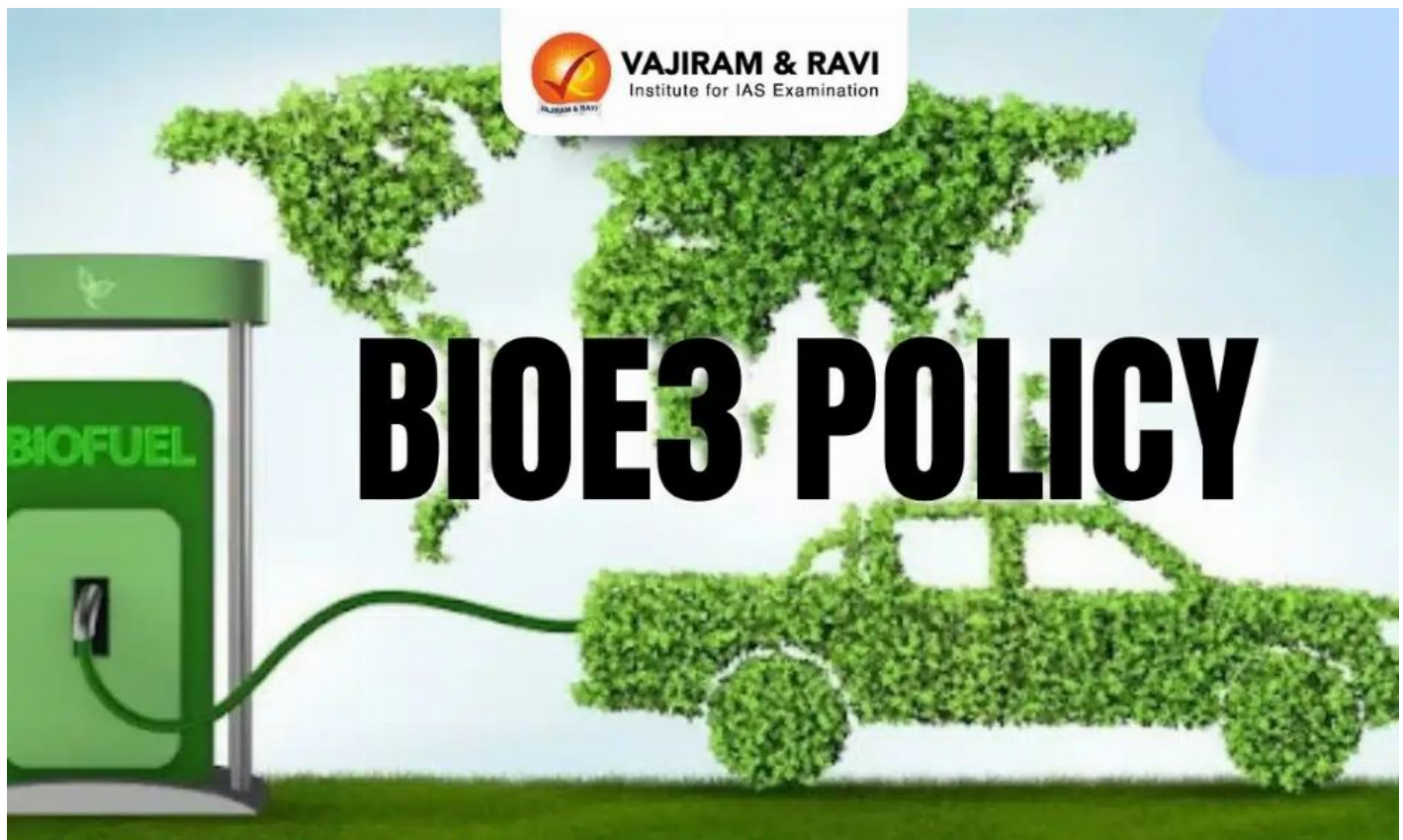


BioE3 Policy - India's Push for Biomanufacturing Hubs

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BioE3 Policy Latest News

- India remains heavily **dependent on imports** for active pharmaceutical ingredients (**APIs**), fermentation-based drugs, enzymes for biofuels, and biofertilizer reagents.
- Post Covid-19 pandemic, the government has **accelerated efforts for domestic manufacturing** under policies like the PLI scheme.
- The Biotechnology for Economy, Environment, and Employment (BioE3) policy/ **BioE3 policy** of the Government of India envisions setting up 16 biomanufacturing hubs to strengthen the bioeconomy and ensure self-reliance (Atmanirbharta).

