



forestry, fisheries
& the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

THE EXTENSION OF THE STRATEGIC ENVIRONMENTAL ASSESSMENT TO FACILITATE THE EFFICIENT AND EFFECTIVE IMPLEMENTATION OF WIND AND SOLAR PHOTOVOLTAIC ENERGY DEVELOPMENT IN SOUTH AFRICA – REDZs EXTENSION

Expert Reference Group and Project Steering Committee Meeting

11 October 2023



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Agenda

Topic	Responsibility	Time
Welcome and introductions	Dr Dee Fischer (DFFE) & Paul Lochner (CSIR)	10:00 - 10:15
Summary of the outcomes of the Phase 1 and Phase 2 Wind and Solar PV SEAs Discussion	DFFE: Dr Dee Fischer	10:15 – 10:30
Introduction to the Phase 3 Wind and Solar PV SEA – REDZs Extension <ul style="list-style-type: none">Objectives/Scope of WorkProposed process (including stakeholder engagement)Proposed assessment methodologyPlanned PSC and ERG MeetingsOutputs Discussion	CSIR: Abulele Adams	10:30 - 12:15
Way forward and closure	DFFE: Simon Moganetsi	12:15 – 12:30

Project team and roles

SEA process development and implementation

DFFE

- Dr Dee Fischer
- Simon Moganetsi
- Rhulani Kubayi

CSIR

- Paul Lochner
- Abulele Adams,
- Sonto Mkize
- Phindile Mthembu

Sensitivity mapping and specialist studies

SANBI

CSIR

Specialists team

Consultation and experts' inputs

Working groups:
Conservation
Industry
Vulture
Technical

ERG

PSC

Public

Other key stakeholders eg.
Mining, CAA,
Defense,
Heritage, etc.

Background

SIP	SEA process	Year	Outcome
8	Wind and Solar PV SEA (Phase 1)	2018	Eight Renewable Energy Development Zones
10	EGI SEA	2018	Five Power Corridors
10	EGI SEA	2021	Two Expanded Power Corridors
8	Wind and Solar PV SEA (Phase 2)	2021	Three Renewable Energy Development Zones

Background

National Strategic Environmental Assessments for Renewable Energy Development Zones & Transmission Corridors in South Africa

Renewable Energy Development Zones (REDZ)

Phase 1 REDZ (Gazetted 2018)

Phase 2 REDZ (Gazetted 2021)

Phase 1 Transmission Corridors

(Gazetted 2018)

