

**СЕКЦІЯ 16. ПРИРОДООХОРОННІ ТЕХНОЛОГІЇ,
ПРОФЕСІЙНА БЕЗПЕКА ТА ЗДОРОВ'Я**

**OPPORTUNITIES FOR PHOTOVOLTAIC MODULES RECYCLING
PROCESS IMPROVEMENTS**

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Photovoltaic (PV) technology is one of the most promising technologies for enhancing energy security and softening climate change. Globally, there has been significant growth in the PV sector and Ukraine has also seen substantial growth in it as well. In the period from 2015 to 2019 alone, the capacity of solar energy facilities in Ukraine has quadrupled. [1]

However, as the number of solar installations has increased, so too has the number of solar panels that have reached their end of life (EOL). With this in mind, it is becoming increasingly important to improve the recycling efficiency of EOL solar panels.

There are a few areas for PV modules recycling process improvements, but the main aims are: higher recovery rate, higher quality of recovered materials, higher reuse for recovered materials in PV sector, higher environment-friendly and economical rates.

Firstly, most recycling facilities in EU have a recovery rate of about 80%, but even today with the usage of the latest technology recovery rates of 90 – 95% are already achievable. When it comes to improving the quality of the recovered materials, the most important thing in this is the approach where recovered materials should be recycled into products for which the quality and value are equal to or higher than the original materials. Ideally, the materials recovered should be used in PV modules as much as possible to promote circular economy. These approaches helps to increase both economical rates and environmental safety.

Overall, the recycling of EOL PV modules has already become an influential branch in environmental protection sector and so new technologies that improve process efficiency, economics, recovery and recycling rates, and environmental performance gradually increase their importance.

References:

1. Інформація щодо потужності та обсягів виробництва електроенергії об'єктами відновлюваної електроенергетики, яким встановлено «зелений» тариф (станом на 01.10.2019): <https://saee.gov.ua/sites/default/files/VDE%20III.pdf> (дата звернення 13.03.2021)