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REQUEST FOR QUOTATION

for the preparation of publication referring to available and future forms of energy storage

I. Subject Matter:

The subject matter of the contract is a service consisting in the preparation of publications on available and future forms of energy storage in the context of an increasing energy (electricity) generation from variable sources, i.e. the renewable energy sources (RES).

II. Scope and Implementation of the Contract

Project Background

Global climate neutrality near the mid-century will be required to restrict the growth of mean global temperatures up to 1.5 degrees Celsius. That goal shall not be possible to achieve without changing the way, in which energy is acquired, stored and used. Due to various limitations and environmental challenges related to the generation of energy from fossil fuels, waste, biogas, biomass, atom and water, energy storage will play an increasingly important role in the co-operation with wind and photovoltaic power plants.

Scope and Implementation of the Contract

1. Considering the presented project context, WWF Poland is looking for a broad review of international scientific, consultancy and industry specific literature on energy storage technologies (in various forms, including but not limited to electric, heat, potential and kinetic energy). The review should include information on technologies in the scale from use as energy storage in cars and home installations, up to a large-scale (utility) range. Technologies such as (including but not limited to) lithium-ion batteries, batteries in other technologies (e.g., salts, sodium), flow batteries, phase change materials, pumped storage hydroelectricity (except natural watercourses), heat or cold storages (water, as well as other chemical compounds), compressed air, superconducting magnetic energy storage, fuel cells, flywheels, supercapacitors are taken into account but also indirect forms of energy storage such as synthetic gas (with CO₂ capture) and hydrogen. The publication should present both already existing and commercialised technologies as well as technologies of which the economic application (or technological maturity) still does not allow to commercialise them. It should also present the development perspectives for the technologies and barriers concerned.

An overview of the specific technologies should contain the information on:

- The operation of the technology in a way understandable to the recipient (details below)
- Main technology application¹
- Current application and scale of the technology application (with examples of applications)

¹ e.g. large warehouses at the level of network operation, energy storage in a solar plant, heat storage for domestic needs, functioning of heating networks in the diurnal and seasonal aspects, home installations, power supply for vehicles, etc.

around the world and entities carrying out investments and research in this field globally and in Poland)

- Current and expected cost (CAPEX and OPEX) of the particular form of storage including the learning curve, with a perspective up to 2030 and 2050, to enable the use of data in subsequent analyses of the weighted average cost of energy production.
- The possibility of technology scaling.
- The technology's impact on the environment (during the extraction of necessary materials, production, operation and utilisation, as well as life-cycle assessment in the context of greenhouse gases).
- Technology limitations in the context of raw materials availability and potential geopolitical threats.

Additionally, the publication shall be prepared in a way that allows to compare individual technologies (of similar scope), i.e. it should use the same units and ranges, tables, charts. The publication must also contain conclusions that estimate the development perspective and scalability of technologies concerned.

The publication should be based on scientific literature. In the case of cost analyses, references to renowned consulting companies, research institutions or materials of governmental institutions are allowed. Technological potential, examples and cost prediction should be based on the most recent and widely quoted literature. In the case of the technological processes, physics of phenomena, older widely quoted articles are admitted. Due to the dynamics of the market development in the case of costs and projections of costs in the future, it is postulated that literature not older than of the year 2016 is used while the publications of the years 2017, 2018 and 2019 are preferred².

The publication will be intended for a recipients holding an university graduate, not necessarily in the field of technology, let alone educated in the field of energy storage. Examples of groups of people to whom the publication will be addressed: politicians, policy officers in climate and energy, employees of energy companies, consulting companies, industry journalists (energy, economics, geopolitics), economists. In this context scientific (specialist) jargon is acceptable along with the explanation of the concept or phenomenon, and the details of the precise functioning mechanism, physics of phenomena are of secondary importance compared to the potential or costs of a given technology (but the basic assumptions should be placed there). Model publications may include the reports of consulting companies or articles in magazines such as "Świat Nauki", "Nature" or "Scientific American", in which the content (at least to a satisfactory degree) is understandable for people with basic knowledge in the field and broad general knowledge.