Central corridor

Eastern corridor

International corridor

Northern corridor

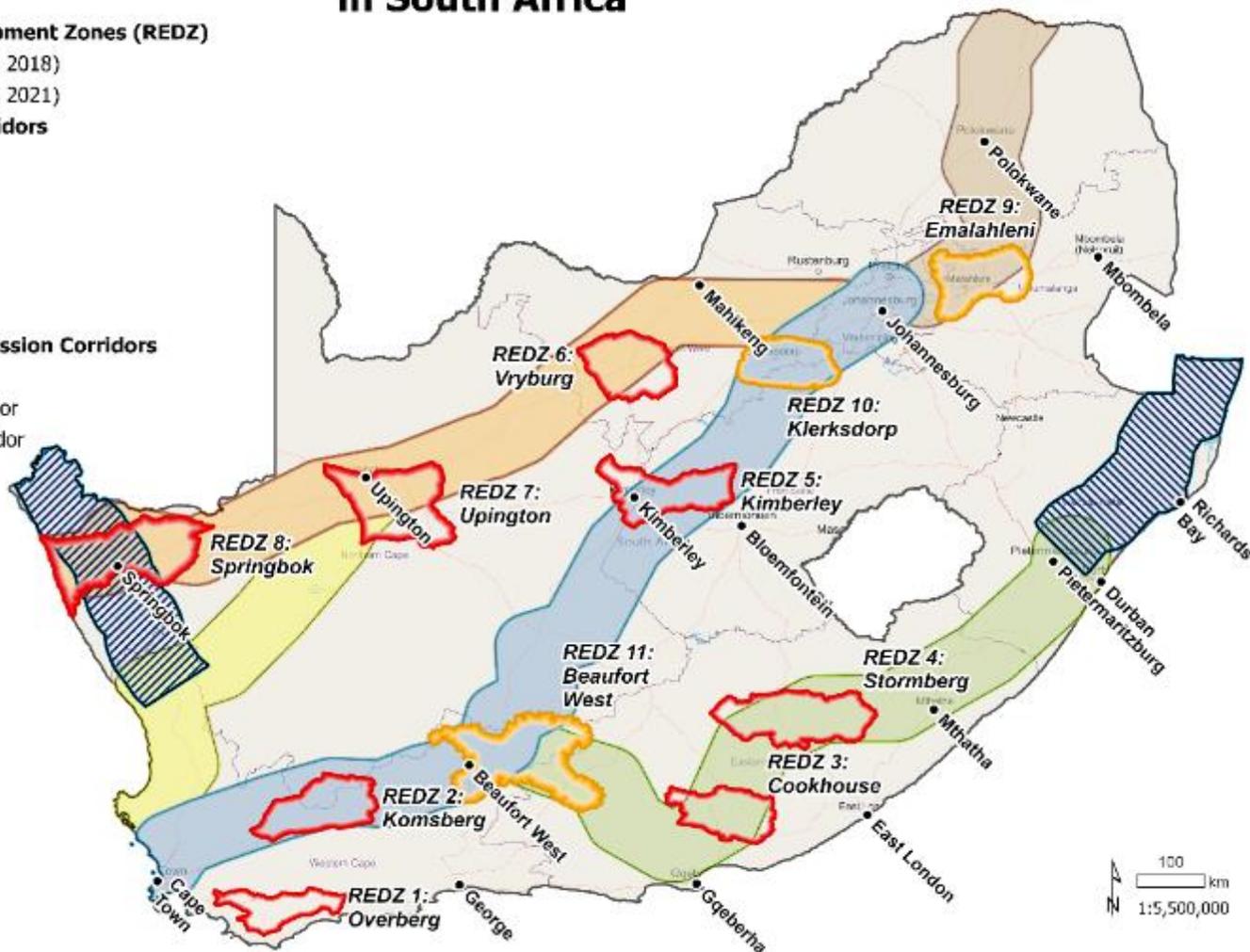
Western corridor

Phase 2 Expanded Transmission Corridors

(Gazetted 2021)

Expanded Eastern corridor

Expanded Western corridor



Scope of Work

- Realigning the boundary of the Beaufort West REDZ;
- Realigning the boundary of the Emalahleni REDZ in Mpumalanga to include recent trends and opportunities such as Eskom's coal-fired power plants being decommissioned and sites being repurposed as part of the Just Energy Transition and green hydrogen initiatives;
- Assessing the Klerksdorp and Emalahleni REDZs suitability to include wind energy technology;
- Reassessing the Kimberley, Vryburg and Upington REDZs for the suitability to include wind energy technology based on the experience of implementing renewable energy projects since 2015; and
- Reviewing the Stormberg and Cookhouse REDZs in the Eastern Cape to identify electricity grid infrastructure which poses an electrocution risk to Cape Vultures and to formulate a mitigation plan.

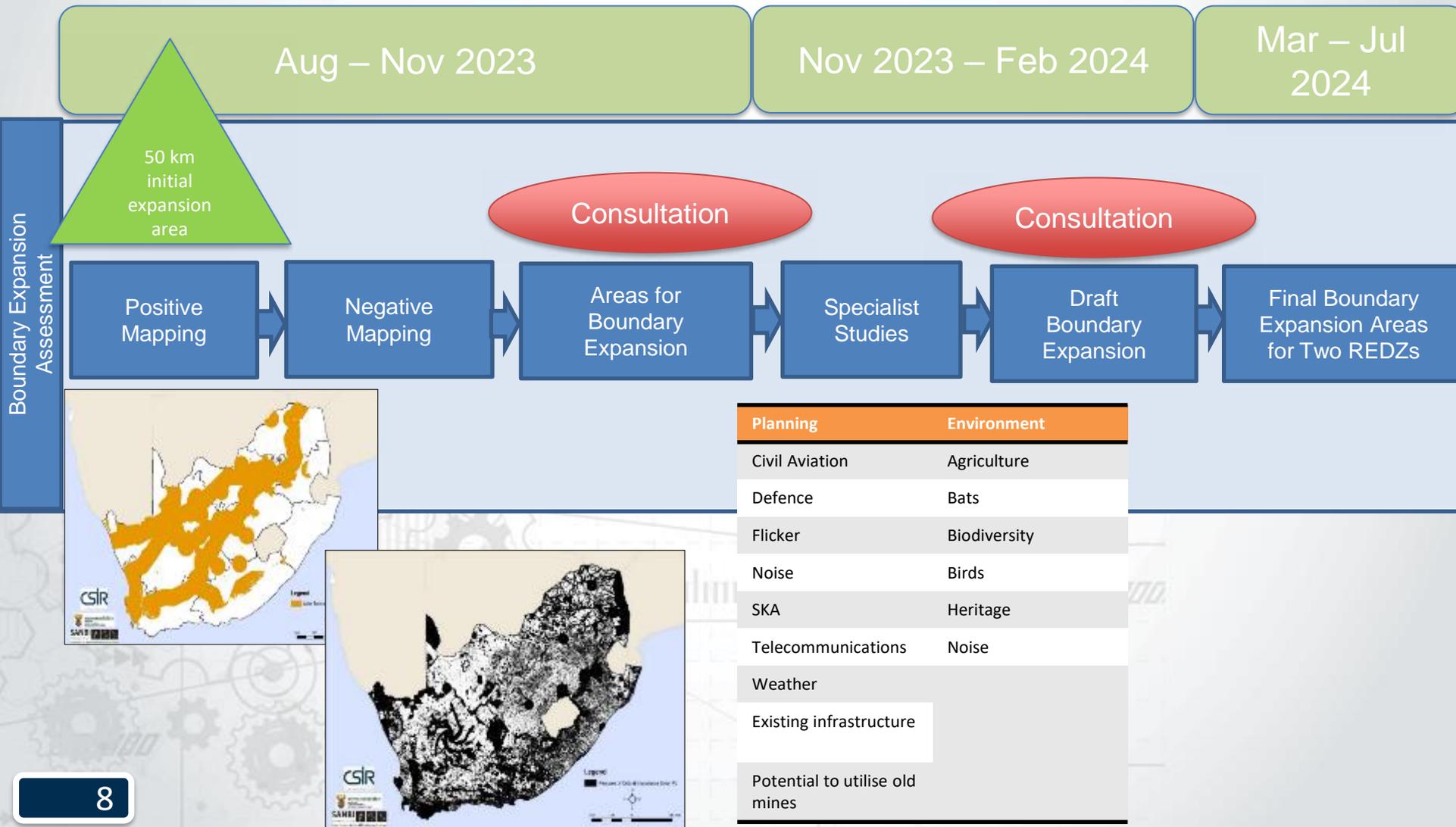
PROPOSED PROCESS



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Study process methods – boundary expansion



