
REQUEST FOR TENDER no. 34/2021/MISCOMAR+ of 28.04.2021
concerning the service of performing gasification tests of biomass (miscanthus)

This open tender is publicized in order to award a contract in the field of research accordingly to the agreement no. FACCE SUPERPLUS/III/MISCOMAR+/03/2020, as well as securing the transparency, equal treatment of the subjects interested in being awarded the contract.

I. THE CONTRACTING PARTY

Research and Innovation Centre Pro-Akademia (RIC),
KRS 0000171789, NIP VAT no.: 7281919068, REGON: 471342017,
9/11 Innowacyjna St.
95-050 Konstantynów Łódzki
Poland

Website of the Contracting Party: www.proakademia.eu

A contact person representing the Contracting Party is Ms. Iwona Adamkiewicz.

Contact details of the representative: iwona.adamkiewicz@proakademia.eu

II. SHORT DESCRIPTION OF THE PROJECT, WITHIN WHICH THE CONTRACT WILL BE EXECUTED

The Research and Innovation Center Pro-Akademia (RIC) is currently implementing a project "Miscanthus biomass from marginal and polluted areas PLUS", concerning the use of miscanthus as a leading, climate-resistant perennial plant to be cultivated on marginal and polluted soils. The project also includes the research on the valorization of *Miscanthus x giganteus* biomass as a source of renewable energy and for creating new bioproducts. In the renewable energy pathway, the investigations will focus on thermochemical gasification processes, the tracking of the fate of heavy metals present in the contaminated biomass to minimize their (re)emission to the environment, and the recovery of heavy metals from process residues before they are used as fertilizers. During the process it will be necessary to recover ash and char, and collect gas samples in order to test the content of plant nutrients (N, P, K, Ca, Mg) and heavy metals (Pb, Cd, Zn).

RIC does not have its own experimental facilities to carry out gasification experiments to obtain the products for the above-mentioned gasification tests and analyses. Therefore, the project includes a subcontracting budget to acquire the necessary services, information and materials (samples).

III. THE SUBJECT OF THE TENDER

CPV: 73100000-3 - Research and experimental development services

The Tenderer is supposed to provide a service being the biomass (miscanthus) gasification tests and the modification of the test rig necessary to connect the sampling equipment for the sampling of heavy metals present in the product gas stream.

The detailed scope of work to be performed by the Tenderer is as follows:

1. Perform gasification test runs with two types of miscanthus in pellet form: *Miscanthus x Giganteus* and a blend of seed-based hybrid genotypes. Pellet will be supplied by RIC, and its main characteristics are:
 - a. moisture approx. 10%;
 - b. ash content between 1.5 and 3% w/w.

- c. calorific value: 16-18 MJ/kg
- d. pellet size: 6 – 8 mm diameter pellets
- e. contaminated by heavy metals, mainly Pb, Cd, Zn (main elements of interest)

The Tenderer will receive ca. 400 kg of pellets from both types of miscanthus mentioned above.

