**BIOREFINERY TECHNOLOGIES: EVALUATION, DEMONSTRATION, AND IMPLEMENTATION PROGRAMME**

**(A partnership between the Department of Science and Innovation (DSI) and the Council for Scientific and Industrial Research (CSIR))**

**ACCELERATED IMPLEMENTATION OF BIOREFINERY TECHNOLOGIES: OPEN CALL**

**Evaluation and Implementation of Biorefinery and Organic Waste Beneficiation Technologies and Solutions**

The **Programme** invites Expressions of Interest (EOI) from SMMEs, black industrialists, municipalities, HEIs and RTOs in response to this **Call focusing on technologies/solutions that will lead to accelerated implementation of biorefinery technologies.**

The Department of Science and Innovation (DSI), in collaboration with the Biorefinery Industry Development Facility (BIDF) at the CSIR, has established a programme to demonstrate waste beneficiation biorefinery technologies to bridge the gap between pre-commercialisation instruments for technology development and full entry into commercial scale. In addition, the intention is to provide sound technical advice from a trusted independent source (i.e., the CSIR) on available alternative waste biomass technologies. Through the specialised CSIR expertise and infrastructure available at the BIDF, the project aims to reduce the barriers for developing, testing and adapting biorefinery technologies applied to South African biomass sources. This avoids the need for new and existing players to individually invest in R&D infrastructure and specialised R&D staff to demonstrate new technologies for implementation in South Africa.

The objective of the project is to:

• Implement technologies to maximise use of valuable natural resources by minimising generation of waste;

• Implement technologies for beneficiation of waste biomass to avoid landfilling the waste via production of high value materials and products from the waste;

• Demonstrate the validity of technologies and their potential to increase revenues in the sector;

• Enable demonstrable technology transfer to SMMEs/municipalities/large industry to build sustainable businesses;

• Increase industry competitiveness through local technology development and localisation of technology.

**The call seeks to identify high impact technologies and practices in the following categories:**

**A. Beneficiation of waste organic biomass to avoid landfilling of the waste**

**B. Beneficiation of waste organic biomass to enable maximum utilisation of biomass resources**

**C. Implementation of technologies for development of new value chains from organic waste**

**D. Development of new value chains from clearing of alien invasive species**

**E. Implementation of technologies for development of new value chains from biomass resources**

**Examples of waste organic biomass include lignocellulosic biomass (woody and non-woody materials), agro-processing wastes.**

Submissions should provide sustainable biorefinery and organic waste beneficiation solutions to urban, peri-urban and/or rural areas and take into account operational effectiveness, social preferences, biomass resource availability, affordability, economies of scale, and cost reductions. Projects that require localisation of technologies developed or used outside of South Africa are also eligible for consideration.

The BIDF offers:

* Technology support in:
	+ Chemical fractionation of biomass
	+ Beneficiation of waste organic biomass
	+ Development of new value chains from biomass
	+ Biofractionation and bioprocessing of biomass
* Advisory support on:
	+ Biorefinery technologies
		- beneficiation of waste biomass
		- development of new value chains from biomass
		- analysis and characterisation of biomass and products

The expertise at the BIDF excludes the processing of sewage sludge.

**REQUIREMENTS**

Respondents should provide the following:

1. The application document must be completed electronically and is supplied in Word format to allow for this.
2. A clear definition of the goal of the project, together with the scope of the project and time frame.
3. A clear understanding of the market of the intended technology: e.g., how big is the market segment that can feasibly be accessed? Provide proof of ability to access said market in the form of off take agreements or letters of interest from clients
4. A description of the technology accompanied by a photo or evidence of a product prototype, e.g., key features, impact, competitive advantage, etc. Technologies considered under this programme must already be at prototype stage, evidence of which must be provided.
5. For in-licensed technology proof of the granted license is required.
6. The type of biomass/feedstock that will be used should be specified; proof of access to the biomass should be provided.
7. A clear indication of the (intended) socio-economic impact resulting from implementation of the solution.
8. The application document must be completed in its entirety and reference cannot just be made to attached business plans without providing complete information in the application document itself. Business plans may be attached as supporting information only.
9. If co-funding for the project is being requested, it needs to be captured under section 11, clearly highlighting the amount requested and the intended purpose thereof.

