

GOVERNMENT OF INDIA
MINISTRY OF CHEMICALS AND FERTILIZERS
DEPARTMENT OF CHEMICALS AND PETROCHEMICALS

RAJYA SABHA
UNSTARRED QUESTION No. 2585
ANSWERED ON - 11/08/2026

PROMOTION OF BIO-BASED AND GREEN CHEMICALS IN INDIA

2585. SHRI LAHAR SINGH SIROYA:

Will the Minister of CHEMICALS AND FERTILIZERS be pleased to state:

- (a) whether Government has introduced any policy measures or incentive schemes to promote the production of bio-based and green chemicals in the country;
- (b) the major initiatives taken to encourage research, innovation and industrial investment in the development of sustainable chemical manufacturing technologies;
- (c) whether Government is facilitating collaboration among industry, academic institutions and research organisations to strengthen the ecosystem for green chemicals; and
- (d) the major outcomes achieved in enhancing the global competitiveness of the Indian chemical industry, reducing import dependence and promoting environmentally sustainable manufacturing practices?

ANSWER

THE MINISTER OF STATE IN THE MINISTRY OF CHEMICALS AND FERTILIZERS
(SMT. ANUPRIYA PATEL)

(a) to (d):

- (i) The Department of Chemicals and Petrochemicals has implemented a Scheme for establishing Centres of Excellence (CoEs). Under this Scheme, the Department provides grant-in-aid to Government educational and research institutions to improve existing technology and promote development of new applications in the field of Chemicals and Petrochemicals including green and bio-based chemicals. Under the Scheme, the Government of India provides financial support of up to 50 per cent of the total project cost, subject to an upper limit of Rs. 5 crores for each CoEs. 18 CoEs have been approved.

The CoE established at IIT Kanpur is developing green and novel surfactants and promoting indigenous production of speciality chemicals.

(ii) The Department of Science and Technology (DST), under the 'Therapeutic Chemicals' program, is pursuing the objective of achieving self-reliance in the health care sector, with emphasis on developing indigenous technologies based on locally available raw materials, while ensuring adoption of environmentally sustainable processes in line with the principles of green chemistry and carbon economy.

As part of the initiative, DST has created 5 clusters with 25 technical institutes in the country for the development of Key starting materials, Intermediates & raw materials that would be required for therapeutic chemicals. These clusters are expected to collaborate with relevant industry for their inputs to identify the priority chemicals and also for commercialization of the identified chemicals.

(iii) Under the BioE3 (Biotechnology for Economy, Environment and Employment) policy of Department of Biotechnology, R&D projects have been implemented for the production of specialty chemicals and active pharmaceutical ingredients (APIs) using enzymes to promote greener and more sustainable manufacturing practices.

(iv) Department of Biotechnology (DBT) has been promoting R&D in Advanced Biofuels, Waste-to-Value, Integrated Biorefineries and Carbon Capture and Utilization through R&D projects involving industry, academia, research institutions and startups. These initiatives have led to the development of bio-based products including biofuels, biopolymers, specialty chemicals, organic acids, biosurfactants, industrial enzymes and other value-added products from renewable biomass.

(v) The Department of Biotechnology through the Integrated Biorefineries Mission (IBM) under Mission Innovation promotes the development and deployment of enabling integrated biorefinery technologies. Department through the Mission facilitates knowledge exchange, collaborative research, technology validation and industry participation for the development of bio-based fuels, chemicals and materials and serves as a platform to connect Indian industry and academia with like-minded global stakeholders, fostering collaborative research, pilot-scale technology development and commercialization of sustainable biomanufacturing technologies.

(vi) As part of the initiative to promote green chemicals and to reduce dependence on imported ammonia, the Government is encouraging domestic production and procurement of Green Ammonia under the National Green Hydrogen Mission. Under this Mission, the Strategic Interventions for Green Hydrogen Transition (SIGHT) Scheme focuses on demand aggregation and procurement of Green Ammonia for the fertilizer sector, under which a provision has been made for procurement of approximately 7 Lakh MT per annum of Green Ammonia by the Fertilizer companies for production of DAP/NPK fertilizers.

(vii) The Ministry for Micro Small & Medium Enterprises (MSME) is implementing Micro and Small Enterprises (MSE)- Scheme for Promotion and Investment in Circular Economy (SPICE). It is a Central Sector Scheme, with an outlay of Rs 472.50 Cr for the period of FY

2023-24 to 2026-27. The objective of the Scheme is to promote adoption of circular economy practices by Micro, Small Enterprises (MSEs), including MSEs of Chemical Sector, focusing on sectors like Plastic, Rubber, and Electronics Waste Management etc. The Scheme provides a 25% subsidy to Micro and Small enterprises on the cost of the plant and machinery subject to a maximum limit of Rs 12.5 Lakhs / unit.

(viii) Government of India notified the Petroleum, Chemical and Petrochemical Investment Region(s) (PCPIR) Policy, 2007 to attract investment and for generation of employment in the Petroleum, Chemical and Petrochemical Investment Region(s). PCPIRs are conceptualized in cluster-based approach with common infrastructure and basic utilities to provide a competitive environment conducive for setting up businesses. The PCPIRs promote the Chemical and Petrochemical sector in an integrated and sustainable manner. Currently, three PCPIRs have been notified in the States of Andhra Pradesh (Vishakhapatnam-kakinada), Gujarat (Dahej) and Odisha (Paradeep).

(ix) To enhance the global competitiveness of Indian Chemical industry, the Union Cabinet on 24th July, 2026, approved the BHAVYA – Rasayan (Bharat Audyogik Vikas Yojana– Rasayan) Scheme for establishing three dedicated Chemical Parks in the country with a total budget outlay of Rs. 3,030 Crore under the Challenge Route. Under the Challenge Route, all States and Union Territories, are eligible to apply for the establishment of a Chemical Park in accordance with the Scheme guidelines and selection criteria. Under the Scheme, the Central Government will provide financial assistance of up to Rs. 1,000 Crore for each Chemical Park, subject to a minimum contribution of Rs. 500 Crore by the respective State Government.

(x) To foster collaboration between academia and industry and promote technology transfer, the Department of Chemicals and Petrochemicals, in collaboration with the Indian Chamber of Commerce, organized two editions of the Chemcon Innovation Summit in 2024 and 2025 in New Delhi. These summits provided the Centres of Excellence (CoEs) with an opportunity to present their innovations and research that are ready for industrial application, while also enabling industry participants to showcase their ongoing projects for collaboration.

(xi) HIL (India) Limited, a Public Sector Undertaking under the Department of Chemicals and Petrochemicals, is establishing a manufacturing facility for bio-based alternatives to DDT (insecticide) at its Rasayani Unit in Maharashtra, which will produce bacteria-based larvicides and neem-based botanical pesticides.

Bacillus thuringiensis israelensis (Bti) is a naturally occurring soil bacterium that effectively kills mosquito larvae present in water. HIL is setting up a manufacturing facility for a Bti-based larvicide plant with an annual production capacity of 500 MT, at a total investment of Rs. 16.80 crores.
