

Why SA's green energy transition must include plans for waste disposal

As South Africa accelerates its transition away from coal toward renewables, independent power producers must ensure they have the right systems in place to dispose of wind, solar and associated storage equipment reaching the end of its life cycle.



Source: Sandor Jackal © za.fotolia.com

This is according to Patricia Schröder, spokesperson for the producer responsibility organisation (PRO) Circular Energy. She says it is crucial that plans to increase the country's use of renewable energy also cover waste management.

"Our commitment to sustainability cannot simply focus on how we generate energy but must extend across the entire energy value chain," Schröder explains.

Renewable energy does generate waste

As countries around the world have increased their capacity to generate renewable energy in recent years, the volume of used wind and solar power and storage equipment that needs to be disposed of, has also steadily increased. This equipment typically has a lifespan of between 15 and 30 years, requiring power producers to plan well beyond their immediate waste disposal needs.

The International Renewable Energy Agency (Irena) has estimated that globally, photovoltaic panels used to generate solar power may create a cumulative 60 to 78 million tons of waste by 2050. Irena estimates that in South Africa, this number could amount to 1 million tons by that same year.



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Renewable equipment can be recycled

Schröder says producers must use the time at their disposal to consider the best solutions for the future disposal of the equipment they install now. However, producers already have existing obligations under the Extended Producer Responsibility (EPR) Regulations, which came into effect in May 2021.

These regulations aim to ensure that producers are accountable for the entire life cycle of the products they place on the market, from conception to post-consumer waste disposal.

Schröder says South Africa does have the capacity to recycle solar and wind generation and storage equipment. Between 80% and 90% of a wind turbine can be recycled, including the concrete and steel used to build turbine towers. Similarly, the glass and aluminium frame of a solar panel makes up more than 80% of its weight and both these materials can easily be recycled. Battery storage systems of all chemistries are recycled in South Africa.

Compliance with EPR regulations will help to ensure that equipment at the end of its life cycle is channelled to the appropriately licenced facilities.



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Impact on environment

“Without the correct systems in place, the very same equipment that was designed to be green can end up having a very detrimental impact on the environment,” Schröder says.

Circular Energy wants to help producers to care for the environment through a multi-faceted, best-practice strategy, she says: “PROs like Circular Energy can offer producers advice and services to help them to comply with regulations and contribute to putting in place the concept of a circular economy that can unlock opportunities for growth and employment.”