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

"Empowering Youth to Solve Critical Issues of their TIMES"

Request for Proposals (RFP):

Category 1- School Students (Class VI-XII) (Submissions through **MyGov** Innovate India (https://innovateindia.mygov.in/) only.

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 (**Bio**technology 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: Biotechnology for Economy, Environment & Employment

On 24th August, 2024, the Union Cabinet under the leadership of PM Shri Narendra Modi approved BioE3 (**Bio**technology 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

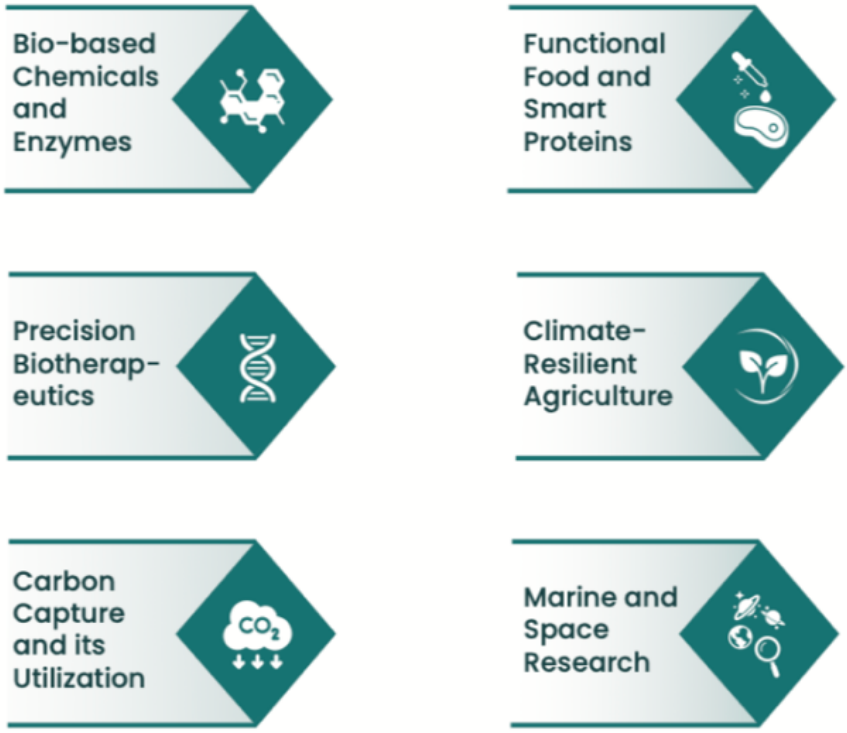
- **Goal**: Unite fragmented efforts to fast-track innovation-to-technology.
- **Objective**: Enable adoption of advanced technologies for efficient, sustainable, and scalable bio-based products.

➢ Key Focus Areas

- 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%20Brohcure.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"

Applications under the present RFP are invited from school students (Classes VI–XII) across India to conceptualize innovative designs and solutions using microbes, molecules, and biotechnology to address real-world challenges. Students are expected to display their basic understanding of the BioE3 Policy and its possible implementation through imaginative, creative and concise videos. Participants are encouraged to highlight the novelty, feasibility, and potential contribution of their ideas towards a sustainable, clean, and self-reliant future for

our country. A few examples of challenges for video submission are provided under **Section 2** of this document.

- **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
- **I- 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.***

