



सत्यमेव जयते
Department of Biotechnology

Department of Biotechnology
Ministry of Science and Technology
Government of India

Implementation Plan for Biomanufacturing and Biofoundry component of the BioRIDE
scheme of Department of Biotechnology for
'Fostering High-Performance Biomanufacturing'

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Implementation Plan for setting up of “मूलांकुर” BioEnabler Hubs: Biofoundry and Biomanufacturing Hubs in PPP mode under the BioE3 Policy for “Fostering High-Performance Biomanufacturing”

The Department of Biotechnology (DBT), Government of India, has developed an Implementation Plan under the **Bio-RIDE** scheme for *Fostering High-Performance Biomanufacturing*. This strategic roadmap outlines six key sectors that will drive India’s biomanufacturing revolution:

1. Bio-based chemicals and enzymes
2. Functional food and smart proteins
3. Precision biotherapeutics
4. Climate-resilient agriculture
5. Biofuels and Carbon capture
6. Futuristic marine and space research

At the heart of this initiative are the **DBT-BIRAC ‘मूलांकुर’ BioEnablers**, a network of cutting-edge *Bio-Artificial Intelligence Hubs, Biofoundries, and Biomanufacturing Hubs*.

2. Implementation:

The implementation of the **Biomanufacturing** and **Biofoundries** initiatives will be led by the Department of Biotechnology (DBT), which will provide support to academia, while the **Biotechnology Industry Research Assistance Council (BIRAC)** will cater to Start-ups, SMEs, and industries. This collaboration aims to accelerate innovative research, pilot-scale production, and pre-commercial manufacturing of commercially viable bio-based products. Other relevant organizations may also be included in the future to enhance the speed, efficiency, and breadth of implementation, as well as to provide necessary business support services.

Setting up of “मूलांकुर” BioEnabler Hubs

This initiative focuses on setting up of Biofoundries and Biomanufacturing Hubs that will facilitate research, innovation, and scale-up in six thematic sectors under the biomanufacturing initiative.

- **Biofoundries.** The Biofoundries will be designed within the identified thematic sectors to foster innovation while incorporating integrated facilities for early scaling-up of proof-of-concept developments established by academia (both in-

house and external), start-ups, SMEs, and industries. While the platform is focused on supporting breakthrough innovations, preference will be given to proposals that demonstrate proven expertise, prior knowledge, and access to pre-existing infrastructure. Additionally, a comprehensive list of projects and programs that require scale-up should be provided. This approach ensures that innovative ideas are grounded in a strong foundation, facilitating a smoother, more efficient transition from concept to scalable, real-world applications.

- ***Biomanufacturing Hubs.*** The establishment of Biomanufacturing Hubs will focus on creating shared pilot-scale and pre-commercial-scale facilities designed to bridge the gap between laboratory research and full-scale manufacturing. These Hubs will serve as critical infrastructure for startups, academic institutions, and small and medium enterprises (SMEs), allowing them to access the necessary resources to scale up their innovations without the high upfront costs typically associated with building independent facilities. To ensure the Hub's sustainability and impact, the anchor stakeholder applicant—which could be an academic institution, industry leader, or public-private partnership—must demonstrate an internal pipeline of commercially viable projects that are in the pilot or pre-product development stage.
- These projects should have clear potential to transition to full-scale production, ensuring the Hub can deliver on its mission to accelerate the commercialization of biomanufactured goods. Preference will be given to stakeholders that can demonstrate proven expertise, operational experience, and access to pre-existing infrastructure. This ensures that the Hubs are built on a strong foundation and can quickly deliver impactful results. Moreover, institutions that already have pre-commercial-scale equipment and experience in managing such facilities will be better equipped to lead these initiatives and provide immediate support to smaller stakeholders. By providing shared equipment and expertise, these Hubs will support multiple stakeholders in testing their products in a real-world manufacturing environment.
- Proposals that have already secured the necessary regulatory clearances or are close to obtaining them will be prioritized. By prioritizing projects that are well-prepared for regulatory scrutiny, the Hubs will ensure that the scale-up process is not delayed by compliance issues, allowing for faster commercialization.

Sustainability: Biomanufacturing Hub should have a clearly defined sustainability business plan using appropriate business models after the Government support is over.

3.Funding Mechanisms:

This 'Component' will be implemented by the DBT to support academia, and Biotechnology Industry Research Assistance Council (BIRAC), and other similar organizations as needed for providing business support services to support Start-ups, SMEs and industries to accelerate innovative research, pilot and pre-commercial scale manufacturing of commercially viable bio-based products.

