potential for commercialization  | Not required | Click or press here to enter text. |
| 9. | The possibility of allowing a specific type of Mobile Facility equipped with a hydrogen storage system for use on the European market  | MandatoryVerified by the possibility of being released for use on the European market for a Mobile Facility, e.g. EC 79/2009 with EC 406/2010 | Click or press here to enter text. |
| 10. | The working capacity of the delivered hydrogen storage system prototype at the end of the Programme | min. 0.20 [kg H2] | Click or press here to enter text. |
| 11. | Distance test for the Mobile Facility - travelled distance required of a minimum of 10 km in a comparable time for a given type of Mobile Facilities, the distance travelled by the Mobile Facility using the fuel cell powered by the hydrogen storage system prototype presented at the end of the Programme; if the Mobile Facility also uses other sources of electrical energy, e.g. batteries, the distance travelled must include only energy from the fuel cell; *e.g.:* the Mobile Facility - a drone - on the flight uses on average 40% of the power of the electric fuel cell and 60% of the electric power of another electricity source: the minimum distance travelled by this Mobile Facility must be: 25 km (10 km/40%) | Required | Click or press here to enter text. |
| 12. | Peak electrical power obtained from the fuel cell in the Mobile Facility during the demonstration | min. 2000 W | Click or press here to enter text. |
| 13. | Energetic efficiency $ϵ\_{eff}$ [%] of one storage work cycle, understood as:$ϵ\_{eff }=\frac{E\_{out}}{E\_{in}+E\_{ext}}$ Where:$E\_{out}$ - energy accumulated in hydrogen released from the storage to supply the fuel cell (1 kg of hydrogen corresponds to 33.33 kWh of energy)$E\_{in}$ - energy accumulated in hydrogen introduced into the storage during its filling (1 kg of hydrogen corresponds to 33.33 kWh of energy)$E\_{ext}$ - energy supplied from external energy sources, e.g. from battery, heating, from a fuel cell, etc., used to operate a hydrogen storage system, including filling it with hydrogen, release of hydrogen and maintenance of hydrogen in a hydrogen storage system, without thermal energy obtained from the standard work of the fuel cell | min. 80% | Click or press here to enter text. |

# JUSTIFICATION OF P PARAMETERS (INDICATION OF THE METHOD OF DETERMINATION OF VALUE OF INDIVIDUAL P PARAMETERS)

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| --- |
| (information can be attached as a separate document) |
| Click or press here to enter text. |

# REMUNERATION FOR EXECUTION OF PHASE 1 AND COMMITMENT TO ENSURE THE NCBR SHARE IN THE REVENUE FROM THE COMMERCIALIZATION OF R&D RESULTS AND REVENUE FROM THE COMMERCIALIZATION OF RELATED TECHNOLOGIES

|  |  |
| --- | --- |
| I/We, the undersigned, hereby declare that the Applicant will perform Phase 1 of the Contract for the following remuneration: | Click or press here to enter text.(say: Click or press here to enter text. **)** PLN gross. |
| I/We, the undersigned, hereby declare that the Applicant undertakes to pay NCBR a share in Revenue from Commercialization of R&D Results and in Revenue from Commercialization of Related Technologies, amounting to: | Click or press here to enter text.% Revenue from Commercialization of R&D Results and Revenue from Commercialization of Related Technologies. |

# SCOPE OF THE PROPOSED WORKS IN PHASE 1 AND SCHEDULE OF WORKS PERFORMANCE

|  |
| --- |
|  (information can be attached as a separate document) |
| Click or press here to enter text. |

# PRELIMINARY SCOPE OF THE WORKS EXPECTED IN PHASE 2 AND PHASE 3

|  |
| --- |
|  (information can be attached as a separate document) |
| Click or press here to enter text. |

# PLANNED KIND/TYPE OF MOBILE FACILITY

|  |
| --- |
| (information can be attached as a separate document) |
| Click or press here to enter text. |
|  |

# COMMERCIALIZATION POTENTIAL DESCRIPTION

|  |
| --- |
| (information can be attached as a separate document) |
| Click or press here to enter text. |

# INITIAL ESTIMATION OF A CONTRACTOR'S REMUNERATION FOR PHASE 2 AND PHASE 3

|  |  |
| --- | --- |
| I/We, the undersigned, hereby declare that the Applicant preliminarily estimates the remuneration for the execution of Phase 2 of the Agreement for the following amount: | Click or press here to enter text.(say: Click or press here to enter text. **)** PLN gross. |
| I/We, the undersigned, hereby declare that the Applicant preliminarily estimates the remuneration for the execution of Phase 3 of the Agreement for the following amount: | Click or press here to enter text.(say: Click or press here to enter text. **)** PLN gross. |

