

D.E.S.I.G.N. for BioE3 Challenge:

Empowering Youth to Solve Critical Issues of their TIMES

Request for Proposals (RFP):

Category 2 - Open to All Indian Citizens (Applications are accepted through BRIC-ILS Portal only. Link:

<https://www.ils.res.in/bioe3challenge/>

1. Introduction

D.E.S.I.G.N. for BioE3 Challenge

The D.E.S.I.G.N. for BioE3 Challenge is an initiative under the BioE3 (**B**io**t**echnology for **E**conomy, **E**nvironment and **E**mployment) policy framework, aimed at inspiring innovative, sustainable, and scalable biotechnological solutions driven by young students and researchers of the country with an overarching theme of “Empowering Youth to Solve Critical Issues of their TIMES”.

About BioE3 Policy: Biot**echnology for Economy, Environment & Employment**

On 24th August, 2024, the Union Cabinet under the leadership of PM Shri Narendra Modi approved BioE3 (Biot**i**otechnology for **E**conomy, **E**nvironment and **E**mployment) policy, a framework that creates a convergence between biotech, engineering and digitalization for building a more equitable and sustainable future through Biomanufacturing. BioE3 policy envisages green, clean, prosperous and Atmanirbhar Bharat and putting the country well ahead of its net zero carbon emission target Viksit Bharat @2047.

➤ Framework

- **Vision:** Position Bharat as a global leader in sustainable biomanufacturing towards Viksit Bharat @ 2047
 - **Shape the Future:** Chance to contribute ideas that can genuinely influence national priorities with Safe-by-default biological innovations

- 🌟 **Youth Driven Change:** A platform for young minds to showcase their creativity and innovation
- 🌟 **Visibility and Recognition:** Opportunity to stand out in the scientific and innovation ecosystem
- 🌟 **Skill Development:** Sharpens problem-solving, teamwork, and design thinking skills for future leadership
- 🌟 **Networking Opportunities:** Interact with scientists, innovators, mentors, and policymakers opening doors for future careers
- 🌟 **Impactful Ideas to Action:** D.E.S.I.G.N. for BioE3 is a pathway from ideation to implementation
- 🌟 **National Service:** Contributing to India's self-reliance and sustainable growth

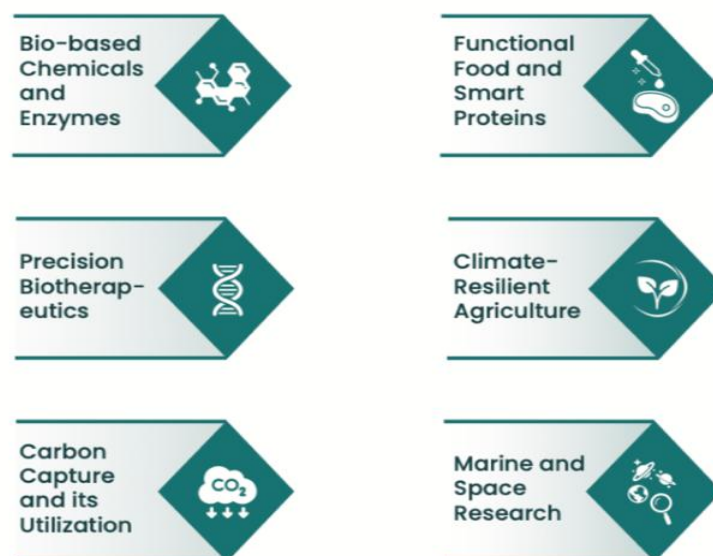
- **Goal:** Unite fragmented efforts to fast-track innovation-to-technology.
- **Objective:** Enable adoption of advanced technologies for efficient, sustainable, and scalable bio-based products.