The publication in Polish and English (the Contractor shall be responsible for the translation) should have at least 50 A4 pages (without footnotes, covers and title page) in standard font and text layout. In addition, it should contain a summary at the beginning, along with an *executive summary*. The publication will refer to at least 10 technologies.

Facts and data must each time have an annotation containing the source, including: the name of the author, the title of the publication, place and year of publication, page number, link to online sources and date of source acquisition. The publication must contain a bibliography, glossary, table of contents and the list of tables and charts.

² Examples indicating the importance of that point: variable costs of raw materials (e.g. cobalt) in recent years and historical predictions regarding the development of photovoltaics, in which historical projections, both institutions such as IEA, as well as Greenpeace turned out to be underestimated.

The Contractor will also prepare a presentation summarising the result of the work. The Contractor shall present the results of work at least twice in Poland at their own expense, at the place indicated by the Employer at least two weeks earlier.

III. **Deadline for the performance of the Contract.**

The contract will be processed within 90 days from the date of signing the agreement. After 30 days from the date of signing the agreement, the Contractor must provide the WWF Polska Foundation with an initial version of the review of one technology in English or Polish so that it is possible to set a satisfactory range for both parties. WWF Polska Foundation will have 5 working days to present their comments to the initial version. After 90 days, the WWF Polska Foundation will have 10 working days to review the report in English or Polish and to submit comments. The contractor will have 10 working days to introduce the comments. After the receipt of the report in the first language version by the WWF Polska Foundation, the Contractor should submit a translation of the report based on the received version of the report within 15 working days.

IV. **Participation in the Proceedings - Terms and Conditions**

1. In these proceedings, offers shall be submitted by the Contractors meeting all below described conditions:
 - 1) When submitting the offer, they accept the content of the order without reservations;
 - 2) The Contractor shall provide Services to WWF Polska Foundation in accordance with the highest standards, while maintaining due diligence and taking into account the specificity of the business and interest of the Employer as a non-governmental organisation;
 - 3) The Contractor shall prove the following experience and features:
 - a. at least 3 years of academic or professional experience in the field related to energy storage.
 - b. team consisting of at least two people, including:
 - having at least a PhD in technical sciences or pursuing a PhD in the fields related to energy storage and related ones
 - having at least a PhD in economics or pursuing a PhD in topics related to energy storage and related ones
 - c. authorship or co-authorship of at least 3 scientific or analytical publications (reports from a think tank, state or research institutions) in the field of energy or energy storage, including:
 - at least 2, issued in the last 3 years,
 - at least one publication issued by a foreign or international institution or foreign scientific journal in English.
 - d. ability to use and access full versions of articles of leading academic periodicals in the field, through e-libraries, published in Polish and English, including at least 60% of the periodicals from the following list:
 - International Journal of Hydrogen Energy
 - Journal of Energy Storage
 - Energy Storage Materials
 - Applied Energy
 - Renewable and Sustainable Energy Reviews
 - Renewable Energy Focus

- Energy
 - Energy Conversion and Management
 - International Journal of Electrical Power & Energy Systems
 - Progress in Energy and Combustion Science
- 4) The Contractor's financial and economic situation ensures correct performance of the contract;
 - 5) The Contractor meets the conditions for participation in the proceedings and there are not any personal or capital links between the Employer and the Contractor (according to Annex No. 2 and Annex No. 3).
 - 6) The Contractor does not belong to the same capital group as another contractor who has submitted a separate offer in this request for quotation; in the case of affiliation to the same capital group, the Contractor may submit together with the declaration, the documents or information confirming that links to another contractor do not lead to distortion of competition in the proceedings (according to Annex No. 4).

The assessment of compliance with the above conditions will be made according to the formula: "meets - does not meet" based on the Bid Form and statements submitted with the offer (according to the template constituting Annexes No. 2, 3 and 4 to this inquiry).