Study methods and process– wind assessment

Aug – Nov 2023

Nov 2023 – Feb 2024

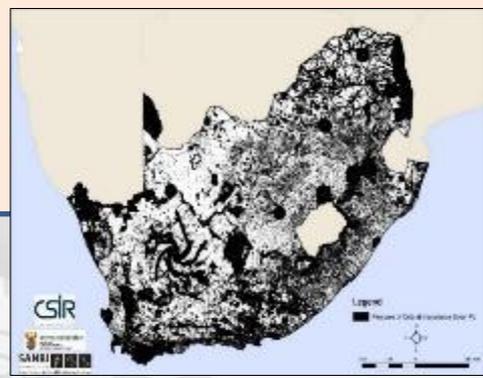
Mar – Jul 2024

Wind Suitability Assessment

Consultation



Resource



Planning	Environment
Civil Aviation	Agriculture
Defence	Bats
Flicker	Biodiversity
Noise	Birds
SKA	Heritage
Telecommunications	Noise
Weather	
Existing infrastructure	
Potential to utilise old mines	

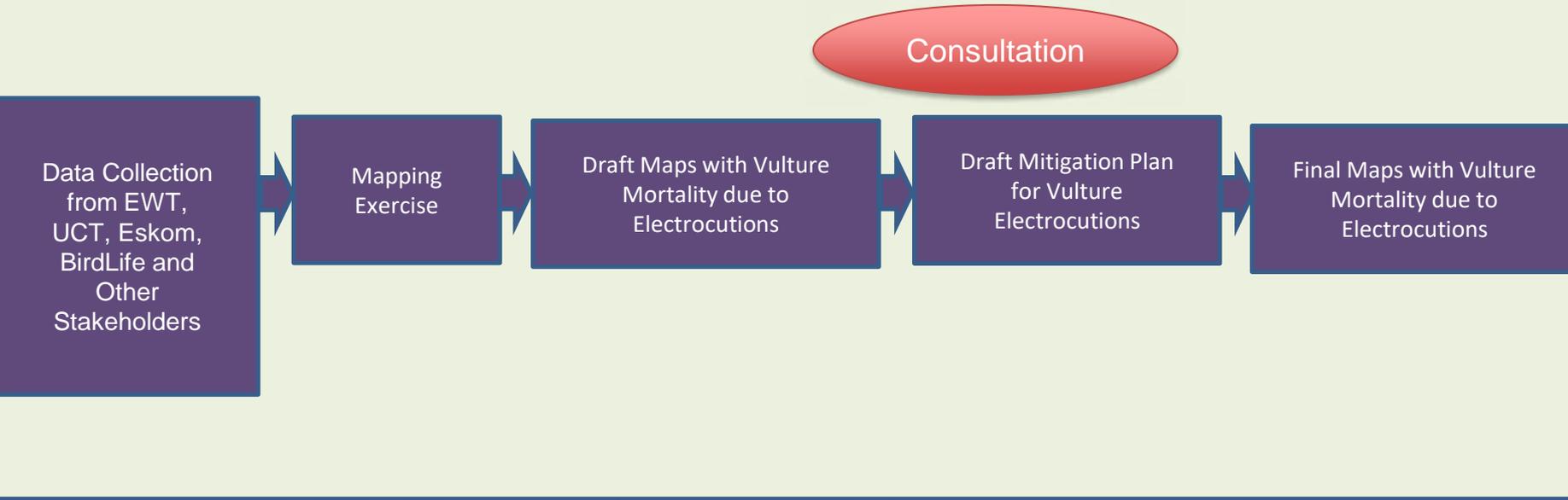
Study methods and process – Vulture Electrocution Mitigation Plan

Aug – Dev 2023

Jan – Mar 2024

Apr – Jul 2024

Vulture Electrocutions Mitigation Plan



TECHNICAL CONSIDERATIONS - BOUNDARY REALIGNMENT



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Technical Considerations – boundary realignment

1. Power Density for wind energy development
2. PV tracking yield dataset for solar PV energy development
3. Network capacity: proximity to existing and planned MTS substations
4. Strategic coordination: REDZs and power corridors
5. Spatial planning: REIPPPP selected preferred bidders and existing approved EIAs for wind and solar PV projects