➤ Key Focus

- Research & innovation for climate change and decarbonization
- Stronger domestic scaling up, pilot and pre-commercial biomanufacturing capacity
- High-performance processes leveraging living systems
- Promotion of bio-based products in food, health, agribiology, marine & space

➤ Impact

- BioE3 sets an ambitious roadmap for **technological leadership**, reduced carbon footprint, and accelerated growth across **six thematic sectors** of biomanufacturing:



For more details on BioE3, please visit:

bmi.dbtindia.gov.in/biomanufacturing-initiative.php -

Brochure on BioE3 Policy:

dbtindia.gov.in/sites/default/files/BioE3%20Policy%20Brochure.pdf

Explainer Video on BioE3:

<https://youtu.be/LgiCzsKLVPA?si=mbkeL6zGji9Ljhg9>

D.E.S.I.G.N. for BioE3: “Empowering Youth to Solve Critical Issues of their TIMES”

The category 2 of the D.E.S.I.G.N. for BioE3 has two rounds. In the **first-round** applications under are invited from all Indian Citizens to conceptualize innovative designs and solutions using microbes, molecules, or a system with a specific purpose to address real-world challenges. Participants are expected to display their basic understanding of the BioE3 Policy and its possible implementation through imaginative, creative and concise ideas towards a sustainable, clean, and self-reliant future for our Country. Examples of broad challenges for concept proposal submission by the participants are provided under Section 2 of this document. Screening and due diligence of the proposals would be carried out w.r.t. the feasibility, technical soundness and connect to BioE3 Policy.

Applications are to be submitted online by registering in the BRIC-ILS portal (Link: <https://www.ils.res.in/bioe3challenge/>). Affiliation to an institution is not necessary during the round 1 of the challenge.

In the **round 2** of the challenge, an applicant who clears the 1st round may preferentially choose either iBRIC+ Institutions or Bionest incubators for getting the necessary affiliation to submit a detailed proposal to Biotechnology Industry Research Assistance Council (BIRAC) in the format as provided by BIRAC. However, the winners can also choose any DSIR-recognized institution for affiliation as long as it will provide space and facilities as needed. DSIR recognized start-ups do not need any further affiliation. On the other hand, startups without a DSIR certificate should get affiliated to a Bioincubator. *(details are presented in the next page)*

- **D- Define real needs:** or the unmet needs in the economy, environment or employment
- **E- Evidence first:** User research + literature + ground realities (farmers, MSMEs, public health)
- **S- Sustainability by design:** Life Cycle Assessment (LCA), zero-waste principles, green chemistry, renewable energy use
- **Integration:** Bio X Digital X Engineering X Policy X Finance
- **G- Go-to-Market:** Government procurement, farmer cooperatives, public health adoption
- **N - Net-positive impact:** Employment indices, women & youth participation, equitable access

➤ ***The Challenge: To Propel BioE3 for safe-by-default biological innovations across the sectors and sub-sectors of national priority.***

➤ **Aims and Objectives**

- Creatively design a new microbe, any biological molecule, or a system with a specific purpose for “**Empowering Youth to Solve Critical Issues of their TIMES**”
- Address real-world challenges in health, agriculture, environment, or industry
- Influence national priorities with safe-by-default biological innovations

➤ **Expected Outcome of BioE3 Challenge**

The D.E.S.I.G.N for the BioE3 challenge will empower young as well as grass root innovators to solve critical issues of their TIMES paving a path from ideation to implementation towards development of scalable solutions for India’s sustainable, equitable, and self-reliant growth towards Viksit Bharat @2047.

Key Highlights:

- **INR 1 lakh each for the top 120 participants as recognition of their innovative ideas under Round 1 (10 winning ideas per month for 12 months).**
- **Up to 100 grants with upper limit of INR 25 lakh each to help winners convert their Design ideas to real-world solutions through Round 2 .**

❖ **For First Round:**

- **Top 10 winning solutions will receive Rs 1.00 Lakh each.**
- For Team participation, the prize money will be divided equally among the Team members.
- These Top 10 winning solutions/Teams will further get an opportunity for the implementation of their concept proposals to convert Design idea to Proof of concept.

❖ **For Second Round:**

- **Winners of Round 1 will have an opportunity to be considered for a follow-on grant of INR 25 lakhs (disbursed in two tranches of INR 15 lakhs and INR 10 lakhs each based on successful milestone completion) to convert ‘Design Idea’ to ‘Proof of Concept’.**

For further implementation –

- Winning participants would have a window of 3 months to submit a detailed proposal online to Biotechnology Industry Research Assistance Council (BIRAC) in the format as provided by BIRAC.
- The Execution of the round 2 proposal can be done at the applicants' current institution or at their nearby iBRIC+ Institution(s) (www.bric.nic.in). or any other institution with DSIR recognition.
- Facilities & infrastructure available at 15 iBRIC+ institutions across India can be accessed to develop the project for the next two years.
- Network of 95 Bio-NEST incubators and EYUVA Centres of DBT-BIRAC shall also be made available for the implementation of the winning proposals.