*Selection of projects will be based on criteria that include high impact in terms of improved competitiveness, SMME development, and socio-economic impact. Additionally, projects that include women and young people as beneficiaries will be prioritised.*

**FUNDING**

Funds will **NOT** be available for:

* Enterprise start-up costs
* Enterprise operational costs
* Equipment without a component of product and process development to be done by the BIDF

The equipment and expertise available at the BIDF and other CSIR facilities will be used to develop, validate, or evaluate proposed technologies. **Where applicable, the CSIR will purchase equipment for evaluation either at the BIDF or at the intended location of the proposed technology.**

The thresholds or limits, in Rand value, for what may be supported/covered will depend on the need of the project and the funds available in the programme.

**For more information on this call please contact:**

**Email Subject Title**: Accelerated Implementation of Biorefinery Technologies Proposal

**Email Submissions**: vchunilall@csir.co.za

**Queries**: Dr Viren Chunilall **Phone**: 031 242 2315

**SUBMISSION REQUIREMENTS**

To apply, please complete the attached EoI form and e-mail the PDF versions of completed form, CV’s, BBEEE certificate /affidavit and proof of CIPC registration to vchunilall@csir.co.za. Application inclusive of attached documents must be no longer than 20 pages. Please complete the Checklist at the end of the application form.

Please use the following naming convention for attached documents:

|  |  |
| --- | --- |
| **Application:** | **CV’s, Certificates etc**: |
| Name of Enterprise\_EOI- Feb 2021 | Name of Enterprise\_CV Jane Smith\_Feb 2021, Name of Enterprise CIPC proof of registration Feb 2021 |

The ability to co-fund this application and commitment to transformation will be an advantage.

**Exclusionary Criteria:**

* EOI’s will only be accepted if feedstocks are of the following types:
	+ Alien invasive species
	+ Agricultural waste, excluding abattoir waste
	+ Forestry/paper mill waste
	+ Diversion of organic wastes from landfills, excluding abattoir waste
	+ Organic waste, excluding abattoir waste
	+ Food waste
* EOIs will **NOT** be considered if they relate to new medicines, treatments or cures for diseases, or do not involve manufacturing, or do not improve competitiveness and revenue within the short term (within 6-24 months of acceptance of the proposal by the CSIR-BIDF).
* Applicants’ enterprise must be registered with the CIPC and proof of registration and tax clearance certificates must be provided with the application or will be excluded from the process.
* Applications that are not accompanied by a BBBEE certificate or affidavit will be excluded.
* Applications that are not accompanied by CV’s will be excluded.
* Applications that are not accompanied by the completed document checklist will be excluded.
* Applications sent to any e-mail address other than vchunilall@csir.co.za will be excluded.
* Closing date for applications: **Close of Business (16h30), Thursday 9 June 2022**, no late submissions will be considered.
* **If no confirmation of receipt of EOI is received within 72 hrs the application has not been received and will not be eligible**

**REPORTING REQUIREMENTS**

Successful applicants will be expected to report on technologies implemented at the end of the project. Other reporting requirements will be established during contracting.

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**Expression of Interest proposal**

***Successful bidders may be invited for a more detailed interview***

**Closing date for applications: Friday 9 June 2022**

**Please e-mail PDF versions of completed submission forms to:** vchunilall@csir.co.za

**If no confirmation of receipt of EOI is received within 72 hrs the application has not been received and will not be eligible**