ENVIRONMENTAL CONSIDERATIONS – BOUNDARY REALIGNMENT



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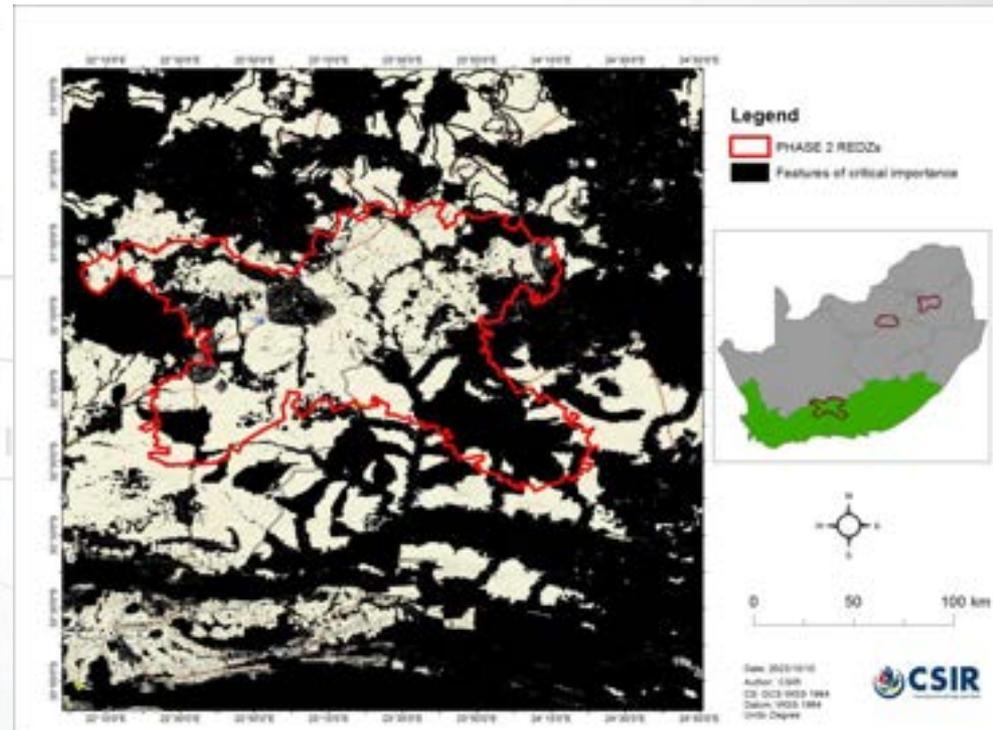
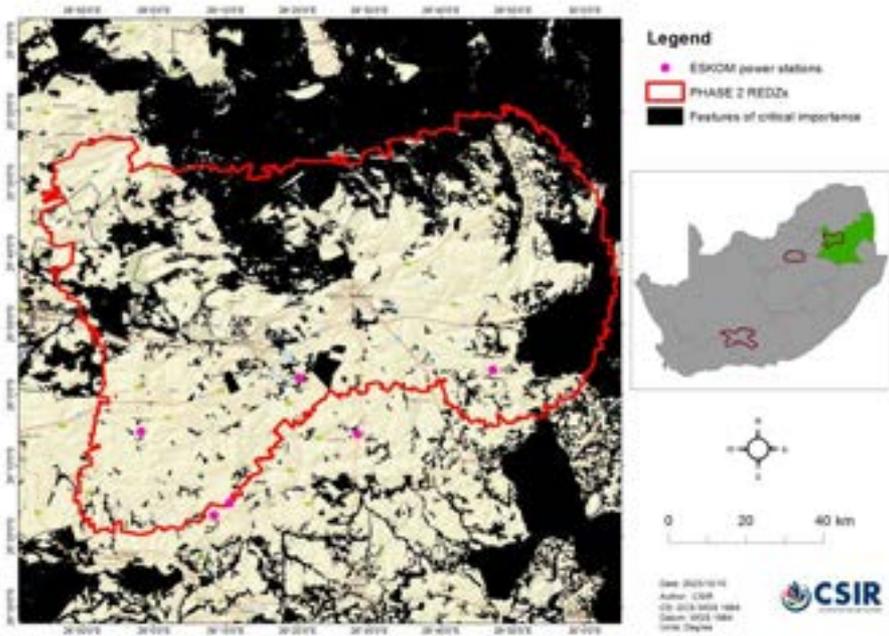
Features of Critical Importance

Criteria	Source	Features	Wind Buffers	Solar Buffers
Protected Areas	South African Protected Areas Database (SAPAD) – Q2, 2023 , South African National Parks (SANParks) and Provincial.	Marine Protected Areas		
		National Parks		
		Nature Reserves		
		World Heritage Sites (Core)		
		Mountain Catchment Areas (Natural)		
		Protected Environments (Natural)		
		Forest Nature Reserve		
		Forest Wilderness Area		
Critical Biodiversity Areas (CBAs)	Provinces	CBA1 only		
Water features	NFEPA	Wetlands (500m) and Major Rivers(32m)		
	CSIR	Estuaries (Floodplain)		
	CSIR	SWSAs (Natural) --> ONLY KEEP SURFACE SWSAs		
Forest	DAFF	Forest		
Square Kilometre Array (SKA) Area	SKA	SKA study Area		
Heritage	SAHR	All grades and declared sites (add UNESCO sites)		
Field Crop Boundaries	DAFF	Pivot, Shadenet, Horticulture and Viticulture		
Land Capability	DAFF	Categories 11-15		
Defence	SANDF	Features		
Birds	VULPRO	VULPRO cape vulture colonies	50km	N/A
		VULPRO cape vulture restaurants	50km	N/A
	NMMU	NMMU cape vulture roost sites	50km	N/A
Bats		Bat Roosts		N/A
		Ecoregions		N/A
		Dolomite and Limestone		
		Dams		
		Vegetation		