The quantum of funding support per project under Round 2 will be decided solely by DBT and BIRAC.

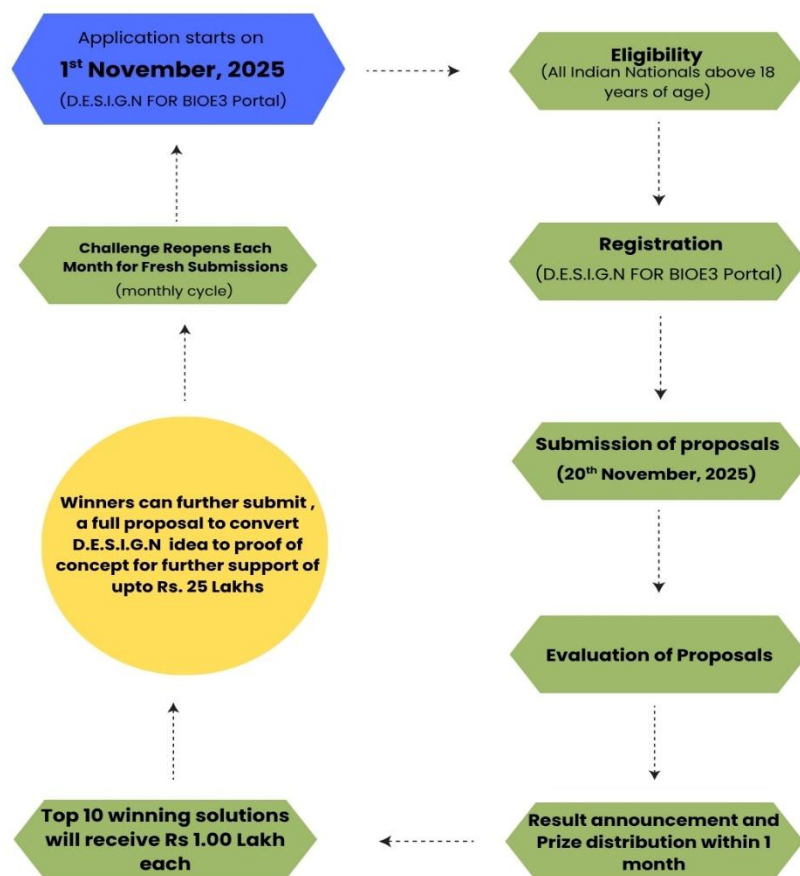
Detailed registration instructions and information on rewards are provided in this document.

Application timelines:

The application window will remain open for 20 days of every month for next 12 months.

First round of applications would begin from 1st November, 2025 till 20th November, 2025 (midnight).

The Contest to continue for 1 year, i.e. upto October 2026.



2. Innovative idea questions to spark creativity: Category 2 Projects

Participants are encouraged to address, **but not limited to**, the following challenges:

Problem-Solving Questions

- What's the biggest challenge in biomanufacturing industry or energy sector, and how can we solve it?
- How might we reduce waste/inefficiency/negative impact in food industry and agriculture system?
- What's the most significant pain point for chemical industry transition, and how can we address it?

Future-Thinking Questions

- What will microbial/cellular industry look like in 10 years, and how can we prepare for it?
- What new markets or opportunities will arise from megatrend or shift to bioeconomy as the key driver of nation-building?
- How would digital health systems help in personalized nutrition and BioMedTech?

Creative Combination Questions:

- How might we combine AI with bio-innovations to create something new?
- What if we applied principles and concepts from natural ecosystems to chart new innovations in carbon capture technologies?
- How might we use existing knowledge in a completely new context of personalized health?

Experimental Questions:

- What if we removed constraint or limitation and redesigned towns & villages based on circular economy models?
- How might we use “space” as biotech laboratory to create innovative solutions?
- What would happen if we flipped assumption & paradigm on its head? For example from ‘High-end biotech products trickle down from labs to markets to public’ to ‘*if innovation is designed for the last mile first*—low-cost, accessible biotech that scales up only later’?

