WINDAC AFRICA

BREAK THE GRIDLOCK!
WIRE FOR GROWTH!

SAWEA
South African Wind Energy Association

21 - 23 OCTOBER 2025
8:00 am – 5:00 pm

CAPE TOWN, SA
CTICC 2

2025 PRESENTATION

Prioritising the allocation of funding for Cape Vulture electrocution mitigation in South Africa – A case study of the Renewable Energy Development Zones

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23 October 2025

SPEAKER **OVERVIEW**

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Based on work done by the EWT of the DFFE REDZs Extension SEA

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PRESENTATION **OVERVIEW**

01 • BACKGROUND AND INTRODUCTION

02 • METHODS

03 • FINDINGS

04 • NEXT STEPS

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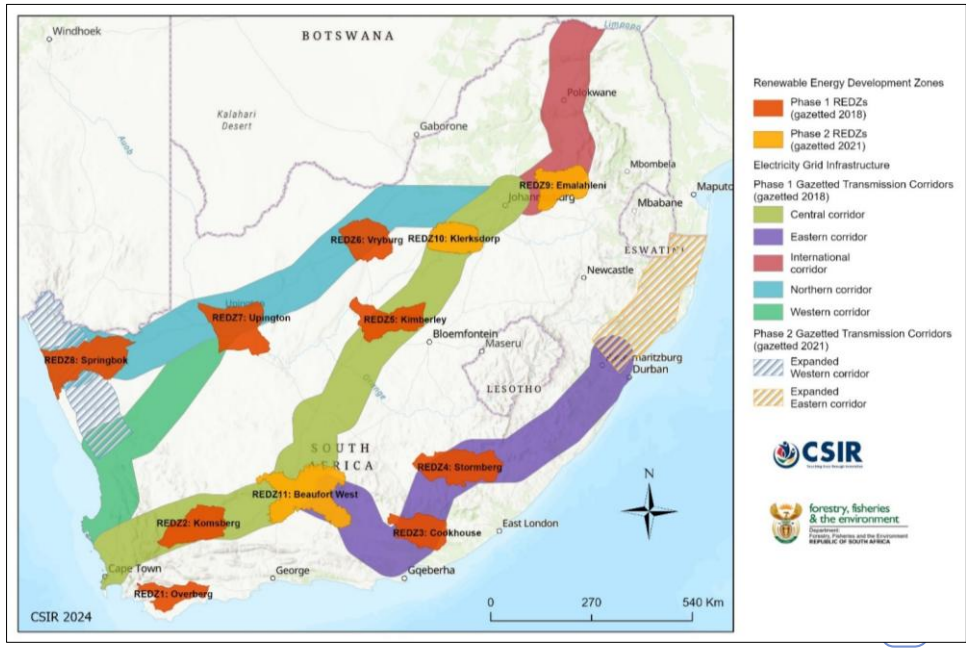
BACKGROUND AND CONTEXT

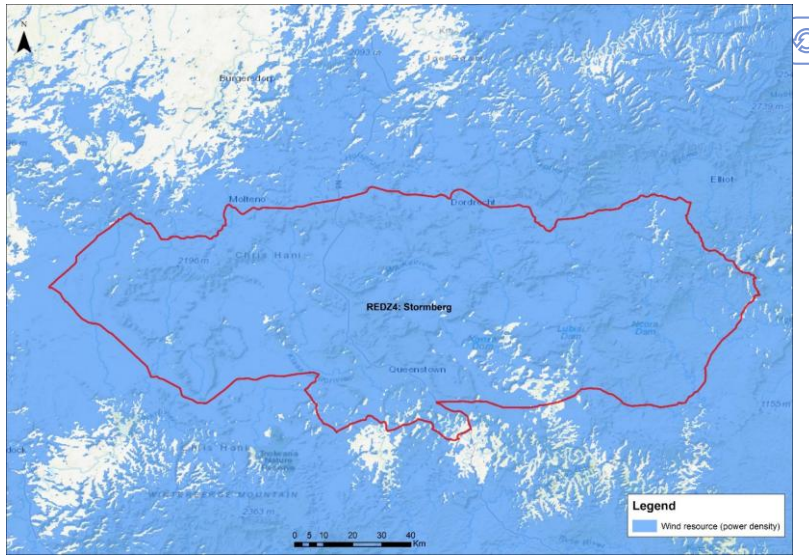
- The aim of the study is to support the **strategic planning** for renewable energy projects in support of the energy transition by analysing relevant policy interventions, **reviewing and critically synthesizing opposition** to renewable energy deployment, assessing the **options for multifunctional landscapes** and **identifying funding models** for the **mitigation of impacts** on **biodiversity**, particularly collision prone raptors to guide investment in a manner that social and environmental outcomes are considered in the energy transition in SA.