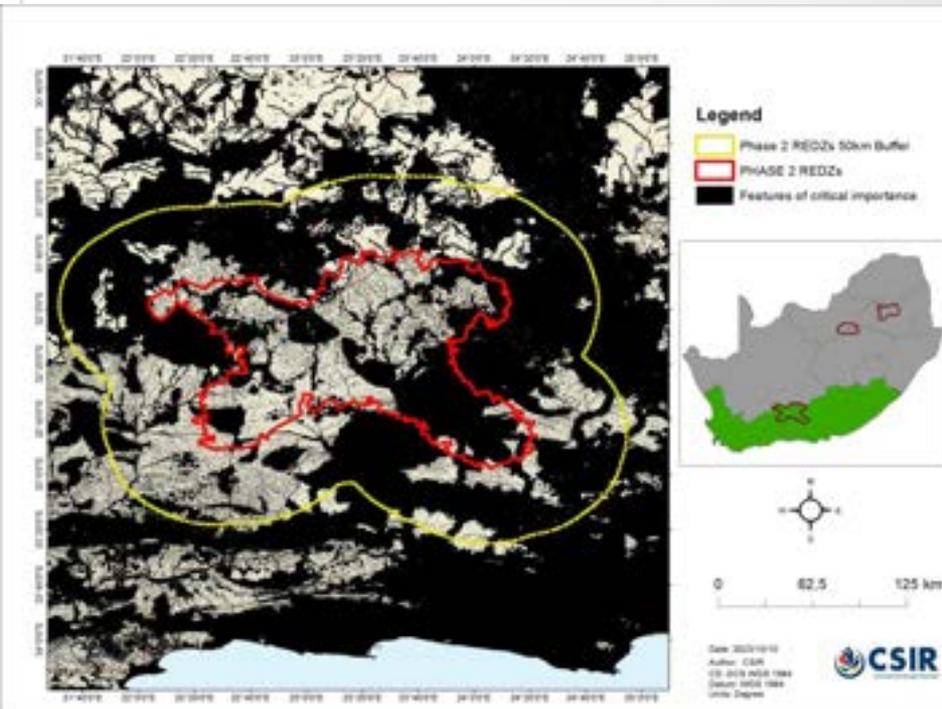
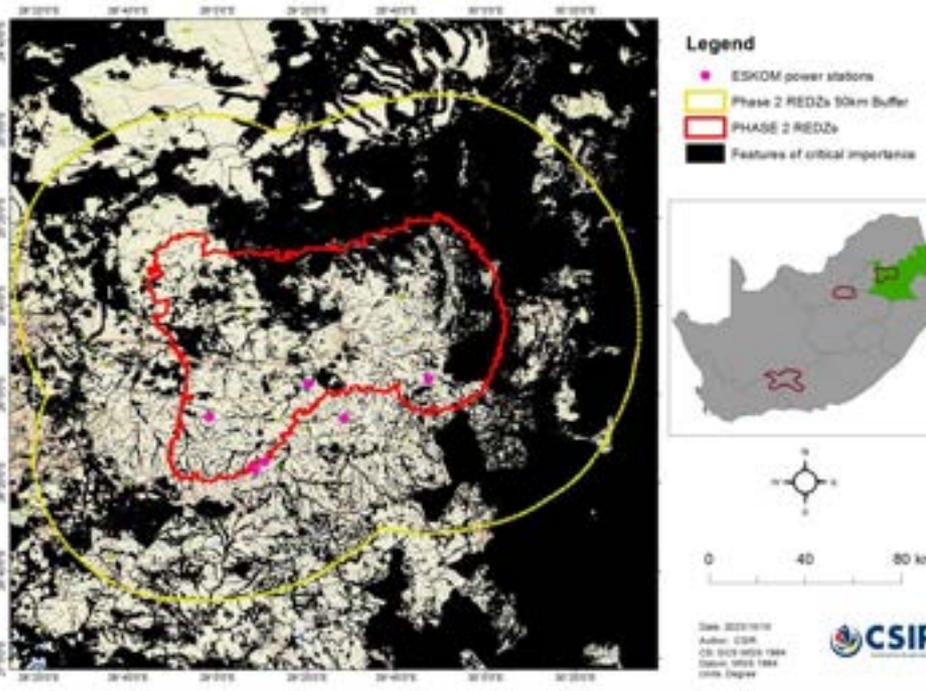
Features of Critical Importance

Visual: Very high sensitivity areas for elimination from Focus Area				
Criteria	Source	Features	Wind Buffers	Solar Buffers
Protected Area	South African Protected Areas Database (SAPAD) – Q2, 2023 , South African National Parks (SANParks) and Provincial.	Marine Protected Areas		
		National Parks	0-5 km	0-2.5 km
		Nature Reserves	0-3 km	0-1.5 km
		World Heritage Sites (Core)	0-5 km	0-2.5 km
		Mountain Catchment Areas (Natural)		
		Protected Environments (Natural)	0-3 km	0-1.5 km
		Forest Nature Reserve	0-3 km	0-1.5 km
		Forest Wilderness Area	0-3 km	0-1.5 km
		Special Nature Reserve	0-3 km	0-1.5 km
Critical Biodiversity Areas (CBAs)	Provinces	CBA1 only		
Large Water features	NFEPA	Wetlands (500m) and Major Rivers(32m)	0-1 km	0-500 m
	CSIR	Estuaries, lagoons, lakes, state dams	0-1 km	0-500 m
	CSIR	SWSAs (Natural) --> ONLY KEEP SURFACE SWSAs		
Coastline			0-1 km	0-1 km
SA Large Telescope	SALT	Exclusion area	0-25 km	0-15 km
Square Kilometre Array (SKA) Area	SKA	SKA study Area		
Heritage	SAHRA	All grades and declared sites (add UNESCO sites)	0-1 km	0-1 km
Steep slopes > 25% (1:4)				
Towns, settlements			0-2 km	0-500 m
Major airports			0-8 km	
Small airfields, landing strips			0-3 km	
National roads			0-1 km	0-500 m
Main Passenger Rail Lines			0-1 km	0-500 m
Scenic routes and passes	No data base			

