

Addressing the elephant in the 'green energy' room - solar and wind power waste

While solar and wind power are both considered 'green' sources of energy, a linear life cycle of their components can negatively impact the environment.



Source: Gallo/Getty

“Very large amounts of waste need to be disposed of when solar panels and wind turbines reach their end life,” warns Patricia Schroder, 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 is better than cure

According to Schroder, steps have to 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 in landfills, such materials swiftly flow down into groundwater.”

Schroder 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 EPR regulations of these industries.

“To maximise recycling or the reuse of solar PV and wind components, local manufacturing capacity needs to 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 our waste management systems, making public investments in recycling infrastructure, and providing incentives for the private sector and Eskom to increase its capacity for recycling.”



Nigerian company turns e-waste into solar-powered lanterns

Angela Ukomadu 13 Oct 2022



How can producers identify legitimate service providers?

Schroder 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 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 its complete life cycle - not just whilst it generates electricity,” Schroder concludes.