2. Requirements regarding the gasification installation – the installation used in the gasification process should meet the following minimum requirements:
 - a. Type of reactor: fluidized bed reactor (bubbling or circulating), however excluding indirect gasifier types due to the need to recover the unconverted biomass (char);
 - b. Bed material: all common natural and synthetic bed materials are allowed (e.g. sand, alumina);
 - c. Fuel feed rate: between 3 and 20 kg/h;
 - d. Min. gas temperature: 2 temperature setpoints of ca. 750 °C and ca. 850-900 °C;
 - e. Min. pressure: atmospheric pressure;
 - f. Gasification medium: steam, air, oxygen or their mixtures;
 - g. Presence of gas cleaning equipment: minimum one high-temperature cyclone is required to separate (a part of) the fly ash from the outgoing gas stream;
 - h. a possibility to determine the gas flow rate at the outlet of the reactor. If no gas flow rate measurement device is present and there are no other means available to determine this parameter, the Tenderer will install two additional connection points to inject a small amount of an inert gas (e.g. Ar or He) and to measure its concentration further downstream in order to calculate the average gas flow rate. This gas measurement and the dosing equipment will be provided by RIC;
 - i. Minimum number of experimental hours: according to the maximum feed rate mentioned above, i.e. 20 operational hours. The Contracting Party allows distributing these operational hours over multiple working days. However, the minimum continuous operation of the gasifier in steady-state must allow the Contracting Party to perform their measurements as defined in point 4d;
 - j. The preparation, operation, maintenance and other work necessary to run the gasification installation should be done by the Tenderer;
 - k. The Tenderer declares that the gasification installation offered in the answer to this Tender is suitable to perform the described tests.
3. Requirements regarding the analytical facilities, chemicals and laboratory equipment available directly to the Tenderer:
 - a. On-line gas analysis equipment to measure and record the composition of the gas produced, and to provide at least the average value with the measurement uncertainty recorded during the steady-state operation. The reported gas composition values should include the volume fractions of methane (CH₄), hydrogen (H₂), carbon monoxide (CO), carbon dioxide (CO₂) and nitrogen (N₂), which should represent at least 90% by volume of the measured species. In case the volume fractions of the abovementioned species represent less than 90% v/v of the measured species, the volume fractions of other species present in the gas must be reported, starting with the most significant (the ones with the highest volume fraction).
 - b. Elemental analysis (ICP or equivalent) to assess the release pattern of the main elements of interest. The analysis will be carried out by the Tenderer, after every experimental day on the samples collected by the Contracting Party during the tests. The number of samples will be 5 every time, including a char sample, fly ash sample, two samples of trapping liquids (from the sampling line) and one spare sample to be decided on site. The analytical results shall be available before the end of the next working day;

- c. chemicals / reagents required for wet sampling method:
 - i. silica gel, for inorganic trace analysis, 3 kg
 - ii. silica gel, 6-16 mesh, 5 kg
 - iii. nitric acid (HNO₃), 70%, for inorganic trace analysis, 2 dm³
 - iv. hydrogen peroxide (H₂O₂), 30%, for inorganic trace analysis, 6 dm³
 - v. acetone, for inorganic trace analysis, 10 dm³
 - vi. isopropanol, for inorganic trace analysis, 10 dm³
 - d. 2 gas pumps for the sampling of the gas with a minimum volumetric flow rate of 10 dm³/min.
 4. Requirements regarding the gasification tests:
 - a. Steady-state gasification conditions (i.e. deviation from the average temperature setpoint not more than 30 °C, similar regarding the fluidization conditions for each gasification run);
 - b. The Tenderer will have the possibility to use countermeasures to prevent sintering and / or agglomeration of the bed, e.g. in the form of adding additives like kaolin or equivalent;
 - c. Enabling the Contracting Party to measure heavy metals in the volatile phase at the outlet of the gasifier and after the gas cleaning stage, using a system prepared by the Contracting Party: the Contracting Party will bring its own sampling and measurement setup to be installed in two locations of the gasification test rig. The Tenderer will provide the sampling points and the necessary space to install the sampling system. The exact geometry of the sampling points will be provided on request;
 - d. The experimental matrix will be prepared by the Tenderer, but in cooperation with the Contracting Party. The Contracting Party assumes four test days per type of biomass:
 - i. day 1: temperature setting 1
 - ii. day 2: temperature setting 2
 - iii. day 3: repeat a setting
 - iv. day 4: spare or other setpoint

The final number of experimental days will depend on the actual biomass throughput of the installation of the Tenderer, but it should allow for the realization of the planned experimental matrix as described above. The Contracting Party assumes to complete the experiments within 2-3 calendar weeks.
 5. The results expected by the Contracting Party from the work performed within the scope of the Tender are:
 - a. Char samples min. 1 kg from each type of biomass;
 - b. Fly ash from gas cleaning unit: samples (ca. 100 g) after each test run;
 - c. Data logs of process parameters and on-line gas analysis results;
 - d. Results of the analyses mentioned in point 3b

IV. DURATION OF THE WORKS & THE TIME OF BINDING THE OFFER

1. The tests will be carried out in the period from June to December 2021. The exact date of implementation depends on the Covid-19 epidemiological situation. 2 weeks before starting date, the Contracting Party will inform the Tenderer about readiness to start implementation of gasification tests. The Contracting Party assumes to complete the experiments within 2-3 calendar weeks from the start date.
2. The time of binding the offer: 60 days since the settlement of the tender.