Features of Critical Importance



Features of Critical Importance



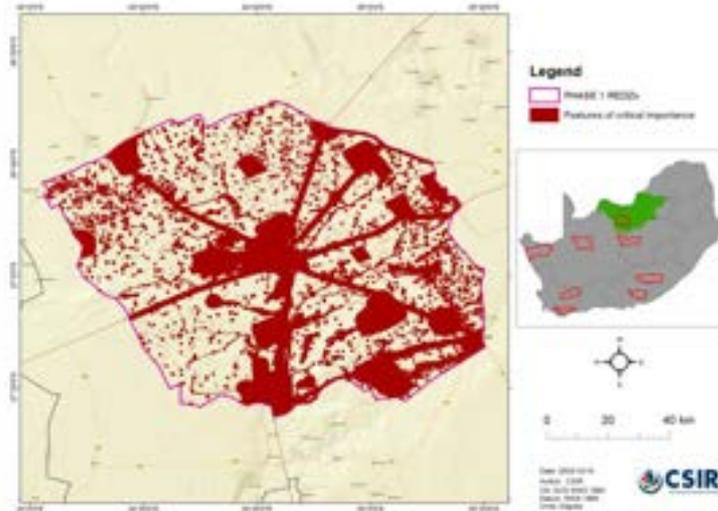
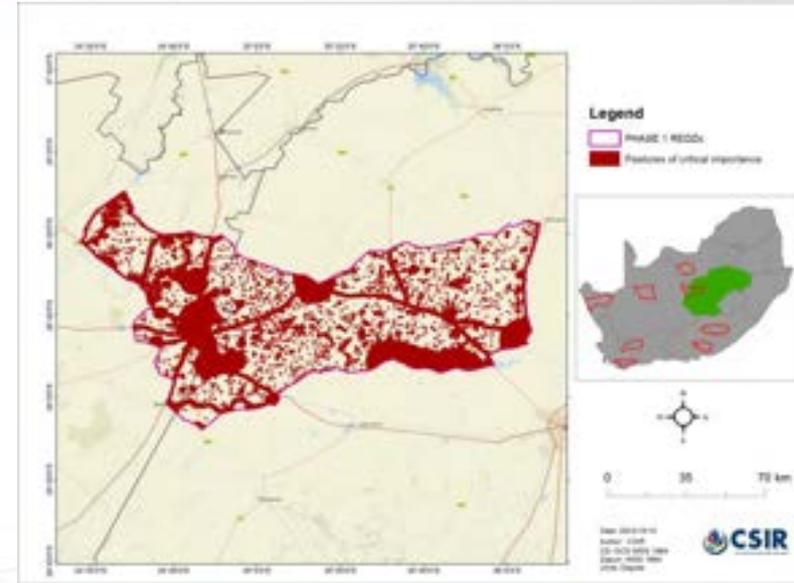
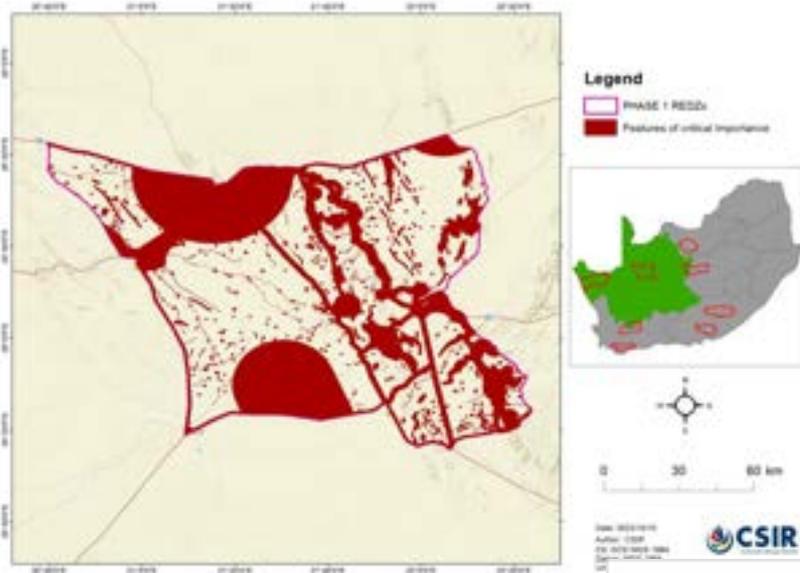
ENVIRONMENTAL CONSIDERATIONS – WIND REASSESSMENT



