

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

LOK SABHA
UNSTARRED QUESTION NO. 1330
TO BE ANSWERED ON 28.07.2025

Generation of Solar Panel Waste

1330. DR. PRADEEP KUMAR PANIGRAHY:

Will the Minister of ENVIRONMENT, FOREST AND CLIMATE CHANGE be pleased to state:

- (a) whether 34,000 metric tonnes of solar panel waste is expected to generate in the country by 2030;
- (b) if so, the reasons for lack in recycling standards or Extended Producer Responsibility (EPR) rules, unlike the European Union's strict Waste, Electrical and Electronic Equipment (WEEE) Directive; and
- (c) the steps taken/proposed to be taken by the Government to make recycling Standards or EPR Rules at par with EU's WEEE Directive?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
(SHRI KIRTI VARDHAN SINGH)

(a) to (c) No authentic estimate is available so far regarding the generation of solar panel waste in the country by 2030. Ministry has comprehensively revised the E-Waste (Management) Rules, 2016 and notified the E-Waste (Management) Rules, 2022 in November, 2022 and the same is in force since 1st April, 2023. These new rules provide for managing e-waste including solar photo-voltaic (PV) modules or panels or cells in an environmentally sound manner and putting in place an improved Extended Producer Responsibility (EPR) regime for e-waste recycling wherein all the manufacturer, producer, refurbisher and recycler are required to register on portal developed by the Central Pollution Control Board (CPCB). The new provisions facilitate and channelize the informal sector to formal sector for doing business and ensuring recycling of e-waste in environmentally sound manner. Provisions for environmental compensation and verification & audit have also been introduced. These rules also promote Circular Economy through EPR regime and scientific recycling/disposal of the e-waste.

As per these rules, every manufacturer and producer of solar photo-voltaic modules or panels or cells have been mandated to obtain registration, maintain inventory of solar PV modules, store the waste generated from Solar PV modules/panels/cells up to the year 2034-35 as per the guidelines laid down under the rules, file annual returns, comply with Standard Operating Procedures, and process the waste other than solar PV modules as per the applicable rules or guidelines. Further, Recycler of solar photo-voltaic modules or panels or cells has been mandated for recovery of material as laid down by the CPCB.

Following steps has been taken for effective management of E-Waste Rules as under:

- (i) An online E-Waste EPR portal has been developed by CPCB wherein entities such as producers, manufacturers, recyclers and refurbishers of the e-waste are required to be registered.
- (ii) CPCB has developed guidelines for the scientific and environmentally sound management of e-waste. The guidelines detail the procedures and facilities in terms of machineries and pollution control devices required for the recycling of e-waste in environmentally sound manner.
- (iii) An action plan for implementation of E-Waste (Management) Rules, 2022 has been prepared by CPCB and the same is being implemented by all the State Pollution Control Boards (SPCBs)/Pollution Control Committees (PCCs) in their respective States/UTs. SPCBs/PCCs are submitting quarterly progress report.
- (iv) The registered entities submit their compliance through Quarterly and Annual Returns on the E-waste Portal.
- (v) The rules have provided verification and audit of the registered entities by the CPCB or through a designated agency to verify compliance of these rules through random inspection and periodic audit, as deemed appropriate, so as to take action against violations of these rules.
- (vi) Environmental Compensation (EC) Guidelines under E-Waste (Management) Rules, 2022 have been developed for levying EC on any entity in case of violation of any of the provision of these rules and guidelines issued hereunder.