# THE PROJECT TEAM \*

|  |
| --- |
| (information can be attached as a separate document) |
| No. | Name and surname, academic and professional title | Description of the experience and achievements in the fields related to the proposed Hydrogen Storage Technology and the construction of the Hydrogen Storage Tank System (projects, publications, inventions, scientific achievements, practical achievements) |
| 1. | Click or press here to enter text. | Click or press here to enter text. |
| 2. | Click or press here to enter text. | Click or press here to enter text. |
| 3. | Click or press here to enter text. | Click or press here to enter text. |
| 4. | Click or press here to enter text. | Click or press here to enter text. |
| 5. | Click or press here to enter text. | Click or press here to enter text. |

\* in the case when the Project Team consists of a larger number of people, a sheet with information corresponding to the information contained in the table above should be attached to the Application form for each member of the Project Team.

# DESCRIPTION OF THE PROJECT INNOVATION

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| --- |
| Innovation is the value of Hydrogen Storage Technology **presented in the** **description of Hydrogen Storage Technology**, corresponding to the degree to which Hydrogen Storage Technology is not a part of the state of the art. (information can be attached as a separate document) |
| Click or press here to enter text. |

# NATIONAL SMART SPECIALIZATION

|  |  |  |
| --- | --- | --- |
| **No.** | **National Smart Specialization [KIS]** | **Assignment (mark the right square)** |
| 1. | KIS 4. High-efficiency, low-emission and integrated systems for generation, storage, transmission and distribution of energy |[ ]
| 2. | KIS 6. Environmentally friendly transportation solutions |[ ]
| 3. | Other (what?): Click or press here to enter text. |[ ]

# DECLARATION OF THE LACK OF THE BASIS OF EXCLUSION

I/We, the undersigned, hereby declare that in relation to the Applicant (and in the case of submission of the Application jointly by several entities - in relation to any of the entities acting together as an Applicant), there are no grounds for exclusion from the Procedure referred to in point II, point 2.1, paragraph 5 of the Regulations.

# OTHER DECLARATIONS OF THE APPLICANT

I/We, the undersigned, hereby declare on behalf of the Applicant that:

1. The Applicant has familiarized oneself with the terms and conditions set out by the National Centre for Research and Development in the Regulations and in the Schedule and Agreement and is bound by the principles of the Procedure set out therein and the information necessary to prepare the Application,
2. The Applicant accepts the content of the Regulations and attachments to the Regulations, including the draft Agreement and the Schedule, and the conditions contained therein, including the terms of payment and the date of implementation of the Program, and we do not bring any comments to them,
3. The Applicant meets all the requirements contained in the Regulations,
4. The Applicant consents to the delivery of letters in the Procedure in an electronic version, to the e-mail address indicated in the part under letter C of the Application,
5. The Applicant (and in the case of submitting the Application jointly by several entities - all entities acting jointly as the Applicant), did not submit another Application in the Procedure above this Application,
6. The Applicant declares and warrants that the R&D works performed under the Agreement will not be financed from public funds, in particular from funds from the European Union budget, in addition to the remuneration paid in accordance with the Agreement by the National Centre for Research and Development [Narodowe Centrum Badań i Rozwoju],
7. The Application submitted by the Applicant is compliant with the content of the Regulations,
8. The Applicant applies for admission to participate in the Procedure and to conclude the Agreement,
9. If the Applicant is admitted to enter into the Agreement, it undertakes to conclude the Agreement in accordance with the Regulations at the date and place designated by the NCBR.

# ANNEXES

|  |  |  |
| --- | --- | --- |
| **No.** | **type of attachment** | **attached** |
| **1.** | a document showing the authorization of persons signing on behalf of the Applicant (e.g. a printout from the EMS system) |[ ]
| **2.** | power of attorney/powers of attorney (if applicable) |[ ]
| **3.** | description of Hydrogen Storage Technology (if submitted in a separate document) |[ ]
| **4.** | the scope of expected works in Phase 1 and the schedule for their implementation (if submitted in a separate document) |[ ]
| **5.** | preliminary scope of work in Phase 2 and 3 and preliminary estimation of the Contractor's remuneration for the implementation of Phase 2 and Phase 3 (if submitted in a separate document) |[ ]
| **6.** | statements and information regarding trade secret preservation |[ ]
| **7.** | information on the entities submitting the application, if submitted jointly |[ ]
| **8.** | consortium agreement (if applicable) |[ ]
| **9.** | other documents which, in the Applicant's opinion, may be relevant for substantive appraisal |[ ]

|  |  |  |
| --- | --- | --- |
| Place, date |  | Signatures of authorized persons |