➢ **Expected Outcome of BioE3 Challenge**

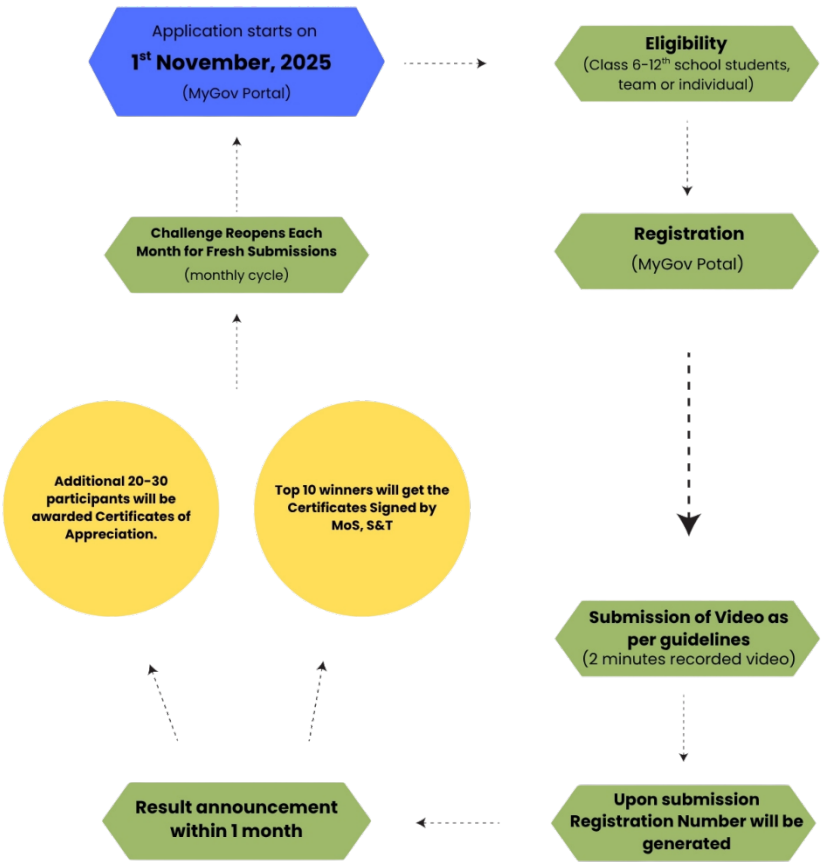
The D.E.S.I.G.N for the BioE3 challenge will generate inquisitiveness and excitement in the young students to venture into challenges of their TIMES and propose novel solutions for India's sustainable, equitable, and self-reliant growth.

➢ **The top 10 participants will receive digital certificates signed by the Hon'ble Union Minister of State for Science and Technology.**

➢ 20–30 additional participants will be awarded certificates of appreciation. Selected ideas will also be showcased on digital platforms and official portals, providing visibility and recognition to young innovators.

➢ ***Detailed registration instructions are provided in this document.***

The **application window** will remain open for first 20 days of every month for next 12 months. First round of applications would begin from 1st November, 2025 till 20th November, 2025 (5:3pm).



2. Areas of Focus for student projects (Class VI-XII)

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

- **"Personalized Medicine: Science That Knows You Best"**
  - How personalised Medicine is going to reshape the treatment outcomes in patients and improve quality of life
  - Probiotic formulations that boost immunity in children or fight gut infections
- **"Monoclonal Antibodies: Your Body's Tiny Bodyguards"**
  - Designing Monoclonals to neutralise bacteria
- **"CRISPR: Super Scissors for Your DNA"**
  - CRISPR technology for disease diagnosis, cell and gene therapy, better crops etc.
- **"Pandemic Protectors: How Vaccines Save the World"**
  - Engineered yeast/bacteria to produce affordable vaccines

- **"Mission: Gene Repair – How Scientists Rewrite DNA"**
  - Repair damaged DNA to cure genetic diseases
- **"mRNA Magic: Teaching Cells to Heal!"**
  - mRNA as a game changer in regenerative medicine
- **Diagnostics & Disease Detection**
  - Microbial sensors for detecting waterborne pathogens (like E. coli, cholera, or typhoid)
  - Engineered microbes that glow in the presence of toxins or disease markers
  - Paper based microbial test strips for rapid diagnostics in rural areas
- **Regenerative Medicine & Healing**
  - Microbes that produce natural compounds aiding wound healing or skin repair
  - Designing microbial gels that can prevent infections in burn injuries
- **Plastic-eating microbes/ alternatives to single-use plastics**
  - Microbes that break down common plastics like polystyrene
  - Biodegradable plastics or bioplastics using renewable biomass (e.g. starch, algae, or agricultural waste)
  - Designing closed-loop cycles (production → use → biodegradation
- **Microbes for clean water treatment**
  - Biofilters that degrade contaminants
  - Use of microbial mats or biofilms for heavy metal removal
  - Portable microbial water purifiers for rural and urban communities
- **Oil spill and industrial waste cleanup**
  - Bioremediation using hydrocarbon-degrading microbes
  - Eco-friendly solutions for rapid response to oil or chemical spills
- **Carbon capture utilisation and storage**
  - Using engineered microbes to convert CO_2 into useful products like biofuels, bioplastics, or protein
- **Climate resilient agriculture**
  - Microbial biofertilizers to reduce dependence on chemical fertilizers
  - Drought- and flood-resistant crops
- **Microbe-based nutrients or food production**

- Fermentation-based novel food systems (e.g., microbial proteins, probiotics, nutraceuticals)
- Microbes producing vitamins, minerals, or amino acids

- **Microbes producing potable water**
  - Genetically engineered microbes to desalinate or purify water

