

The elephant in the green energy room – solar, wind power waste

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Solar and wind power are both sources of 'green energy,' however, this does not mean that these forms of energy generation have no impact on the environment.

"On the contrary, very large amounts of waste need to be disposed of when solar panels and wind turbines reach their end of life," warns Patricia Schröder, spokesperson for the Producer Responsibility Organisation (PRO), Circular Energy. "Discussions about solar and wind power waste and energy generation must all take place around the same stakeholder tables, especially with the government's focus on renewable energy in the wake of the Eskom crisis."

Waste prevention — better than cure

Schröder believes that steps must be taken right away to avert future disasters, "According to research by the International Renewable Energy Agency, South Africa will have accumulated between 750 000 and 1 million tons of PV waste by 2050. The researchers correctly point out that, if badly designed and managed, this could cause significant environmental harm."

Photovoltaic panels and wind turbines are both tough to break down and can't be readily recycled.

"Modern Solar PV units contain several toxins and metals, like lead and cadmium, that are exceedingly dangerous for both the environment and human health. When used solar panels are dumped into landfills, such materials swiftly flow down into groundwater."

Schröder adds that South Africa does, in fact, have the necessary recycling capacity. However, for this to succeed, waste volumes must be diverted to PRO-accredited service providers to be legally managed in an environmentally sound manner. Furthermore, industry support and buy-in to the 'take-back systems' will change the current status of an alarmingly low compliance rate to the Extended Producer Responsibility (EPR) Regulations of these industries.

"To maximise recycling or the reuse of solar PV and wind components, local manufacturing capacity must be expanded. Developing both recycling and local manufacturing capacity can help objectives of a just transition, such as job creation across the renewable energy value chain."

She adds that researchers encourage the development of recycling systems and strategies in the meantime. "This includes enhancing recycling systems, making public investments in recycling infrastructure and providing incentives to manufacturers and Eskom to increase its capacity for recycling."



Identifying legitimate service providers

Schröder says the Department of Forestry, Fisheries and the Environment has useful guidelines that state the obligations of PROs, and their waste management schemes.

“They must develop a system to collect the EPR fees, maintain a register of its members and conduct internal and external financial audits and submit these to the department,” she notes.

Furthermore, legitimate service providers should upload an External Audit Report to the SA Waste Information Centre (SAWIC) for public access; collect, record, manage and submit data to the South African Waste Information System and finally liaise with the downstream value chain for services to ensure that the contracting process is fair and transparent.

“When all role players work together, green energy systems can cause as little harm as possible to the environment during their complete life cycle – not just while they generate electricity,” Schröder concludes.

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