The Employer reserves the right to check the above information and request from the Contractors evidence in the above scope at the stage of bid evaluation. If such evidence is not submitted or the conditions are not confirmed with such evidence, the offer of such Contractor will be rejected.

The Employer reserves the right to request explanations or additions if it does not affect competitiveness.

2. Contractors acting together.

- 1) The Contractors may jointly apply to be granted the Contract. In this case, the entities are jointly and severally liable for the performance of the Contract. The same Contractor may be a member of only one consortium.
- 2) The Contractors acting jointly shall establish a representative (leader) to represent them in the contract award procedure or to represent them in the proceedings and to conclude a contract.
- 3) The Contractors jointly applying for the Contract are required to submit together with the offer the original power of attorney to represent all Contractors jointly applying for the contract.
- 4) In the case of a joint bid for the order by contractors, the declarations referred to in paragraph 1, section 6) above are submitted by each of the contractors jointly applying for the order. These documents shall confirm the fulfilment of conditions for participation in the proceedings and the absence of grounds for exclusion in the scope, in which each of the Contractors demonstrates that they meet the conditions for participation in the procedure and absence of the grounds to be excluded.
- 5) If the offer of the Contractors referred to in point 1) above is selected, the Employer reserves the right to request, prior to the conclusion of the public procurement contract, an agreement regulating the co-operation of such Contractors.

3. Sub-contractors

The Employer requests the Contractor to indicate the part of the Contract, the execution of which the Contractor intends to entrust to the sub-contractors (relevant information must be provided in the offer form) and to give by the Contractor the name (business names) of the sub-contractors, who will participate in the Contract execution.

V. Description of the method of the offer preparation

- 1) The offer shall be in Polish or English, in writing, and shall be submitted by post, electronically (e-mail) or in person to the registered office of the Employer. When submitting the offer, the Contractor must submit all the required documents specified in the request for quotation.
- 2) The offer must respond to the contents of this request for quotation.
- 3) All submitted documents should be submitted in the form of an original or photocopy confirmed for conformity with the original by the Contractor.
- 4) Any corrections or changes to the text of the offer must be initialled by the person signing the offer.
- 5) It is recommended that all saved offer pages are sequentially numbered.
- 6) The offer together with the statements must be signed by persons authorised to make declarations of will on behalf of the Contractor. All signatures must be drawn up in such a way that the identification of the signer (clear first name and surname, or personal stamp with illegible signature). In the case of signing by a proxy, a Power of attorney shall be also submitted.
- 7) The amount specified in the offer must be expressed in Polish zlotys in the gross amount including VAT. If the Contractor places a tender whose selection would result in the Employer's tax obligation in accordance with the provisions on tax on goods and services (VAT), the Employer, in order to evaluate such a tender, shall add to the price presented in the tender the value-added tax which they would have to settle in accordance with those provisions. The price must take into account all the requirements of this Request for Quotation.
- 8) The price must include all costs related to the performance of the contract.
- 9) The Employer does not allow partial or variant offers to be submitted.

VI. Documents required to submit an offer and to confirm the fulfilment of the conditions

- 1) Offer form (Annex No. 1).
- 2) Statement referring to the fulfilment of conditions for participation in proceedings (Annex No. 2).
- 3) Declaration of the Bidder on the absence of capital or personal links (Annex No. 3)
- 4) Declaration on the absence of belonging to the capital group (Annex No. 4) if the contractor does not belong to any group, they submit a declaration together with the offer. Otherwise, the statement is made upon the request of the Employer after opening the offers.
- 5) List of experience (Annex No. 5)

VII. Criteria for the evaluation of offers and selection of the Contractor

- 1) In order to choose the best offer, the Employer shall conduct an assessment, which shall form the grounds to select one offer from among the Contractors meeting the conditions specified in the content of the request for quotation.
- 2) The Employer shall assess the offers following the price criteria:

<i>Criterion</i>	<i>Meaning of percentage criterion</i>	<i>The maximum number of points to be assigned to the offer for the given criterion</i>
Gross price [C]	30%	30 points