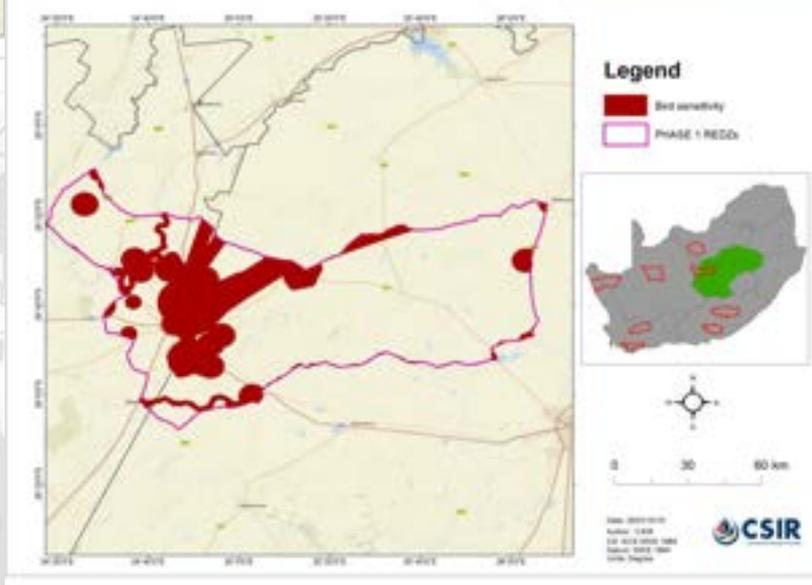
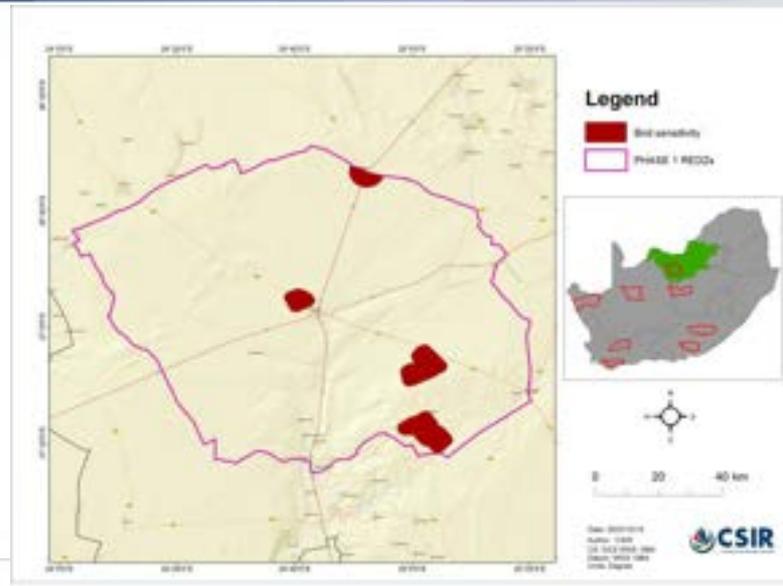
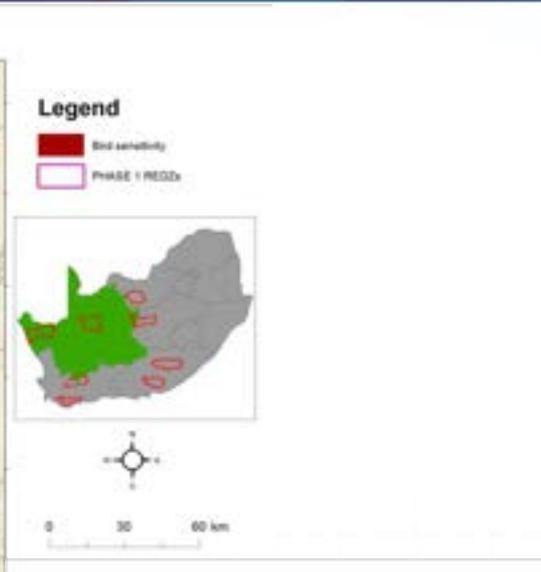
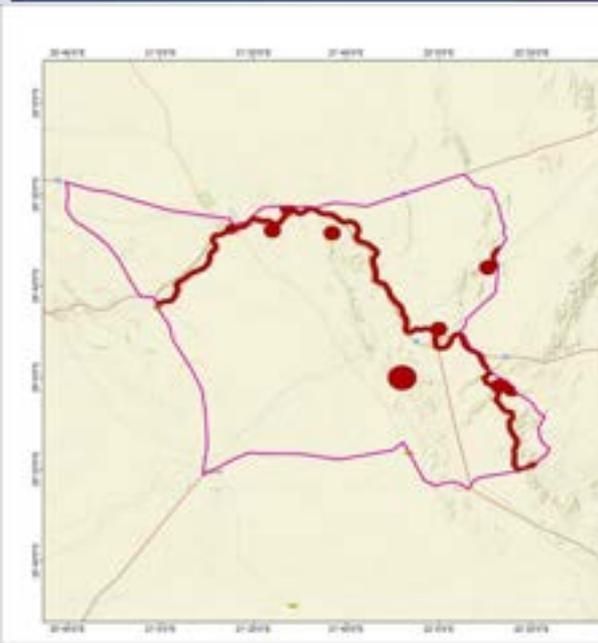
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Wind reassessment - very high sensitivity features