Objective 1	Objective 2	Objective 3	Objective 4
To investigate the role of the Strategic Environmental Assessments in spatially prioritising and coordinating large scale renewable energy developments in South Africa.	To critically review the contestations to renewable energy developments in the South Africa	To map competing land uses in effort to propose a framework for the implementation of multifunctional land uses in South Africa	To collaboratively determine a funding model for retrofitting high collision risk electricity grid infrastructure in an effort to mitigate existing and potential future impacts for of renewable energy development on birds

BACKGROUND AND CONTEXT

- Renewable energy developments = decentralised, low carbon energy production
- The primary energy planning policy - the Integrated Resource Plan (IRP), 2019
- The IRP details the RE targets for RSA by 2030.
- 17 742 MW new wind by 2030
- Eastern Cape Province has favourable wind resource and a high socioeconomic need for development



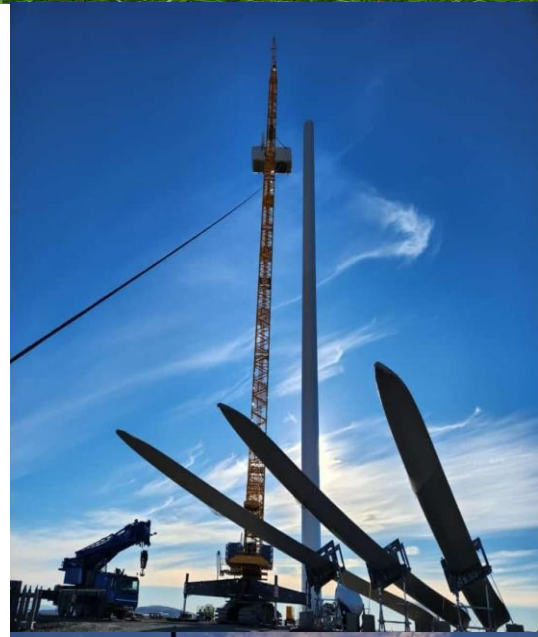


BACKGROUND AND CONTEXT

- There are growing concerns on the challenges to biodiversity loss and ecosystem health linked to RE
- Great wind resource areas often overlap with biodiversity rich areas
- Eastern Cape Province is home to the Cape Vultures (*Gyps coprotheres*)
- Cape Vultures are at risk: electrocution and collision with powerlines
- 538 Cape Vulture mortalities from electrocution and/or collision in 50km of the Renewable Energy development Zones (REDZs) (EWT, 2025)
- Eastern Cape Province, is a good case that exemplifies the tensions and opportunities for planning for renewable energy development and biodiversity conservation

BACKGROUND AND CONTEXT

- Retrofitting powerlines is expensive and falls outside the mandate of Independent Power Producers (IPPs)
- The National Transmission Company South Africa (NTCSA) not including retrofitting as part of its budget
- This presents a clear gap in fund raising for retrofitting lines to lower the electrocution risk for Cape Vultures and leads to fragmented mitigation measures
    - Retrofitting is currently adhoc with no central, transparent management and monitoring of retrofitted lines
    - There is no common understanding of which lines present the highest risks and which should be prioritised for maximum impact
- Draws on the work from EWT as part of the DFFE SEA which mapped the powerlines in the Eastern Cape REDZs which have had the most Cape Vulture electrocution incidents
- The study identifies priority/high risk powerlines be retrofitted for maximum impact