Note: PhD Scholars, researchers, scientists, Founders/Co-Founders/Individual Employees of Startups, SMEs are encouraged to focus on advanced, translational, and entrepreneurial innovations.

Participants can also tap into genomic data from DBT-BRIC’s *One Day One Genome (ODOG)* initiative, using India’s rich repository of decoded microbial genomes to design innovative solutions (**For details:** <https://www.nibmg.ac.in/p/one-day-one-genome>).

3. Eligibility Requirement

- An Indian national can submit an application for D.E.S.I.G.N for BioE3 Challenge and **Aadhar Number** will be required for participation.

- **Additional requirement to participate in round 2 of this challenge:** Affiliation to an institutional support structure, which can be autonomous institutions, bio-incubator, Founders/Co-Founders/Individual Employees of startups with DSIR certificate to provide financial and administrative oversight, is a must requirement to participate in round 2 of this challenge.
- Both individual and team applications are permitted (teams must declare all members). In the case of joint participation, a dedicated team leader should be designated.

4. Guidance on Participation & Submission of Applications

- Participating individual/entity needs to register at [BRIC-ILS D.E.S.I.G.N Portal](https://www.ils.res.in/bioe3challenge/) to submit an application and concept proposals of 1500 words must be submitted exclusively through the portal. (Link: <https://www.ils.res.in/bioe3challenge/>). Aadhar Number will be required for participation.
- A unique Registration Number will be generated after successful submission of details.
- Individual and team applications (up to 5 team members) are permitted (teams must declare names of all members). Team leader needs to be identified with respect to participation as teams.
- Team leader's role in adding members: After entering their own details (mandatory), the team leader must add details of all team members before submission. Other than the team leader, there will be an option to add team members max up to 4 more members.
- The team leader must ensure that the details of all members are filled in accurately in the registration form.
- Once the participation form is submitted with all required details of all team members, it will be locked, and no edits or changes to team composition will be allowed thereafter
- Save draft before final submission, and make sure to read terms and conditions before final submission.
- Submissions must adhere to plagiarism policies; non-original or copied content will lead to disqualification. Applications with junk data will be outrightly rejected.
- Participation in subsequent months: An applicant can submit only one proposal in a particular month, further an applicant can resubmit the same proposal with revisions or submit a different proposal in the subsequent months. On the other hand, winners of the 1st round of the Category II of the challenge should not submit a fresh proposal until a decision is made on their

proposal/application for round 2. Those applicants whose proposals have been selected for funding in round 2, should not submit another proposal under this Challenge

➤ Application Requirements

Concept Proposal (1000 words): Application format is placed below:

1. CONCEPT SUMMARY*

Provide a concise overview of your idea, its purpose, and the challenge it addresses.

(MAX 250 WORDS)

2. DESIGN LOGIC & RATIONALE*

Explain the underlying biological mechanism or engineering principle. Describe how your design achieves its intended function.

(MAX 300 WORDS)

3. POTENTIAL USE & BIOE3 LINKAGE*

Describe the intended use or area of impact. Briefly explain how your design aligns with the **BioE3 principles** — contributing to sustainability, economic opportunity, and technological advancement.

(MAX 200 WORDS)

4. FEASIBILITY & SAFETY CONSIDERATIONS*

Discuss how your idea could be implemented, including practical feasibility, risks, and biosafety or ethical considerations.

(MAX 250 WORDS)

5. SUSTAINABILITY, IMPACT & VISION*

Outline the broader societal, environmental, and economic impact. Describe your long-term vision — how this idea could scale or inspire future innovations.

(MAX 300 WORDS)

6. NOVELTY & INNOVATION POTENTIAL*

Highlight what makes your design unique or transformative. How does it differ from existing solutions or known biological systems?