Wind reassessment – bird features



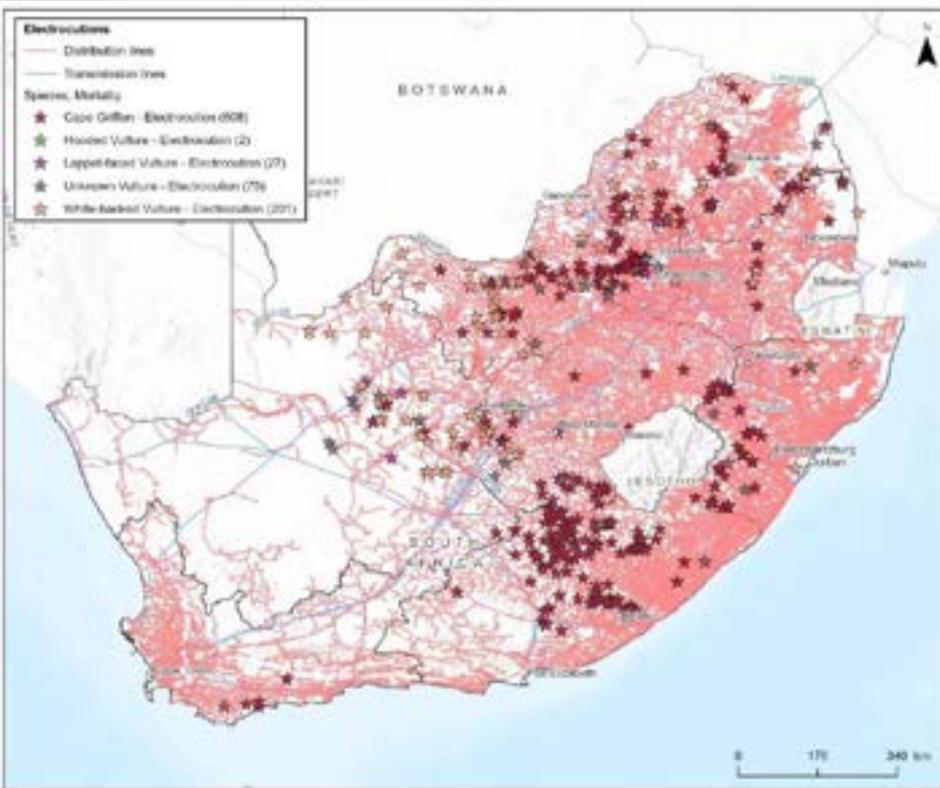
VULTURE ELECTROCUTION



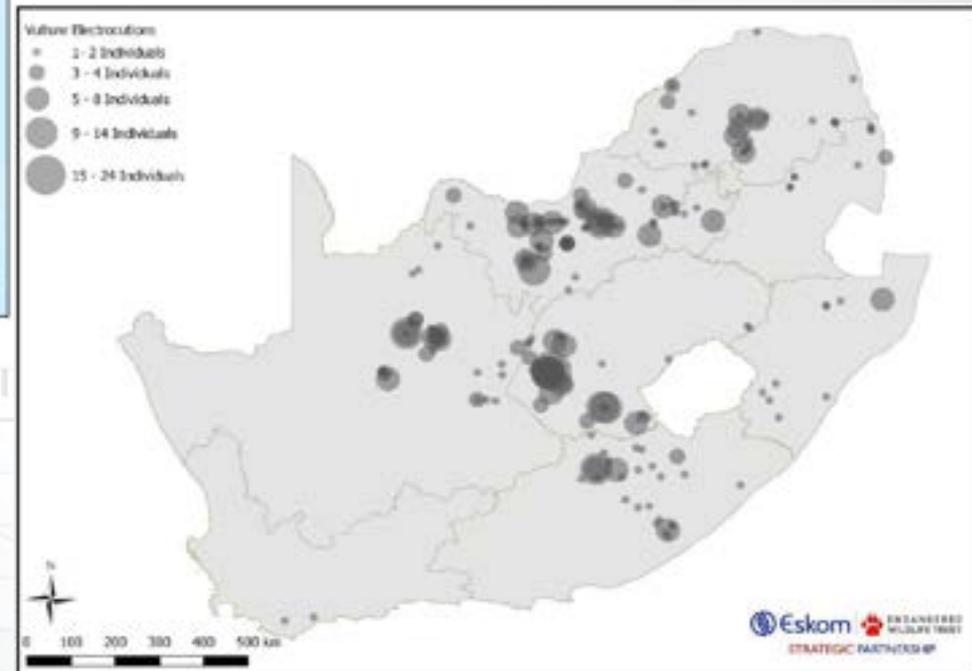
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Electrocution risk to Cape Vultures



Map reflecting power line vulture electrocution incidents in South Africa (Eskom/EWT Strategic Partnership database unpublished 2020).



CONSULTATION

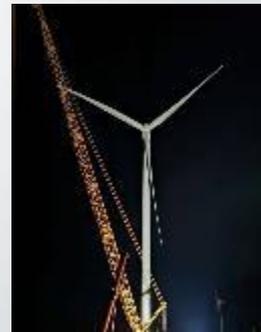


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Consultation

- Quarterly working group meetings
- Quarterly meetings with ERG and PSC members – 2 online
- Sector specific meetings with key stakeholders
- Two 30 days review & comments period for the public
- Online project website continuously updated and accessible during the duration of the SEA
- Consultation on:
 - Technical and environmental criteria
 - Draft outputs
 - Final outputs



Intended outcome of the SEA

- The availability of **scientifically sound information** to provide for the **exclusion of development activities** from the need to obtain an environmental authorisation prior to commencement within some of the Eskom power stations that are to be decommissioned, other than activities which have secondary pollution potential (i.e., activities which may require atmospheric emissions licences such as landfill sites) ;
- The **gazetting of the five (5) REDZs** currently not identified for the reductions in review timeframes **for wind energy**, where appropriate (i.e. Emalahleni, Klerksdorp, Vryburg, Kimberley and Upington REDZs);
- The **realignment** of the identified boundaries for the **Emalahleni** and **Beaufort West REDZs** for gazetting, where appropriate; and
- Maps identifying areas where **additional mitigation measures** must be applied or where the **design of electricity power lines** must be amended to avoid vulture collisions or electrocutions in the Stormberg and Cookhouse REDZs.

Way forward

- ERG and PSC members are invited to provide inputs on :
 - Additional strategic issues for consideration;
 - Criteria/data to be used for the Technical Considerations;
 - Criteria/data to be used for the Environmental Considerations; and
 - SEA process methodology and consultation.

Please send your inputs to the SEA project manager:
Email: redzs@csir.co.za

Thank you

Please send your inputs to the SEA project manager:

Abulele Adams

Email: REDZs@csir.co.za