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| **Enterprise name:** |  |
| **CIPC registration number:** |  |
| **Contact person(s):** | **Name and surname:****Position in enterprise:** |
| **Contact details** | **E-mail:****Landline:****Cell number:****Physical address of enterprise:****Postal address of enterprise:** |
| **Ownership arrangement** |  | Demographic | Gender |
| Black | White | M | F |
| **Directors/members** |  |
| **Years in business** |  |
| **Annual Revenue**  |  |
| **Number of current employees** | Permanent:  |  | Temporary: |  |
| **Applicable biomass or organic waste processing sector:**(E.g., forestry, poultry, agro-processing, organic wastes, etc.) |  |
| **BBEEE status level**  |  | Attach BBEEE certificate/ or affidavit |
| **Date of application:** |  |
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| **1. Choose the description that best defines your current need (mark with an x)** |
| 1. Running an existing sustainable/profitable biomass processing business with a requirement to: localise technology, evaluate/confirm yields, verify/validate or trouble-shoot the technology you are currently using (no additional equipment required)
 |  |
| 1. Need to scale-up your existing operation (equipment required)
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| 1. Planning to start up a new line of waste beneficiation business and require assistance to evaluate and possibly localise new technology and associated equipment (equipment required)
 |  |
| **2. What support do you require from the BIDF?** |  |
| Please list the support required from the BIDF: |  |
| **3. Do you have:** | **Y/N** |
| * 1. **A secured source of waste or biomass?**
 |  |
| Please specify: Type: Source: Available amount of Waste: Nature of Agreements in Place with supplier of Waste or Biomass (Please attach)  |
| * 1. **An uptake agreement for your end product with an existing client?**
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| Please describe the agreement that is in place and if possible attach proof of such to this application: |
| * 1. **An approved Environmental Impact Assessment (EIA) for your site (where applicable)?**
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| If this is a requirement for the project please advise whether approved EIA is in place and provide proof thereof: |
| * 1. **A secured supply of water to efficiently process the required volume of waste?**
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| Please supply information on the source and what access you have to it: |
| * 1. **A technology to be licensed in?**
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| 3.5.1 Is the technology Foreign? |  |
| 3.5.2 What is the nature of your access to the technology or intellectual property (license, ownership of the intellectual property etc.) If in process advise on status: |
| * 1. **An awareness of the regulatory requirements for the processing of waste**
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| What are these regulations and are you currently compliant with these regulations? |
| **4. Description of your core business and whether you are currently manufacturing and/or selling products as well as your current turnover** |
| Core Business:Current status of manufacture and scale at which manufacturing:Current annual turnover:  |
| **5. Description of the market need addressed by your product/processes and the potential market size (try and be as specific as possible).** |
| Market need: Your potential market size and segment targeted:How will you access the market: |
| **6. Description of the product(s) you wish to manufacture and what differentiates them from competitor products.** |
| Product description:Competitor product:What is your product differentiation based on? |
| **7. Description of the technology you plan to use to manufacture the product within the biorefinery context:** |
| Describe the technology and how will the principle of the biorefinery concept be upheld: |
| **8. What is the expected development time to market (inclusive of this intervention)?** |
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| **9. Please indicate the potential social and economic impact of the proposed technology/business, planned revenue over 5 years.** |
| Social impact:Economic Impact:Planned revenue over 5 years: |
| **10. Please list all sources and value of funding/support received to date in the table below.** (Take note that a government representative panel will be reviewing the table below. Please be as accurate as possible) |
| **Source** (E.g., TIA, IDC, Government, venture capital, incubator support etc.) | **Programme** | **Define the nature of the support received** (funding to do product development and/or commercialisation/training/mentorship etc.) | **Value of support (R)** | **Period of support** |
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| **11. What is the company’s ability to co-fund the requested support?**  |
| Ability to co-fund:Source of funding (if in application stage please describe current status of application):How were the funds secured/being secured? |
| **12. Has the company considered funding for commercialisation (i.e. Taking the product or offering to market)? Yes/No** |
| If Yes, What is amount required for commercialisation? What are the sources of this funding? |
| **13. Are you currently incubated/supported by any other incubator, enterprise supply chain development programme etc.? Please specify the entity and the type of support being received.** |
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| **14. Team composition (both business/technical management; if not identified, proposed):***List your team: What is the team’s background, expertise & experience (business & technical)* |
| **Name** | **Highest academic qualification** | **Position in proposed entity** | **Previous business management/technical positions/experience** | **Previous experience in proposed biomass or organic waste processing business area** |
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| **15. Please attach short resumes/CV’s (1/2 page each) of key personnel in your enterprise** |
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| **16. MANDATORY DOCUMENT CHECKLIST** | **Mark with x** |
| CIPC registration document |  |
| BBBEE certificate or affidavit |  |
| CV’s of key team members |  |
| Proof of prototype |  |
| Proof of product offtake agreement |  |
| Proof of ownership of intellectual property / licence agreement |  |
| Proof of biomass availability/access to biomass |  |
| Approved environmental impact assessment |  |