GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO-4322
ANSWERED ON 02/04/2026

COMMERCIALISATION OF RADIATION-BASED TECHNOLOGIES

4322. SHRI NARHARI AMIN
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Will the PRIME MINISTER be pleased to state:-

(a) the number of industrial or water treatment facilities where radiation-grafted cotton cloth-based matrix technology for treatment of textile or dye effluents has been deployed so far;
(b) whether the technology has been transferred to private entrepreneurs for commercialisation;
(c) if so, the details of the entities involved and the current status of its adoption;
(d) the extent to which treated water from such facilities is being reused for industrial purposes, along with the estimated volume of water treated using this technology; and
(e) the steps taken by the Ministry to promote wider adoption of radiation-based technologies for treatment of industrial effluents and environmental protection?

ANSWER

THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (DR. JITENDRA SINGH)

(a) One industrial scale plant has been deployed in cotton textile printing and dyeing industry Jodhpur, Rajasthan for technology demonstration.

(b) & (c) Yes, till date technology has been transferred to six private entrepreneurs on non-exclusive basis for commercialisation. As a part of transfer of technology (ToT) process, the hands-on-training and technical know-how is provided to the licensees

on various aspects of the technology, including fabrication of radiation grafted cartridges, installation, operation and maintenance of the treatment plants, as per the Standard Operation Procedure (SoP).

(d) So far, over 30,00,000 L of the coloured dye wastewater has been treated by the industry using the demonstration plant. The treated water has been reused for industrial applications by the same industry.

(e) In order to promote and wider adoption of the radiation-based technology, a 75KLD Test facility, installed and being operated in the industry for demonstration of the technology to industrialists, private entrepreneurs, regulatory agencies – State pollution control boards, and local administration. Furthermore, for the wider dissemination the technology is exhibited to the target industries in various platforms/workshops/outreach programs through working models, audio/video display, posters/brochures and lectures.

The technology has been transferred to private entrepreneurs for commercialisation and deployment.

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