RESEARCH OBJECTIVES

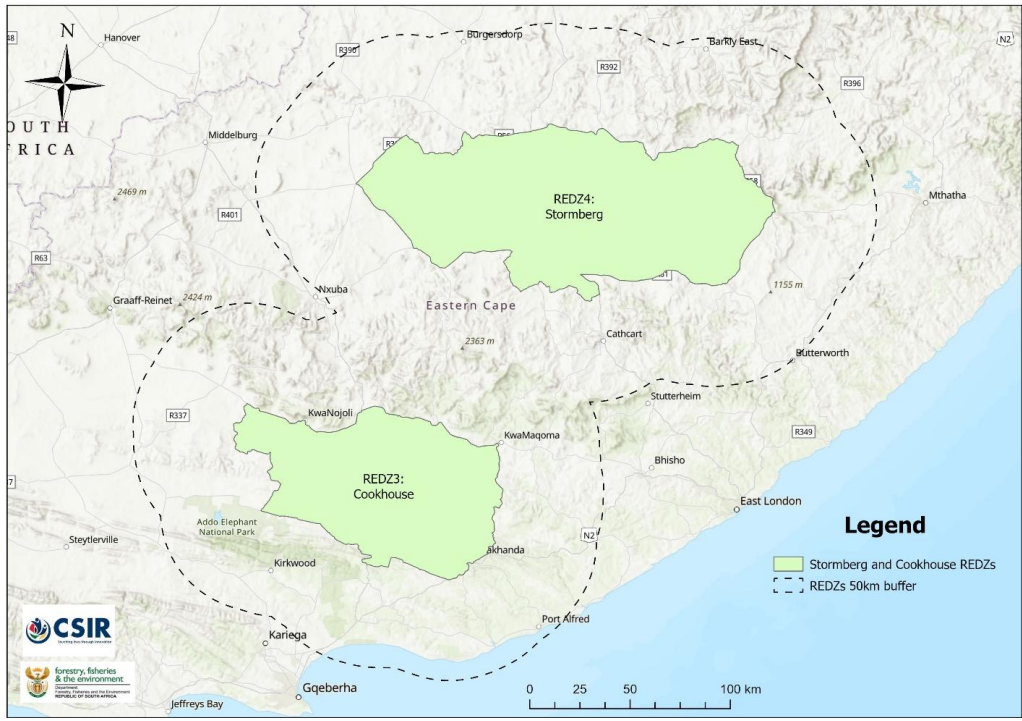
- This research explores the feasibility of a pooled mitigation fund for retrofitting high risk powerlines in the Eastern Cape
- The research does this by:
  - Proposing a method to calculate the minimum contribution for retrofitting powerlines by wind energy developments as a percentage of project revenue
  - It further proposes governance methods for the implementation of the retrofits in a coordinated and systematic manner for greater impact on the conservation of the CV species

PRIORITISING FUNDING METHODS

- Step 1 – Use SEA mapping for mapping high risk lines
- Step 2 - Determine funding targets for priority lines
- Step 3 – Determine contribution percentage
- Step 4 - Work out the governance