Publications [P]	60%	60 points
Co-authorship of consulting publications [W]	10%	10 points

The method to have the criteria evaluated:

- a) Criterion - gross price:

$$C = \frac{C_{min}}{C_o} * 30 \text{ points}$$

where:

C - the point value of the criterion being assessed

Cmin - the lowest price from among the offers submitted

Co - price of the offer being evaluated

- b) Criterion - publications:

$$P = \frac{P_o}{P_{max}} * 60 \text{ points}$$

where:

P - the point value of the criterion being assessed

Pmax - the highest number of points in the "Publications" criterion gained among all Bidders

Po - number of points in the "Publications" criterion obtained by the Bidder

number of points **Po** shall be calculated as follows:

- Each research and analytical paper (a think tank report, State or research institutions) - 5 points
- In the case of a scientific publication in a magazine with an Impact Factor: the IF value shall be added to the basic score

- c) Criterion - co-authorship of consultancy publications

Points in the Co-Authorship criterion [W] shall be awarded in the following way:

Co-authorship of one or more consultancy publications - 10 points

Contractors will provide in the Bid Form, the necessary information to evaluate this criterion.

- 3) The offer with the highest number of points will be considered the most advantageous, according to the formula $O = C + P + W$. The selection of the best offer will be made by the commission.
- 4) If it is not possible to choose the best offer due to the fact that two or more offers will get the same number of points, the Employer will invite the Contractors who submitted such offers to

submit additional offers within the price range. Additional offers should include, the price not higher than the original one.

ATTENTION: The Employer reserves the right to not choose and to cancel the order without giving a reason.

VIII. Method and date of submitting the offers

The offer must be submitted in writing, by post, e-mail (e-mail) or personally to the registered office of the Employer to the following address:

WWF Poland Foundation
ul. M. Gandhiego 3
02-645 Warsaw

or to the following e-mail address: jpietruszka@wwf.pl

by **14 March 2019 until 16:00 (the date of receipt or getting the information from the post office that the parcel was received shall be taken into account)**

please include the following on the envelope:

"Request for Quotation No. 01/02/19 /OK for the preparation of publications on available and future forms of energy storage"

IX. Persons authorised to communicate with Contractors.

The persons authorised by the Employer to contact the Contractors are:

- Oskar Kulik - e-mail: okulik@wwf.pl ; tel. 785 851 411
- Joanna Pietruszka - e-mail: jpietruszka@wwf.pl tel. 22 849 84 69 ext. 104

X. Final comments

- 1) All bidders who submit the offers will be notified about the results of the procedure, and the selected bidder will be additionally informed about the date and place of signing the contract. The results of the proceedings will be announced on the wwf.pl website. The offer validation period is 30 calendar days from the day of the deadline for submission of offers.
- 2) The Employer reserves the right to invalidate the tender procedure without stating the reason. In case of cancellation of the proceedings, the Employer shall not bear the costs of the proceedings.
- 3) These proceedings are not subject to the provisions of the Act of 29 January 2004 Public Procurement Law.

XI. Explanations granting mode

- 1) Each Bidder has the right to ask the Employer to clarify the content of the inquiry. The Bidder's questions must be sent to the e-mail address: okulik@wwf.pl
- 2) The Employer will immediately respond and send the response electronically to the e-mail address indicated in the inquiry.

XII. Amendments of the Contract

The Employer shall not provide for the possibility to amend the contract.

XIII. Annexes to the Request for Quotation

The following templates shall form the Annexes to this Request for Quotation:

Annex	Description
<i>Annex No. 1</i>	Bid Form Template
<i>Annex No. 2</i>	Statement of fulfilment of conditions for participation in proceedings
<i>Annex No. 3</i>	Declaration of no capital or personal links
<i>Annex No. 4</i>	Statement on the absence of membership in the capital group
<i>Annex No. 5</i>	List of experience

1/03/2019
Pulik