

GOVERNMENT OF INDIA
MINISTRY OF NEW AND RENEWABLE ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO. 2863
ANSWERED ON 17.03.2026

FRAMEWORK FOR SAFE DISPOSAL OF END-OF-LIFE SOLAR PANELS

2863. SMT. SUDHA MURTY

Will the minister of new and renewable energy be pleased to state

- (a) whether, in view of the rapid expansion of solar power capacity and the typical lifecycle of solar panels being around 25 years, Government has assessed the potential volume of solar panel waste likely to arise in the coming years;
- (b) whether guidelines or regulations have been put in place for safe disposal, recycling and recovery of materials from end-of-life solar panels, including extended producer responsibility frameworks; and
- (c) whether steps are being taken to promote domestic recycling capacity and circular economy practices in the solar sector?

ANSWER

**THE MINISTER OF STATE FOR NEW & RENEWABLE ENERGY AND POWER
(SHRI SHRIPAD YESSO NAIK)**

- (a) The Council on Energy, Environment and Water, a think tank, has estimated that cumulative waste from existing and projected solar capacity installations in India could reach around 600 kilo-tonnes by 2030.
- (b) Ministry of Environment, Forest and Climate Change, Government of India has notified the E-Waste (Management) Rules, 2022. These rules also cover environmentally sound management of e-waste generated from electrical and electronic equipment, including solar photo-voltaic panels. An online Extended Producer Responsibility (EPR) Portal for E-Waste management has also been made operational by Central Pollution Control Board.
- (c) The Government has taken following steps to promote domestic recycling capacity and circular economy practices in the country:
 - Government of India constituted committees to prepare action plans to expedite transition from linear to circular economy in 11 focus areas including Solar Panels
 - The MNRE had constituted a Committee on Circular Economy in Solar Panels.
 - The MNRE had launched an “Innovation Challenge for Circularity in Renewable Energy Technologies – Batteries and Solar Photovoltaic” to support research and innovation in recycling, second-life applications, and circular design of solar modules and batteries under the Renewable Energy Research and Technology Development (RE-RTD) programme.
 - The Department of Science and Technology (DST), issued a Call for proposal on “Recovery and Recycling of End-of-Life Solar PV Panels/Modules” to develop economically viable recycling processes and equipment through academia–industry partnerships.
 - Ministry of Mines (MoM) launched a recycling incentive scheme with an outlay of Rs. 1500 crore under the National Critical Mineral Mission (NCMM) to develop domestic capabilities for recovering critical minerals from e-waste, lithium-ion battery waste, and components of end-of-life vehicles, supporting circular economy practices in clean-energy supply chains.