India's Bioeconomy

- **The bioeconomy** is an economic system that utilizes renewable biological resources from plants, animals, and microorganisms—along with organic waste—to create food, feed, energy, and bio-based products.
- As in December 2023, Bioeconomy contributes **4.25%** to India's Gross Domestic Product (GDP).

- Indian Bioeconomy has grown from **\$10 billion in 2014 to \$151 billion in 2023**, achieving this target two years ahead of projections for 2025.
- **The number of Biotech Startups** has grown from 50 Biotech Startups in 2014 to 8,531 Biotech Startups in 2023.

About the BioE3 Policy

- Launched on August 27, 2024, it is a Union S&T Ministry's policy that sets forth a framework to **ensure the adoption of cutting-edge advanced technologies** for **promoting Biomanufacturing**.
- The policy outlines guidelines and principles for enabling mechanisms for '**Fostering High Performance Biomanufacturing**' in the country across diverse sectors.
- It is aligned with India's vision of **Green Growth** and also with the Lifestyle for Environment (**LiFE**) initiative that envisions collective approach towards sustainability.

Key Features of the BioE3 Policy

- **Biomanufacturing hubs:**
 - Around **16 hubs** to be set up across India.
 - Each hub will house large fermenters (500-1,000 litres).
 - **Focus:** Fermentation-based medicines, biofuels, bioproteins, carbon capture technologies, and novel monoclonal antibody treatments.
 - **Hubs will pool resources** → reducing capital burden for start-ups and MSMEs.
- **Product focus:**
 - The government has listed **approximately 1,000 critical products** needed for indigenous manufacturing.
 - **Categories:**
 - APIs and drugs
 - Enzymes for biofuels
 - Reagents for biofertilizers
 - Smart proteins and nutrition enhancers
 - Carbon capture innovations

Biofoundries – The First Step

- **6 Biofoundries** already supported by Department of Biotechnology (DBT):
 - NABI, Mohali, for sustainable food & nutrition.
 - Tata Memorial Centre, for new drugs.
 - ICGEB, New Delhi, for synthetic biology, microbial cells, biofuels, carbon capture.
 - THSTI, Faridabad, for monoclonal antibody therapies.
 - IPFT, Gurugram, for biopesticides.
 - NCCS, Pune, for enzymes and metabolites.
- **Function:** Conduct proof-of-concept testing, and innovations are transferred to hubs for scaling up.

Implementation Model

- **Location:** The biomanufacturing hubs will be set up within research institutes, private companies, or near knowledge hubs.
- **Accessibility:** Open to government R&D labs, universities, start-ups, and private industry.
- **Cost-sharing model:** The **start-ups** will be charged a maximum of 5% over the actual costs while **private companies** may be charged up to 15% over the cost.
- **IPR policy:** Facilities will not claim IP rights, ensuring innovation ownership with developers.

Significance of BioE3 Policy for India

- **Reduces import** dependency in critical pharma and bio-based sectors.
- Strengthens bioeconomy and aligns with **Atmanirbhar Bharat** vision.
- **Supports innovation**-to-market pipeline through biofoundries → hubs.
- **Boosts R&D** collaboration among government, academia, and industry.
- **Promotes start-up** ecosystem in biotechnology.

Conclusion

- The BioE3 policy, by integrating biofoundries with biomanufacturing hubs, positions India to emerge as a **global leader in biotechnology-driven solutions** for health, energy, and agriculture.
- Going forward, sustained investment, industry-academia collaboration, and supportive regulatory frameworks will be key to realising the vision of a **self-reliant and innovation-led bioeconomy**.

Source: IE

Source: <https://vajiramandravi.com/current-affairs/bioe3-policy-indias-push-for-biomanufacturing-hubs/>

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