

## European Solar and Energy Storage Solutions

# Japan recycling photovoltaic



## Overview

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The industry and environment ministries plan to introduce mandatory recycling for solar panels, aiming to optimize resource use and minimize the environmental impact of panel disposal. What is Japan solar panel recycling?

Japan Solar Panel Recycling is set to introduce a groundbreaking recycling mandate for solar panels to tackle the surge in decommissioned panels expected around the mid-2030s. This initiative is a critical part of Japan's strategy to boost sustainability and manage waste from the expanding solar industry.

What is PV Cycle Japan?

PV CYCLE aisbl and the Akita Prefectural Resources Technology Development Organization (Akita PRTDO) announced today the creation of PV CYCLE Japan for the collective management of discarded photovoltaic panels, which introduces a sustainable concept for the end of life management of photovoltaic panels in Japan.

Will solar panels be repurposed in Japan?

While the number of solar panels in Japan began increasing in the late 2010s, many of them will reach the end of their useful lives in the 2030s, which could lead to their mass disposal. Given this, the government will require companies and others to recycle solar panels to reduce the impact on the environment, according to sources.

How much solar panel waste does Japan produce a year?

In November 2016, the Environment Minister of Japan advised that Japan's production of solar panel waste per year is expected to rise from 10,000 to 800,000 tonnes by 2040 and the country has no plans to dispose of them safely and effectively [17, 20].

How many PV panels are disposed a year?

The volume of PV panels will peak around 2035 to 2040 with approximately 170,000 to 280,000 tons (10 to 17 million panels) disposed per year, which is equivalent to 1.7 to 2.7% of the final disposal sites for industrial waste. waste is mostly landfilled. of PV panels differs by material.

How many kilowatts of solar power does Japan have?

Total installed solar power capacity reached 85 million kilowatts at the end of fiscal 2022, giving Japan the third-largest installed capacity in the world. The Yomiuri Shimbun At present, recycling of solar panels is not mandatory and many of them go into landfills.

## Japan recycling photovoltaic



### Advanced Technology for Recycling Photovoltaic Panels

In collaboration with the New Energy and Industrial Technology Development Organization (NEDO), Tokuyama Corporation aims to create a recycling business to process waste photovoltaic panels and recover high-quality components to meet expected demand for Large-Scale Photovoltaic Panel Disposal in the 2030s.

### IEA-PVPS identifies 456 patents in PV module recycling

The next three companies in the ranking were from Japan, Tattori Resource Recycling, NPC which provides PV production and recycling equipment, and Daikin Industries. The country ranking based on patent activity has China at the top with 141, followed by Japan with 85, South Korea with 79, the U.S with 54 and 33 for Germany,



### Photovoltaic module decommissioning and recycling in Europe and Japan

The thesis points out practical problems of waste management within the Photovoltaic industry and conclusions are based on empirical data. Benefits for photovoltaic key stakeholders, like module manufacturers, governments and power plant owners are investigated. The conclusions drawn are based on interviews, literature review and online research. So far ...

## An overview of solar photovoltaic panels' end-of-life material recycling

In Japan, solar panel waste recycling is under the control of the Japanese environment ministry and solar panel manufacturers participate with local companies in research on recycling technology that relates to recycling technology in Europe [13]. Moreover, the European PV organization and Shell Oil Company (Japan) have entered into an association.



## Japan to implement solar module recycling and recovery measures

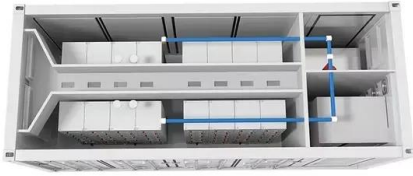
A working group convened by the country's Environment Ministry calculated that landfills sites could be filled with close to 800,000 tonnes of PV modules by 2040, building up from expected near

## Joint take-back and recycling scheme for Japanese PV market

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## Solar Panel Recycling Service , NPC incorporated



We provide intermediate treatment service to recycle discarded solar panels. At Matsuyama Factory in Ehime, Japan, an automatic solar panel disassembly line is installed. The line separates glass from other materials without crushing, ...

## RECYCLING (REUSE) OF PHOTOVOLTAIC PANELS

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## Solar Panel Recycling Service , NPC incorporated

We provide intermediate treatment service to recycle discarded solar panels. At Matsuyama Factory in Ehime, Japan, an automatic solar panel disassembly line is installed. The line separates glass from other materials without crushing, applying the "separation method using heated blade," our own technology.

## Councils of Japanese government holds meeting on disposal, recycling ...

On Sept. 13, 2024, a committee of the Central Environment Council and a working group of the Industrial Structure Council of Japan held the first of a series of meetings to discuss the disposal and recycling of photovoltaic (PV) systems in the

country.



### Japan Solar Panel Recycling Mandate to enhance sustainability

By mandating recycling and investing in technological advancements, Japan is setting a global precedent for responsible solar energy practices. This initiative not only addresses the environmental impact of decommissioned panels but also unlocks the potential for resource recovery and circular economy principles.