- **Futuristic use of microbes in space, health, or climate resilience**
  - Microbes as life-support systems for long-duration space missions (oxygen generation, waste recycling, food supplements etc.)
  - Bio-diagnostics using engineered microbes for quick detection of diseases
  - Microbial "climate shields" (bio-based solutions to reduce extreme heat or pollution in cities)

- **Other design entities related to biotech innovations**
  - Microbial solutions for vector control (e.g. Wolbachia bacteria to reduce dengue mosquito populations)
  - Engineered microbes to generate bio-batteries for small electronics
  - Digital-bio hybrids (using AI, IoT, or robotics)

3. Guidance on Participation & Submission of Applications

- Students of classes VI-XII , enrolled in any school or institution pan India can submit their nomination for D.E.S.I.G.N. through the MyGov **INNOVATE India** portal only

- 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 (5:30pm).

  The Contest to continue for 1 year

- A team must consist of students from same school and can be from different grades with a designated team leader. Team may consist of max of 5 members The designated team leader will be responsible for filling out the registration form, managing all form-related activities, handling all entry/design submissions on behalf of the team, and providing a mandatory email ID of self/parent for registering in MyGov Innovate portal and also for all future communications. **The team leader's details are therefore essential to initiate the registration process.**

- 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
- A Team Leader/applicant can submit multiple entries in a particular month. After the results are announced (one month after submission), teams that are not selected may revise and resubmit their proposals—or submit new ones—in the subsequent application window (i.e., after two months from their initial submission).
- Videos can be made and posted in (i) English or (ii). Hindi
- YouTube Video Submission Process: For video entries, Team Leader must first upload Team's D.E.S.I.G.N video entries to YouTube along with a brief description explaining the video, then include the YouTube link(s) in the application form. For multiple entries, teams must provide separate links for each entry. Once the application is submitted, no further changes will be allowed, and the entry will be locked.
- As YouTube channels can be created only by users aged 18 and above, the participants to upload their videos in the YouTube channels created by their parents/Guardians.
- Consent form which is embedded within the application form, is to be signed and uploaded before the submission.
- Save draft and accept terms and conditions before final submission- **Mode of entry submission:** Teams will have an option to upload all entries together.
- Submissions must adhere to plagiarism policies; non-original or copied content will lead to disqualification. Applications with junk or malicious data will be outrightly rejected.
- Participants must create original videos without using AI-generated visuals or narration.
- Participants and schools are encouraged to share their videos through their social media handles, using hashtags- #BioE3 #Biomanufacturing #DESIGNforBioE3 and tagging the following social media handles:

Twitter- @PMOIndia, @DrJitendraSingh, @DBTIndia, @BIRAC_2012, @BricDbt

Linkedin- Dr Jitendra Singh, Department of Biotechnology, BIRAC- Biotechnology Industry Research Assistance Council

YouTube- @dbtindia, #birac

Facebook- Dr Jitendra Singh, Department of Biotechnology, India; DBT-Birac

Instagram- dbt_india; DBT BIRAC

- **Winner Announcement:** Winners will be announced within one month from the closing date of submission entries. However, in case of unforeseen circumstances beyond the control of DBT or MyGov—such as natural disasters, pandemics, technical issues, cyber incidents, administrative delays, evaluation-related extensions, or government directives—the announcement timeline may be subject to change. Necessary adjustments will be made accordingly, and participants will be duly informed.

➢ Registration Details

Click here to register: https://innovateindia.mygov.in/bioe3/

- Each team must complete the official registration form
- Mandatory details include: Name, Date of Birth, State, Zone, District, Address, Pin code, School, Board of Education, Contact Number, Email ID, School ID, Parent/Guardian Details Affiliation and duly signed consent form.
- All details need to be provided for each team member.
- A Unique Registration Number will be generated after successful submission of details.

➢ Video Shooting Guidelines for Participants

- Introduce yourself/your team in the beginning of the video. Mention your name and school along with the area/challenge of focus of the video.
- Duration of the video should be minimum 60 seconds up to maximum 120 seconds.
- Record the video in horizontal (landscape; 16:9) format.
- Use the rear camera instead of the front camera for better quality.

- Keep the frame stable and steady, avoiding any shakes.
- Ensure the background is clean and free from distractions.

4. Timelines

- Launch Timeline: **November 1st, 2025**
- Submission Window: **Till November 20th, 2025 (5:30pm)**
- Results Announcement & Prize Distribution: In the next 1 month, i.e. upto October 2026.