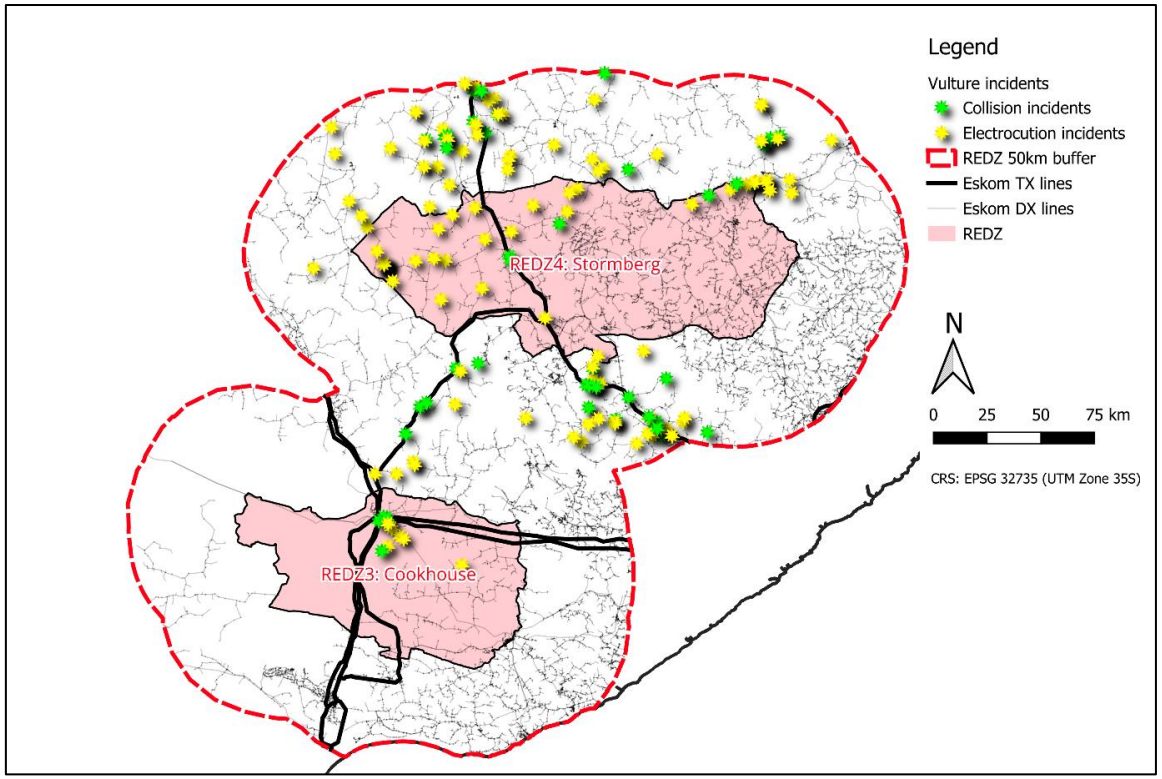
MAPPING HIGH RISK LINES (STEP 1) – STUDY AREA

- The aim of the study was to identify and prioritise opportunities for applying mitigation measures intended to reduce Cape Vulture electrocutions in, and around the Stormberg and Cookhouse REDZs. Specifically, to:
  - Identify the distribution pole structure types within the study area
  - To prioritise power line sections for mitigation
  - To determine the extent and status of existing electrocution mitigation measures
  - To provide a cost estimate for applying the mitigation



MAPPING HIGH RISK LINES - METHODS

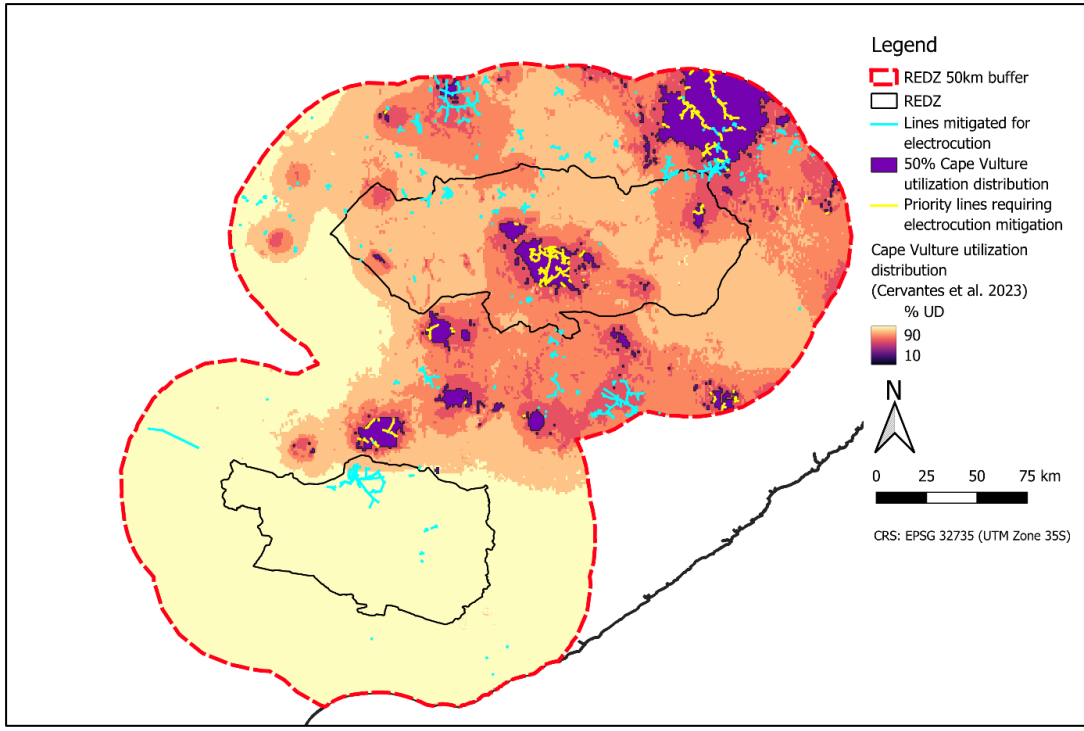
- Four different data sources to classify and prioritise power line sections for mitigation were used:
  - Previous records of Cape Vulture incidents from the Central Incidence Record;
  - A mitigation database collating information about recommended mitigation measures for previous incidents;
  - A published population utilization distribution for the Cape Vulture;
  - Information obtained from site visits (June 2024)
- Mitigation was prioritised based on the size and location of breeding colonies.



