

RENEWABLE ENERGY COSTS LESS BY FAR

- MAKING IT THE LOGICAL CHOICE!

South Africa should urgently restart its large scale renewables industry in order to benefit from the continued decline in renewables prices achieved globally and grow its green economy industrial base.

While South Africa's renewables programme has been stalled over the past three years, falling prices for renewable power has led to exponential growth in investment and an accelerated Energy Transition globally.

The Energy Transition is punctuated by two critical tipping points. The first being when **new renewables become cheaper than new thermal generation technologies**. South Africa has already moved past that point: the Department of Energy confirmed that the November 2015 Expedited Round bids for wind and solar power were 62c/kWh (2016 ZAR), significantly cheaper than new coal IPPs at around R1.03/kWh (2016 ZAR). In fact, the costs of new wind and solar PV power is even lower than Eskom's 2016/17 average price of electricity, by 20%.

The second tipping point happens when **new renewables become cheaper than running existing thermal plant**. Big energy hubs like the US, China and Germany are expected to reach this point by the early 2020s. A recent study published by leading national consultancy Meridian Economics concluded that Eskom's growing surplus capacity accelerated the transition in relative energy economics and that the country has already crossed over this tipping point: it will be cheaper to close Eskom's older power stations and rely on a combination of power from its newer (and more efficient) coal plant and new renewables.

South African electricity consumers would be better off if between three and five of Eskom's oldest coal stations were shut down as soon as possible, rather than operated to their scheduled end-of-life, and the country's energy needs were instead met by new renewable power producers.

The government's REI4P has also contributed to the decline in renewables prices, through its competitive auctions, a successful model that has been implemented in SA since 2011. This national competitive auction programme has resulted in the procurement of 6.3 GW of independent renewable power projects, of which half had been connected to the grid by the end of 2017. As a result of this consistent procurement, an entirely new green economy industry was spawned in South Africa, creating thousands of new jobs.

The tired, old critique that renewable power will reduce power system reliability is now completely debunked by sophisticated computer models run by both Eskom and numerous independent analysts. These models optimise the mix of generation choices to ensure a level of security of supply that is equivalent or even superior to what is currently achieved. The results consistently confirm that on a least-cost path most of South Africa's new capacity will be renewable, with some system support from gas turbines, and a growing role for energy storage.

It is worth considering that the CSIR and other research institutes have conclusively demonstrated that the option of new wind, solar PV and flexible generation capacity in South Africa delivers the least-cost electricity price trajectory in the years ahead to 2050 and beyond, as well as least water consumption, lowest carbon emissions and the most jobs.