The cycle will be repeated every month for the next 1 year.

5. 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.

6. Recognition on Offer

- **Certificates of Merit:** The Top 10 winning entries will receive a digital *Certificate of Merit* signed by the Hon'ble Minister of State (IC) for Science and Technology. All members of each winning team will be individually awarded digitally signed certificates. For example, if a winning team comprises five members, all five members will receive certificates (e.g., 5 team members × 10 winning entries = 50 certificates).

- The Top 10 Entries will receive a digital 'Certificate of Merit' signed by the Hon'ble Minister of State (IC) for Science and Technology. On the other hand, 20–30 additional participants will be awarded digital certificates of appreciation.
- Selected ideas will be showcased on digital platforms and official portals.
- Winning ideas may also feature in DBT/BIRAC/BRIC's annual report.
- Selected students may also get access to facilities and resources at BIRAC's EYUVA/BioNEST incubation centres to further test and validate their ideas

7. Terms & Conditions

- Participants can take part in the contest **only** by registering on **MyGov** Innovate India (https://innovateindia.mygov.in/).
- There is no entry fee to participate in the contest.
- Participants must ensure that their MyGov profile is accurate and updated, since this profile shall be used for further communication and certificate distribution. This includes details such as the school/institution name, e-mail (either self or parent's), mobile number, etc.
- Team Leader may submit either one entry in a single area of focus or multiple entries, with only one allowed per area in a specific month.
- A Team Leader in a specific month cannot be a team leader again for participation in subsequent months. However, he/she can participate as a team member again, on the other hand, any former team member can register as a Team Leader in future editions.
- **Submission of written consent while registration:** In compliance with the Digital Personal Data Protection Act, 2023 (DPDP Act), all participants under the age of 18 must obtain and submit verifiable written consent from a parent or legal guardian during registration. This consent must confirm awareness of the challenge rules, personal data processing (including collection, use, and storage), video submission, and potential risks, and include the guardian's verifiable contact details (e.g., email or phone) for authentication. Non-compliance will result in rejection of the application, ensuring legal protection for minors and minimizing disputes. Consent form which is embedded within the application form, is to be signed and uploaded before the submission.
- The D.E.S.I.G.N. for BioE3 Challenge will take place monthly from the 1st of every month for a period of 20 days. The portal will accept entries until 5:30pm on the 20th day and will close thereafter.

- For video entries, teams should upload their videos to YouTube and include the YouTube link(s) in the application form. For multiple entries, teams must provide separate links for each entry. Once the application is submitted, no further changes will be allowed, and the entry will be locked.

- As YouTube channels can be created only by users aged 18 and above, the participants to upload their videos in the YouTube channels created by their parents/Guardians.

- Videos 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.

- Building on the existing prohibition, submissions/entries containing provocative, objectionable, insensitive, discriminatory, or inappropriate content (unrelated to BioE3 themes) will result in immediate disqualification, deletion from platforms, and potential barring from future DBT/MyGov 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, with notifications to schools/guardians. This enforces high educational standards and protects the challenge's integrity.

- Participants bear full responsibility for all expenses incurred in creating, uploading, and submitting entries (e.g., video production equipment, internet charges, or travel for research). DBT and MyGov will not provide any reimbursements or financial assistance, clarify expectations and avoiding claims or disputes over costs.

- Organizers are not liable to any responsibility for entries that are lost, 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.

- There will be no notification to participants of entries who are not selected as winners.

- All participants, team members, and guardians must follow a code of respectful and ethical conduct, prohibiting harassment, discrimination, hate speech, collusion, or any other unethical behaviour. Violations will result in team disqualification, intimation to school authorities, and, where applicable, reporting to competent authorities under Section 79(3)(b) of the Information Technology Act, 2000, Rule 3 of the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021, or other relevant provisions of the IPC, POCSO Act, 2012, or Digital Personal Data Protection Act, 2023.

- 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.

- 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.

- DBT and MyGov 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/MyGov teams.

- The terms and conditions henceforth shall be governed by Indian laws and the Courts at New Delhi shall have the exclusive jurisdiction

8. Disclaimer

- The submission of an application, as well as its consideration in any capacity, does not confer any entitlement to rewards, funds, grants, or access to any Government or Government-established facility, such as EYUVA/BioNEST incubation centres, for the applicants. The decisions made by the BIRAC/DBT 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 or 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 MyGov Innovate India platform. 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/MyGov will not be liable for copyright disputes arising from submitted entries.
- 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/communication. MyGov and 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.

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