(MAX 200 WORDS)

7. VISUAL REPRESENTATION (OPTIONAL)

Attach a **simple schematic, diagram, or conceptual illustration** to visually explain your design.
(ONE IMAGE OR DIAGRAM — OPTIONAL BUT ENCOURAGED)

Complete Proposal PDF *

Upload your complete project proposal document (PDF only - Max 10MB)

Undertaking on No Plagiarism: I/We hereby undertake that the submitted proposal and all associated materials are entirely original work. I/We declare that no part of this submission has been copied, plagiarized, or adapted from any existing work without proper citation. I/We understand that any form of plagiarism, including self-plagiarism, will result in immediate disqualification and may lead to further academic/professional consequences.

Originality Declaration: I declare that the proposed work represents original research/innovation and has not been submitted to any other competition, journal, or conference simultaneously. All sources of information and assistance have been properly acknowledged.

I agree to the terms and conditions of the D.E.S.I.G.N. for BioE3 Challenge, including the evaluation process, intellectual property guidelines, and publication of selected abstracts.

5. Timelines

- Launch Timeline: November 1st, 2025
- Submission Window: Till November 20th, 2025 (midnight)
- Results Announcement & Prize Distribution: In the next 1 month

➤ ***The cycle will be repeated every month and the Contest to continue for 1 year***

6. Why to Participate

- **Shape the Future** – Chance to contribute ideas that can genuinely influence national priorities with Safe-by-default biological innovations.
- **Youth-Driven Change** – A platform for young minds to showcase their creativity and innovation.

- **Visibility & Recognition** – Opportunity to stand out in the scientific and innovation ecosystem.
- **Skill Development** – Sharpens problem-solving, teamwork, and design thinking skills for future leadership.
- **Networking Opportunities** – Interact with scientists, innovators, mentors, and policymakers opening doors for future careers.
- **Impactful Ideas to Action** – D.E.S.I.G.N. for BioE3 is a pathway from ideation to implementation.
- **National Service** – Contributing to India's self-reliance and sustainable growth.

7. Reward, Recognition and Support Offered

- **Appreciation grant:** Top 10 winning solutions will be selected every month and provided with an appreciation grant of INR 1 Lakh each along with mentorship by DBT-BIRAC and an opportunity for implementation of the proposed idea.
- **Funding grant for Research, Development & Innovation (RDI):** Winners will be encouraged to submit full proposal in 3 months-time to BIRAC for a RDI funding support of up to INR 25 lakhs (to be provided as milestone-based tranches of ₹10 lakhs & ₹15 lakhs to convert 'Design Idea' to 'Proof of Concept').
- **Showcasing:** Selected ideas will be showcased on digital platforms and official portals of DBT, BIRAC, MyGov.
- **Mentorship:** Connects and linkages to 15 iBRIC+ Institutions, DBT-BIRAC Bioincubator network and DBT-BRIC Biomanufacturing and Biofoundries network for advanced proposals. *(The winners of the 1st round can also choose the Institution which is DSIR certified for required facilities)*
- **Disbursal of the 1 lakh cash prize under category II:** If the applicant clears round one of the challenge, the following will be applicable:
 - 10 days after result announcement - 60% disbursal
 - Upload feedback video (I am very happy to be a Winner, I thank DBT and BIRAC for this amazing opportunity)
 - Selfie with the dummy cheque
 - Attend the award ceremony
 - 40% disbursal after completion of above formalities

8. Terms & Conditions

- There is no entry fee to participate in the contest.
- Participants must ensure that their profile is accurate and updated, since this profile shall be used for further communication. This includes details such as name, e-mail, mobile number, etc.
- Participants must upload proof of Indian nationality (e.g., Aadhar number) during registration. DBT and the BRIC-ILS D.E.S.I.G.N. Portal reserve the right to verify identities, eligibility, and submitted details at any stage, including by contacting relevant authorities or using third-party verification tools. Submission of false, misleading, or incomplete information will lead to immediate disqualification, potential barring from future DBT contests, and reporting to relevant authorities if fraud is suspected, thereby streamlining validation and deterring fraudulent entries.
- Submissions beyond the last date and time of submission shall not be considered.
- The entry must not contain any provocative, objectionable, or inappropriate content.
- There will be no notification to participants of entries who are not selected as winners.
- Organizers will not accept any responsibility for entries that are lost, are late or incomplete or have not been transmitted due to computer error or any other error beyond the organiser's reasonable control. Proof of submission of the entry is not proof of receipt of the same.
- Concept proposals must not contain any advertisements, endorsements, promotions, or references to products, services, or brands unrelated to the BioE3 theme. To prevent conflicts of interest and uphold the educational integrity of the challenge, any rule violation will result in immediate disqualification.
- By submitting an entry, participants will continue to hold all intellectual property/Copy rights to their submissions. They only give DBT/organizers the right to publish and share their submissions for awareness and outreach. DBT will not claim any ownership whatsoever on the proposed work. Participants will also remain free to further develop, use, or commercialize their innovations independently.
- All participants and team members must adhere to a code of respectful and ethical behaviour, prohibiting harassment, discrimination, collusion between teams, or any other unethical practices. Breaches will result in disqualification, notification to relevant authorities, and potential escalation to legal bodies under applicable laws (e.g., Information Technology Act, 2000), fostering a safe and positive environment while reducing administrative burdens.
- Participants must ensure their work is original and does not violate or infringe any third-party rights. By taking part, participants agree to follow all terms and conditions, including any updates.

