

## **Offshore wind opportunities for South Africa**

Gareth Erfort, Kittessa Roro

Meiring Naudé Road; Brummeria; Pretoria; South Africa

[gerfort@csir.co.za](mailto:gerfort@csir.co.za), [kroro@csir.co.za](mailto:kroro@csir.co.za)

South Africa has an ageing coal power fleet, which will gradually be decommissioned over the next 30 years. This creates substantial opportunity for a just transition towards a future energy mix with a high renewable energy penetration. Offshore wind technology is a clean electricity generation alternative that presents great power security and decarbonisation opportunity for South Africa. The global offshore wind energy market is growing rapidly while the cost of the technology - involving both shallow water 'fixed-bottom' and deeper water 'floating' substructures - is dropping significantly

Studies have estimated the offshore wind energy resource available within South Africa's exclusive economic zone (EEZ), using a geographic information system methodology.

Offshore wind could realistically only enter the local energy mix in the medium and long term, based on typical project development timelines. Suitable offshore wind development regions were identified along the countries east and west coast. Based on South Africa's annual electricity consumption of 297.8 TWh in 2018, OWE could theoretically supply between 15% and 800% of South Africa's annual electricity demand with offshore wind.