V. TERMS AND CONDITIONS OF PARTICIPATION IN THE TENDER

1. The Tenderer should jointly meet the following conditions:

- a) have rights to perform given activities, provided the rules of law force them to possess such rights;
- b) have a necessary knowledge, experience and technical potential;
- c) have staff capable of executing the subject of tender;
- d) are in an economic and financial situation which ensures a proper execution of the subject;
- e) do not have capital or personal connections with the RIC.

By capital or personal connections is meant the interrelationship between the Contracting Party or persons authorized to incur liabilities on behalf of the Contracting Party or persons performing on behalf of the Contracting Party activities related to the selection procedure of the Contractor and the Contractor, consisting of:

- participating in the company as a partner in a civil law partnership or partnership,
 - possessing at least 10% of shares or stocks, unless the lower threshold is due to legal provisions,
 - performing the function of a member of the supervisory or management body, proxy, attorney,
 - remaining in such a legal or actual relationship that can raise justified doubts regarding an impartiality in terms of selecting the Contractor, especially being married, in a relationship of affinity or affinity in a straight line, second degree affinity or second degree affinity in the lateral line or in relation to adoption, care or guardianship.
- f) are not affiliated and are not a subsidiary, co-subsidiary or dominant entity in relation to RIC Pro-Akademia or The Institute for Ecology of Industrial Areas (IETU) within the meaning of the Act of 29 September 1994 on accounting (Journal of Laws of 2016, item 1047);
 - g) are not in relation to RIC Pro-Akademia or The Institute for Ecology of Industrial Areas in such a factual or legal relationship that may raise reasonable doubts as to the impartiality in the choice of the supplier of the good or service, in particular those who are married, the relation of kinship or affinity up to the second degree, adoption ratio, care or guardianship, also through membership in the bodies of RIC Pro-Akademia or The Institute for Ecology of Industrial Areas;
 - h) are not a related party or a partner entity in relation to RIC Pro-Akademia or The Institute for Ecology of Industrial Areas within the meaning of Regulation No. 651/2014;
 - i) are not an entity related personally to RIC Pro-Akademia or The Institute for Ecology of Industrial Areas within the meaning of art. 32 para. 2 of the Act of March 11, 2004 on Value Added Tax (Journal of Laws of 2016, item 710, as amended).

2. Only the Tenderer who jointly meets all the aforementioned conditions will be allowed to participate in the proceedings.
3. Evaluation of meeting the conditions described in sec. 1 lett. a-i will be based on: the Declaration of meeting the criteria provided by the Tenderer, which is the attachment no. 2 to this tender.
4. The offer of the excluded Tenderer shall be rejected.

VI. CRITERIA FOR EVALUATING THE OFFERS

1. Only valid offers will be evaluated
2. The offer will be assessed on the basis of the criterion: "gross price" - 100% weight.
3. The maximum number of points to be obtained in the "gross price" criterion is 100 points
4. The offer will be assessed on the basis of the gross price submitted in the Tender Form – Attachment no.1 based on the following formula:

GP

$P = \text{-----} \times 100 \text{ points}$

EP

where:

P – means the amount of points given to the evaluated offer;

GP – means the gross price of the least expensive offer;

Cb – means the gross price of the evaluated offer.

5. The offer price must be expressed to two decimal places.
6. The price quoted in the offer is a gross price, i.e. includes all costs, components and surcharges of the Tenderer and liabilities, including public law liabilities (e.g. VAT), related to the completion of the entire subject of the order under a given part of the contract. **The price is given in polish zloty (PLN).**
7. The Ordering Party RIC will choose the most advantageous offer. The offer that receives the highest number of points will be considered the most advantageous offer.
8. RIC shall prepare a written record of the proceedings and selection of the best offer.