- Building on the existing prohibition, submissions containing provocative, objectionable, insensitive, discriminatory, or off-topic content (unrelated to BioE3 themes) will result in immediate disqualification, deletion from platforms, and potential barring from future DBT activities. Severe violations (e.g., hate speech or illegal material) may be reported to cyber authorities under the Information Technology Act, 2000, or other laws. This enforces high standards and protects the challenge's integrity.
- Participants bear full responsibility for all expenses incurred in creating, uploading, and submitting entries (e.g., research materials, internet charges, or travel for ideation). DBT will not provide any reimbursements or financial assistance, clarify expectations and avoid claims or disputes over costs.
- DBT and the BRIC-ILS D.E.S.I.G.N Portal shall not be held liable for any delays, cancellations, modifications, or failures to fulfil obligations arising from unforeseen events beyond their reasonable control, such as natural disasters, pandemics, technical failures, cyber incidents, or government directives. In such scenarios, the challenge may be postponed, altered, or terminated, providing legal safeguards against operational disruptions.
- For all inquiries related to the D.E.S.I.G.N. for BioE3 Challenge, including clarifications on rules, submissions, technical issues, or data requests. Participants should send emails to mediacell@dbt.nic.in exclusively; responses will be provided within 5 working days. This centralizes communication, reduces scattered queries, and ensures efficient support from DBT/BIRAC/BRIC-ILS teams.
- DBT/BRIC/BIRAC may, at a later stage, enter into a detailed agreement with the winning applicants.
- The terms and conditions henceforth shall be governed by Indian laws and the Courts at New Delhi shall have the exclusive jurisdiction.

9. Disclaimer

- The submission of an application, as well as its consideration in any capacity, does not confer any entitlement to rewards, funds, or grants for the applicants. The decisions made by the DBT and BIRAC shall be deemed final in this matter, and applicants shall not have the right to claim any benefits
- All submissions would be vetted by Committees/Experts to ensure high educational standards and appropriateness. Participation does not guarantee recognition, funding or incubation support.
- The organisers reserve the right to disqualify participants/participating institutions, refuse/discard entries if the information submitted is plagiarised, false or erroneous.
- The Department of Biotechnology has the right to cancel or amend all or any part of this Contest and/ or the Terms & Conditions/ Technical Parameters/Evaluation Criteria. Any changes to the

Terms & Conditions/ Technical Parameters/ Evaluation Criteria, or cancellation of the Contest, will be updated/posted on the [BRIC-ILS D.E.S.I.G.N portal](#). It would be the responsibility of the participating individual/institution to keep itself informed about any changes in the Terms & Conditions/ Technical Parameters/ Evaluation Criteria stated for this contest.

- DBT/BIRAC will not be liable for any Intellectual Property (IP) disputes, such as patents, copyrights, etc., arising from submitted applications and resultant processes thereto.
- The evaluation decision of the Selection Committee would be final and binding on all the contestants, and no clarifications would be issued to any participant/participating institution on any decision of the Selection Committee.
- The personal information provided by participants will be solely used for the purpose of activity/contest. DBT/organizers ensure that no personal data will be shared with any third party or used for commercial purposes. All data will be handled in accordance with applicable data protection laws.
