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# Shift to renewable energy must include plans for waste disposal

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As South Africa increasingly looks to renewables to help address the country's chronic energy crisis, independent power producers must ensure they have the right systems in place to dispose of wind and solar energy and associated storage equipment reaching the end of its life cycle.

World leaders attending the recent United Nations Climate Change Conference (COP27) have praised South Africa's Just Energy Transition Investment Plan (JET-IP), which outlines planned investment to accelerate the country's shift away from coal.

Patricia Schröder, the spokesperson for the producer responsibility organisation (PRO) Circular Energy, 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***

Wind and solar power and storage equipment typically have a lifespan of between 15 and 30 years, requiring power producers to plan well beyond their immediate waste disposal needs.

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

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.

***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% of 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. "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.