



PRESS RELEASE

Solar PV Recycling Offers Significant Untapped Business Opportunity, New Report Shows

Technical potential of materials recovered from end-of-life solar PV panels could exceed \$15 billion by 2050

Munich, Germany, 20 June 2016 – The global solar photovoltaic (PV) boom currently underway will represent a significant untapped business opportunity as decommissioned solar panels enter the waste stream in the years ahead, according to a report released today by the International Renewable Energy Agency (IRENA) and the International Energy Agency’s Photovoltaic Power Systems Programme (IEA-PVPS).

The report, *End-of-Life Management: Solar Photovoltaic Panels*, is the first-ever projection of PV panel waste volumes to 2050 and highlights that recycling or repurposing solar PV panels at the end of their roughly 30-year lifetime can unlock a large stock of raw materials and other valuable components. It estimates that PV panel waste, comprised mostly of glass, could total 78 million tonnes globally by 2050. If fully injected back into the economy, the value of the recovered material could exceed USD 15 billion by 2050. This potential material influx could produce 2 billion new panels or be sold into global commodity markets, thus increasing the security of future PV supply or other raw material-dependent products.

“Global installed PV capacity reached 222 GW at the end of 2015 and is expected to further rise to 4,500 GW by 2050. With this tremendous capacity growth will come an increase in waste associated with the sector,” said IRENA Director-General Adnan Z. Amin. “This brings about new business opportunities to ‘close the loop’ for solar PV panels at the end of their lifetime. To seize these opportunities, however, preparations for the surge in end-of-life material should begin now.”

“With the right policies and enabling frameworks in place, new industries that recycle and repurpose old solar PV panels will drive considerable economic value creation and will be an important element in the world’s transition to a sustainable energy future,” added Mr. Amin.

The report suggests that addressing growing solar PV waste, and spurring the establishment of an industry to handle it, would require: the adoption of effective, PV-specific waste regulation; the expansion of existing waste management infrastructure to include end-of-life treatment of PV panels, and; the promotion of ongoing innovation in panel waste management.

“Experience with electronic waste tells us that developing technological and regulatory systems for efficient, effective and affordable end-of-life management requires long lead



times, said Stefan Nowak, Chairman of IEA-PVPS. “This timely report can be used by public and private sector institutions to anchor the necessary investments in technology and policy research and development and supporting analyses to unlock the significant recoverable value in end-of-life panels.”

“Responsible life-cycle management is an imperative for all PV technologies – the socio-economic and environmental benefits which can potentially be unlocked through end-of-life processes and policies for this waste stream in the future should be seen as an opportunity today to start extending the photovoltaic value chain,” added Mr. Nowak of IEA-PVPS.

In most countries, PV panels fall under the classification of “general waste” but the European Union (EU) was the first to adopt PV-specific waste regulations, which include PV-specific collection, recovery, and recycling targets. EU’s directive requires all panel producers that supply PV panels to the EU market (wherever they may be based) to finance the costs of collecting and recycling end-of-life PV panels put on the market in Europe.

End-of-Life Management: Solar Photovoltaic Panels, is the second of several solar-focused publications IRENA is releasing this summer. Last week, IRENA released *The Power to Change*, which predicts average costs for electricity generated by solar and wind technologies could decrease by between 26 and 59 per cent by 2025. Later this week, IRENA will release *Letting in the Light: How Solar Photovoltaics Will Revolutionize the Electricity System* – which provides a comprehensive overview of solar PV across the globe and its prospects for the future.

Download *End-of-Life Management - Solar Photovoltaic Panels*: <http://bit.ly/1UQcAh5>
Details on the *End-of-Life Management* panel at InterSolar Europe: <http://bit.ly/24vtIex>

Download *the Power to Change*: <http://bit.ly/233POFO>

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About the International Renewable Energy Agency (IRENA)

IRENA is mandated to be the global hub for renewable energy cooperation and information exchange by 148 Members (147 States and the European Union). Roughly 28 additional countries are in the accession process and actively engaged. IRENA promotes the widespread adoption and sustainable use of all forms of renewable energy, in the pursuit of sustainable development, energy access, energy security and low-carbon economic growth and prosperity. www.irena.org

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About IEA PVPS

The IEA Photovoltaic Power Systems Programme (IEA PVPS) is one of the collaborative R&D Agreements established within the IEA and, since its establishment in 1993, the PVPS



participants have been conducting a variety of joint projects in the application of photovoltaic conversion of solar energy into electricity. The 29 PVPS members are: Australia, Austria, Belgium, Canada, China, Denmark, European Union, Finland, France, Germany, International Copper Alliance, Israel, Italy, Japan, Korea, Malaysia, Mexico, Netherlands, Norway, Portugal, SEIA, SEPA, SolarPower Europe, Spain, Sweden, Switzerland, Thailand, Turkey, and the United States. More information can be found at: <http://www.iea-pvps.org/>.

PVPS's Task 12, focusing on environmental, health and safety aspects, has long addressed life cycle sustainability of PV. In preparation by Task 12 is a report assessing trends in international public and private sector investments in PV recycling technologies. Methodological guidelines for [life cycle assessment](#) and [net energy analyses](#) of PV systems are other flagship products of Task 12.

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