3.1 Funding mechanisms for setting up of BioEnablers will be as follows:

S.No.	Category	Funding Mechanism
Funding Mechanisms for Setting up of 'मूलांकुर' BioEnabler Hubs		
A. Setting up of 'मूलांकुर' Biofoundry		
<ul style="list-style-type: none"> Biofoundry can be set up with the budgetary support up to ₹65 Crore following the funding mechanism of Bioenablers (provided below). Biofoundry for academia will be set up with the budgetary support as per DBTs norms. Private Universities/ NGOs/ Trusts/ foundations etc. are encouraged to share 25% of capital investment cost <i>(Funding to profit-making private organisations will include co-funding of minimum of 30% of capital investment cost)</i> Each Coordinating Hub may propose an annual budget of up to 50 lakhs to cover operational costs of several (>7) collaborating projects of all external users. 		
B. Setting up of 'मूलांकुर' Biomanufacturing Hubs		
<ul style="list-style-type: none"> Biomanufacturing Hub can be set up with the budgetary support up to ₹75 Crore following the funding mechanism of Bioenablers (provided below) 		
Funding Mechanism for the Bioenablers under A & B (mentioned above) will be as follows:		
1.	Funding to Academia	<ul style="list-style-type: none"> Funding will be through <i>Grant-in-aid</i> to Mission Mode projects as per DBT's norms. Private Universities/ NGOs/ Trusts/ foundations etc. will be encouraged to share 25% of capital investment cost <i>(Funding to profit-making private organisations will include co-funding of minimum of 30% of capital investment cost)</i>
2.	Funding to Startups,	Through 'Co-funding, equity financing, royalty

	<p>SMEs, and industry (beyond ₹50 lakh)</p>	<p>sharing' either or in combination in the following manner:</p> <ul style="list-style-type: none"> • Funding through '<i>Co-funding</i>' would involve the cost sharing of a minimum of 30% by the grantee organisation in cash. Following feasibility assessment, due weightage will be given to company that will bring best value to the Government in terms of maximum percentage of cash contribution and having an upscaled technology. • Funding through '<i>Equity financing</i>' would involve taking equity stake through Convertible notes that gets compulsory converted at valuation of the first investment round raised by the grantee of ₹10 Crore or more within 5 years period; or mandatorily at the end of 5th year at a 20% discount of the latest valuation. Equity share will be based on the quantum of funding, given to the project. • Funding through '<i>Royalty Sharing</i>' would involve payment of royalty on Net sales of the product developed. Payment of 5% royalty of the Net sales (defined as ex-factory price of the product minus any sales commissions or discounts and does not include freight or insurance costs) till the grant-in-aid amount is paid off to BIRAC. The liability to pay royalty will terminate upon the first of any of the following two events to occur: <ul style="list-style-type: none"> a) 5% royalty paid to BIRAC till the royalty amount paid becomes equal to the amount of the Grant-In-Aid disbursed and that was not returned to BIRAC as unutilized funds or b) in case of foreclosure or termination of project as per terms of GLA, c) Event such as technology or product out licensing/company merger or acquisition, a one-time payment, from the transaction deal, of up to amount equivalent to the funds received by applicant.
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3.2 Funding to Section-8 Company created by Central Government institutions as legal entities including Biotechnology Research Innovation Council (BRIC) institutes-an Organisation of DBT (who are contributing towards land and/or building), 100% support may be considered. The condition of paying 5% royalty as described above shall be applicable.

3.3 Funding to not-for-profit organisations (Section-8 Company, Societies, etc.) created by State Government institutions (who are contributing towards land and building), funding from DBT will not exceed financial participation by the State Government concerned. The condition of paying royalty will be the same as indicated above.

3.4 The condition of grantees being debarred from receiving any grants in future from the DBT in case of failure to adhere to the terms and conditions of the grant agreement shall be incorporated in the grant agreement and this shall be mentioned in the call for proposals guidelines.

4. Quantum and Nature of Financial Assistance for Biomanufacturing Hubs:

- a. Number of Biomanufacturing Hubs may vary depending upon the nature of facilities required for Pilot and Pre-commercial scale biomanufacturing.
- b. Quantum and nature of financial assistance would depend on the type of bio-based products (microbial/mammalian), size and scale, geographical location, equipment size, infrastructure and compliance level requirements of pilot versus pre-product scale, regulatory protocols (GMP/non-GMP) and other factors. However, ceiling of funding will not exceed the limits as prescribed under 3.1.