MAPPING HIGH RISK LINES - RESULTS

- The results illustrated significant overlap between high-use vulture areas and the REDZs in the Eastern Cape.
- Cape Vulture collision and electrocution hotspots were found to be within 15 km to 30 km from known breeding colonies
- A total of 178 vulture incidents were recorded on the CIR within 50 km of the Stormberg REDZ and Cookhouse REDZ, which included 538 individual mortalities

Mitigation required according to structure configuration	Number of poles	
	Validated poles	Estimated poles
Replace with bird friendly design		
T-pole	504	165
Staggered Vertical	135	45
Two-phase Horizontal	229	75
Retrofit (raptor protectors, cut BIL gap, anti-perch devices, jumper insulation)		
H-pole	144	48
Delta T-pole	104	34
Wood Monopole	139	46
Transformer	179	60
No action (unless BIL not cut)		
Inverted T-pole	429	142
Total	**1863**	**615**



FUNDING TARGETS (STEP 2)

- **REI4P:**
- Determined contributions for social and economic development within 50 km radius of the project
- This determination is based on a 1.5% target of project revenue annually (1% as a minimum)
- **Contribution basis:**
- Could there be a fund that mirrors SED contribution in REI4P? – Environmental justice should also form part of mainstreamed contributions
- **Define target amount**
  - On average costs per pole ~ ZAR 132 000 ($7 500)
  - 754 poles identified as priority to retrofit in the study area

Metric	Value
Poles	754
Unit cost (ZAR/pole)	132 000
Subtotal (ZAR)	99 528 000
Contingency (10%)	9 952 800
VAT (15%)	16 422 120
Total (ZAR)	**125 902 920**

FUNDING CONTRIBUTION (STEP 3) AND GOVERNANCE (STEP 4)

- **Determine project contribution:**
- Proposal is to have this as a portion of the current SED or separate but under 1% contribution over target time
- Type of fund – develop a stand-alone framework or amend EIA regulations
- Contribution could be designed as
  - Flat rate
  - Risk based

- **Governance questions:**
- Governance of the fund and retrofitting
- Monitoring
- Applicability and need for contribution

RISKS

- The fund cannot work retrospectively – wind farms already operational
- Under reporting at powerlines also means other high risk lines could be missed
- There is a need for species threshold studies and regional cumulative impact assessments
- There is a need for need rigorous reporting to quantity averted losses at powerlines

NEXT STEPS

- The development of scenarios for raising costs and mainstreaming finance into IPP project costs
- Interviews with key stakeholders to gather insights
- Obtain revised funding costs from NTC SA for accurate funding estimates

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THANK YOU FOR LISTENING!

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