VII. PREPARING THE OFFER AND INFORMATION CONCERNING THE SELECTION

1. The offer should be prepared in English, in a written form accordingly with the Tender Form which is the attachment no. 1 to the Request for Tender.
2. The offer should contain:
 - a) Tender Form, which is the attachment no. 1 to this Request for Tender, signed by a person authorized to represent the Tenderer
 - b) Declaration of meeting the conditions of the proceedings, which is the attachment no. 2, signed by a person authorized to represent the Tenderer
 - c) power of attorney or other document confirming the right to representation, if the right to represent the person signing the offer does not arise from the document
3. The documents must be signed in the spaces provided for signatures by a person or persons entitled to represent the Tenderer or have the appropriate power of attorney to sign the offer. In this case, the power of attorney should be attached.
4. The offer may be submitted in the following way:
 - a. Originals, sent by traditional mail to the address of the Contracting Party's registered office or delivered in person taking into account the following sections
 - b. by e-mail taking into account the following sections
5. In the case of the offer submitted by e-mail the signed offer should be sent along with signed attachments to iwona.adamikiewicz@proakademia.eu. To maintain the electronic form, the Ordering Party allows the possibility of sending a scan of the signed offer along with a scan of the signed attachments to the offer.
6. For offers sent by post or delivered in person, the delivery date is the confirmed moment of delivery to the office of the Contracting Party. For the offers sent by e-mail the delivery date is the moment of receiving by server of the Contracting Party, so that the Contracting Party could acquaint itself with its content.

7. **The offers must be submitted on 14.05.2021 till 15.30 local time.** Offers submitted after the deadline are not considered
8. The costs of preparing and delivering the offer shall be borne by the Tenderer
9. Offers will be opened **on 14.05.2021, 15.45 local time** at the registered office of RIC
10. During the examination and evaluation of offers, RIC may request from the Tenderers explanations regarding the content of submitted offers.
11. The Tenderers that submitted the offers will be informed about the results of the selection by e-mail, provided in the Tender Form. Information concerning the selection of the most advantageous offer will be announced on the website <http://www.bip.proakademia.eu/zapytania-ofertowe-i-przetargi/> and will be placed in the Contracting Party's headquarters.
12. In the notification sent to the Tenderer whose offer has been considered the most advantageous tender, RIC shall specify the date and place of the contract. The contract will be concluded according to the Model Contract (attachment no 3). The Tenderer accepts the content of the Model Contract for the execution of the subject of the order by a statement contained in the contents of the offer form.
13. If the Tenderer, whose offer has been considered the most advantageous, avoids the conclusion of the contract, the Ordering Party may choose the most advantageous offer from among the remaining offers submitted.
14. RIC informs that the resolution of this proceeding will take place within max. 3 weeks from the day of the deadline for submission of offers. If, as a result of summoning explanations or other circumstances, it will not be possible to settle within this period, the Contracting Party will extend this deadline accordingly and inform Contractors who submitted offers. In any case, the decision will be made within the binding period of the offer, i.e. within 60 days of the deadline for submission of offers.
15. The Contracting Party reserves itself a right to modify the content of the Request for Tender before the deadline for submitting the offers. If the modifications have the influence on the specification of the Tender, the Contracting Party will extend the deadline for submitting the offers. The modifications will be announced by the Contracting Party immediately to all the on its website <http://www.bip.proakademia.eu/zapytania-ofertowe-i-przetargi/> and published in the office.
16. The Contracting Party reserves itself a right to reject all the quotations without selecting anyone among of them, in case when none of the quotations submitted meets the conditions set by the Contracting Party or exceeds the budget of the project.
17. The Contracting Party reserves itself a right to revoke the proceedings without revealing the reasons.
18. An offer will be rejected in these proceedings if:
 - a. is inconsistent with the content of this request for quotation or
 - b. it does not contain the required documents or contains false information or
 - c. in relation to which the Tenderer has not submitted explanations requested by the Contracting Party or
 - d. was submitted after the deadline for submitting offers or
 - e. it contains an abnormally low price.