### A comprehensive review on the recycling technology of silicon

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Recycling PV panels through e-waste management is crucial step in minimizing the environmental impact of end-of-life PV systems such as the release of heavy metals into the environment. At the end of 2016, the Government of Japan estimated an increment in the production of solar panels from 10,000 tonnes to 80,000 tonnes by the end of 2040



### Advanced Technology for Recycling Photovoltaic Panels

In collaboration with the New Energy and

**ESS**



Industrial Technology Development Organization(NEDO), Tokuyama Corporation aims to create a recycling business to process waste photovoltaic panels and recover high-quality components to ...

**Japan issues guidelines on 'proper disposal' of used**

The Japan Photovoltaic Energy Association (JPEA) has published voluntary guidelines on how to properly dispose of end-of-life solar PV modules. disposal, japan, jpea, nedo, pv recycling. Read



**Progress in Diversifying the Global Solar PV Supply Chain**

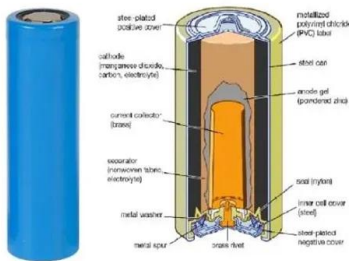
3 ???· This report analyzes progress in diversifying the global solar PV supply chain. It finds that efforts to expand crystalline silicon manufacturing in the United States, Europe, Southeast Asia, and India, as well as improvements in recycling and the emergence of perovskite - pioneered by Japan, make the solar PV supply chain more robust.

**Solar Panel Recycling Could Soon Be Mandatory in Japan; Mass ...**

The government plans to make it mandatory to recycle solar panels, it has been learned. While the number of solar panels in Japan began increasing in the late 2010s, many of them will

reach the

**FLEXIBLE SETTING OF  
MULTIPLE WORKING MODES**



**Technological Advancement in Solar Photovoltaic Recycling: A**

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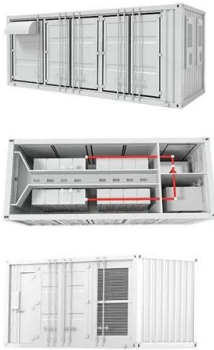
This review examines the technological surveillance of photovoltaic panel recycling through a bibliometric study of articles and patents. The analysis considered the number of articles and patents published per year, per country, and, in the case of patents, per applicant. This analysis revealed that panel recycling is an increasingly prominent research area. ...

**Photovoltaic Panels End-of-Life Recycling , SpringerLink**

In 2018, photovoltaics became the fastest-growing energy technology in the world. According to the most recent authoritative reports [], the use of photovoltaic panels in 2018 exceeded 100 GW (Fig. 2 []). This growth is due to an increasingly widespread demand leading at the end of 2018 to add further countries with a cumulative capacity of 1 GW or more, to the ...



**Japan Solar Panel Recycling Mandate to enhance sustainability**



Japan Solar Panel Recycling is set to introduce a groundbreaking recycling mandate for solar panels, addressing the anticipated surge in decommissioned panels around the mid-2030s. This initiative is a crucial component of Japan's strategy to promote sustainability and responsibly manage waste from the growing solar industry.

## Japan updates its guidelines for recycling of photovoltaic systems

On Aug. 22, 2024, Japan's Ministry of the Environment released the third edition of its guidelines for the recycling of photovoltaic (PV) systems. The new edition has been developed by revising the second edition of the guidelines released in 2018, based on an intermediate report published in January 2024 by the Study Council for the Disposal

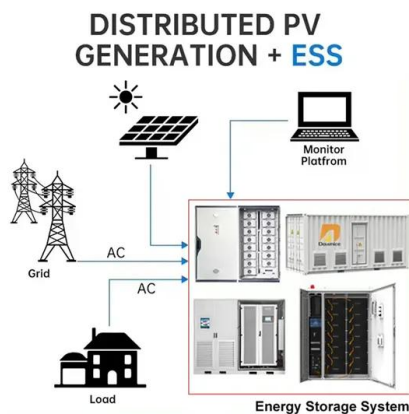


## Smart and sustainable technologies for recycling photovoltaic ...

Different methods of recycling the photovoltaic panels mentioned in the literature (Libby et al., 2018; Garlapati, 2016; Latunussa et al., 2016) andra et al. (2019) presents the management of PV cell modules in an eco-sustainable two-stage thermal process. However, individual merits and demerits exist in the recent view's first solar proposed chemical treatment ...

## Status of PV Module Recycling in Selected PVPS IEA PVPS ...

The questionnaire for PV module recyclers in Japan was conducted by the Japan Photovoltaic Energy Association and Mizuho Research & Technologies, Ltd., under the NEDO project. by PV recycling plants included in this survey is a few thousand tons/year, with most plants below 1 000 tons/year. Comparatively, in most plants, the actual t



## Recycling of photovoltaic modules for recovery and repurposing ...

The United States, Europe, and Japan are countries where significant recycling of photovoltaic modules is progressing [3]. Rethink, Refuse, Reduce, Reuse, Redesign, Repurpose, and Recycle (7 R's) are steps of the recycling e-waste strategy [4]. Recycling of PV comprises repairing, direct reuse, and recycling of materials chemically and mechanically from different ...

## End of Life Management of Photovoltaic in PV Module

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