VIII. ADDITIONA INFORMATION

1. Every Tenderer has a right to ask the Contracting Party for an explanation of the content of this enquiry for quotations **before 12.05.2021**. The questions must be stated in a digital form and sent to an e-mail

- address: lwona.adamkiewicz@proakademia.eu . The Contracting Party will make a reply immediately and send it in a digital form to an e-mail address indicated in the request for explanation. Furthermore, anonymised questions and answers, immediately after giving the answer, will be published at the website <http://www.bip.proakademia.eu/zapytania-ofertowe-i-przetargi> where the Tender has been announced.
2. In cases not regulated by the stipulations of this Request for Tender Polish Civil Code rules apply.
 3. The Contracting Party does not reimburse the preparation costs of offers for this Tender.
 4. The Contracting Party does not return the offers delivered.
 5. By submitting a offer in these proceedings the Tenderer oaths to agree for sharing the entire offer with The National Center for Research and Development, in case if the NCBR or another body it authorized asked for presenting the offer submitted in these proceedings.
 6. The Contracting Party provides for the possibility of awarding supplementary contracts in the scope described in point III.
 7. The contracting Party doesn't allow partial or variant offers

IX. CHANGES OF THE MODEL CONTRACT

The Contracting Party provides for a possibility of changing the content of the Model Contract (attachment no. 3), when the circumstances concluding with the necessity of making such changes, which were unable to predict at the moment of signing the contract, occur.

XI. IN ACCORDANCE WITH ART. 13 OF THE EU-GDPR, WE INFORM HERE ABOUT THE WAY IN WHICH WE COLLECT, PROCESS AND USE PERSONAL DATA. IN PARTICULAR, OUR FOCUS IS ON THE FAIR AND TRANSPARENT USE OF YOUR DATA BY RIC PRO-AKADEMIA

1. Data processor/responsible bodies
 - a. Person responsible

Research and Innovation Centre Pro-Akademia (RIC),
KRS 0000171789, NIP VAT no.: 7281919068, REGON: 471342017,
9/11 Innowacyjna St.
95-050 Konstantynów Łódzki
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Data protection officer:

Monika Stojan

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9/11 Innowacyjna St.

95-050 Konstantynów Łódzki

Poland

Phone: +48 42 636 12 26

E-Mail: monika.stojan@proakademia.eu

- b. Type of data

First name, surname

Postal address

E-mail address

Telephone number

2. Source of data

Documents required in the process of implementing the Request for tender

3. Purpose of data processing

Any data gathered is solely intended for the purposes of implementing the Request for tender in the scope of MISCOMAR+ project.

4. Storage duration

During the complete duration of the MISCOMAR+ project.

5. Data transfer

Recipients of the data

Personal data will not be passed on to third parties without permission, the exception are entities to whom the documentation of proceedings will be made available on the basis of the Project Agreement.

RIC Pro-Akademia will manage a dedicated contact and will ensure that personal contact details are not used elsewhere without specific agreement.

6. Rights of persons affected

a. Rights of access, rectification, deletion and objection

As provided in Article 14-17 of the EU-GDPR we inform about the rights of access, rectification, deletion and limitation of processing data. The right to request from the controller access to and rectification or erasure of personal data or restriction of processing concerning the data subject or to object to processing as well as the right to data portability.

b. Right of withdrawal

The right to withdraw consent at any time, without affecting the lawfulness of processing based on consent before the withdrawal.

c. Right of appeal

Lodge a complaint with a competent supervisory authority is always possible.

This Request for Tender have been publicized at the website <http://www.bip.proakademia.eu/zapytania-ofertowe-i-przetargi/> and at the Contracting Party's headquarters on 28.04.2021

Attachments to the enquiry for quotations:

Attachment no. 1 – Tender Form

Attachment no. 2 – Declaration of meeting the criteria

Attachment no. 3 – Model Contract