

Phase 2 of the Wind and Solar PV Strategic Environmental Assessment for the Efficient and Effective Rollout of Wind and Solar PV Energy in South Africa

PSC and ERG Meeting

19 September 2018



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

SANBI

Biodiversity for Life



South African National Biodiversity Institute

CSIR

our future through science

Updated Agenda

TIME	PRESENTATION	ORGANSIATION
10:00 – 10:15	Welcome and Introductions	DEA
10:15 – 10: 30	Objectives of the Meeting	CSIR
10:30 – 11:00	REDZs Phase 1 Gazette	DEA
11:00 – 11:30	Presentation of SEA progress and focus areas	CSIR
11:30 – 12:00	Discussion	All
12:00 – 12:30	Approach to prioritization and determination of Phase 2 REDZs	CSIR
12:30 - 12:45	Discussion	All
12:45 – 13:00	Way Forward	CSIR

OUR FUTURE THROUGH SCIENCE

Objectives of the Meeting

- Update on the SEA since last ERG/PSC meeting (July 2017)
- Convey outcomes of Phase 1 REDZs promulgation (February 2018)
- Discuss the results of the environmental constraints mapping and determination of focus areas – clarify buffers for vultures and confirm the way forward
- Approach to prioritizing Phase 2 REDZs based on the current focus areas

Update - Phase 1 REDZs and Power Corridors

- SEAs for wind, solar and Electricity Grid expansion undertaken 2014-2015
- Identified REDZs and power corridors
- Produced draft assessment protocols
- Cabinet approved REDZs and Power Corridors in November 2015:
 - BA would apply to applications in REDZs and power corridors
 - Assessment protocols would apply
 - Reduced review timeframes
 - Pre-negotiated route would apply in power corridors
 - Generic EMP for overhead electricity grid infrastructure and sub-stations
 - Standard for second phase of EGI
- EIA Regulations amended to allow for Cabinet decisions – March 2017
- REDZs and EGI Corridors gazetted February 2018



Phase 2 SEA Process

Four tier sensitivity mapping

Environmental constraints mapping (negative mapping)



Consultation with Conservation working group to verify environmental constraints map

Engineering risk mapping (positive mapping)



Consultation with Industry working group to verify engineering risk map

Socio-Economic analysis

Socio-economic activity intensity index for municipalities and towns serving as a proxy of future energy demand



Consultation with PSC/IPP office/DoE to refine socio-economic analysis results

Sub-regional socio-economic vulnerability index, to at least highlight critical socio-economic considerations to take into account in specific locations within the REDZs



Consultation with PSC/IPP office/DoE to refine socio-economic analysis results

June - July 2017

Overlay environmental, engineering and socioeconomic outcomes to identify high potential development areas for South Africa:

Delineation of focus areas (first draft)

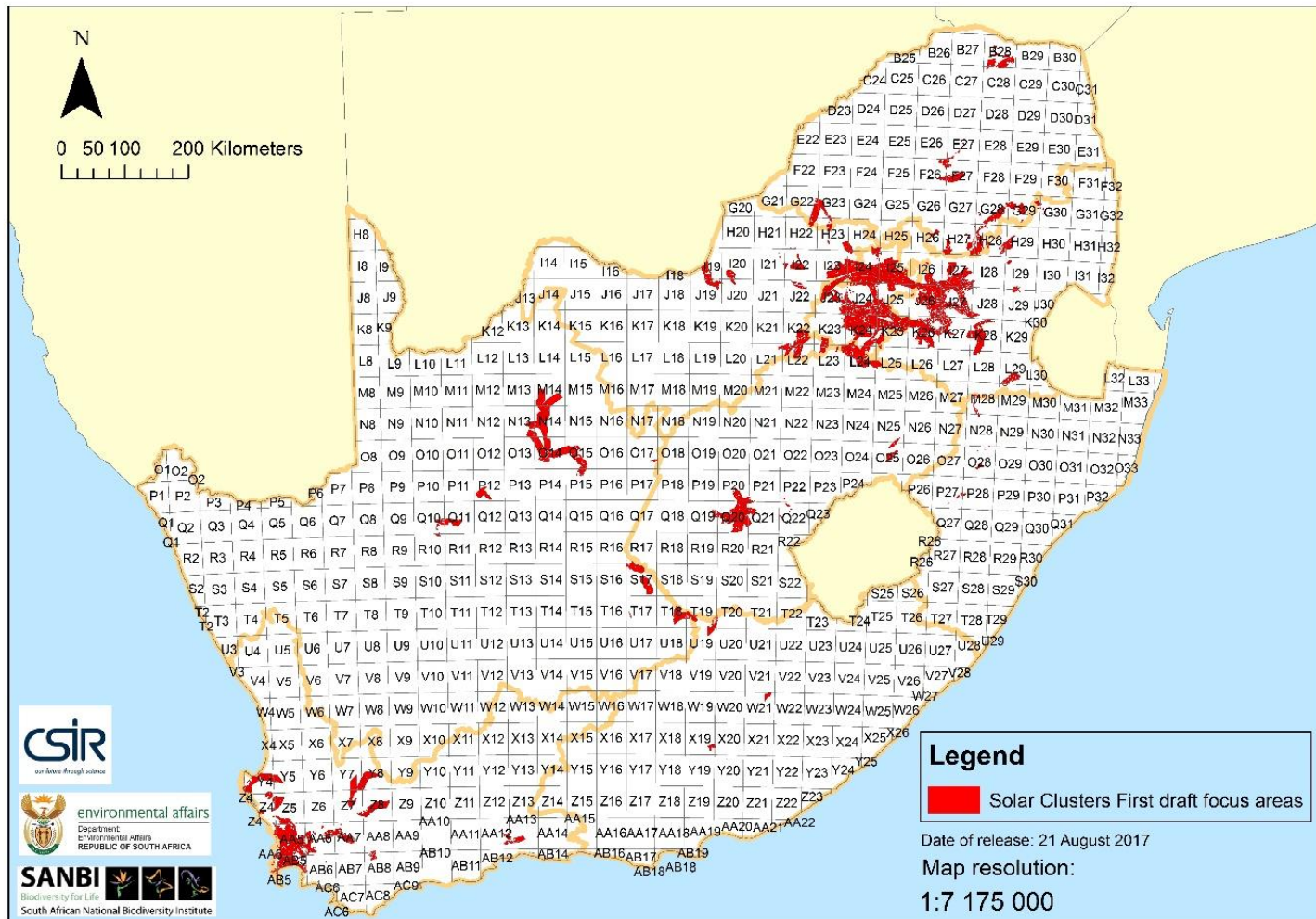


30 days review and comments period on the delineated focus areas (first draft), including:

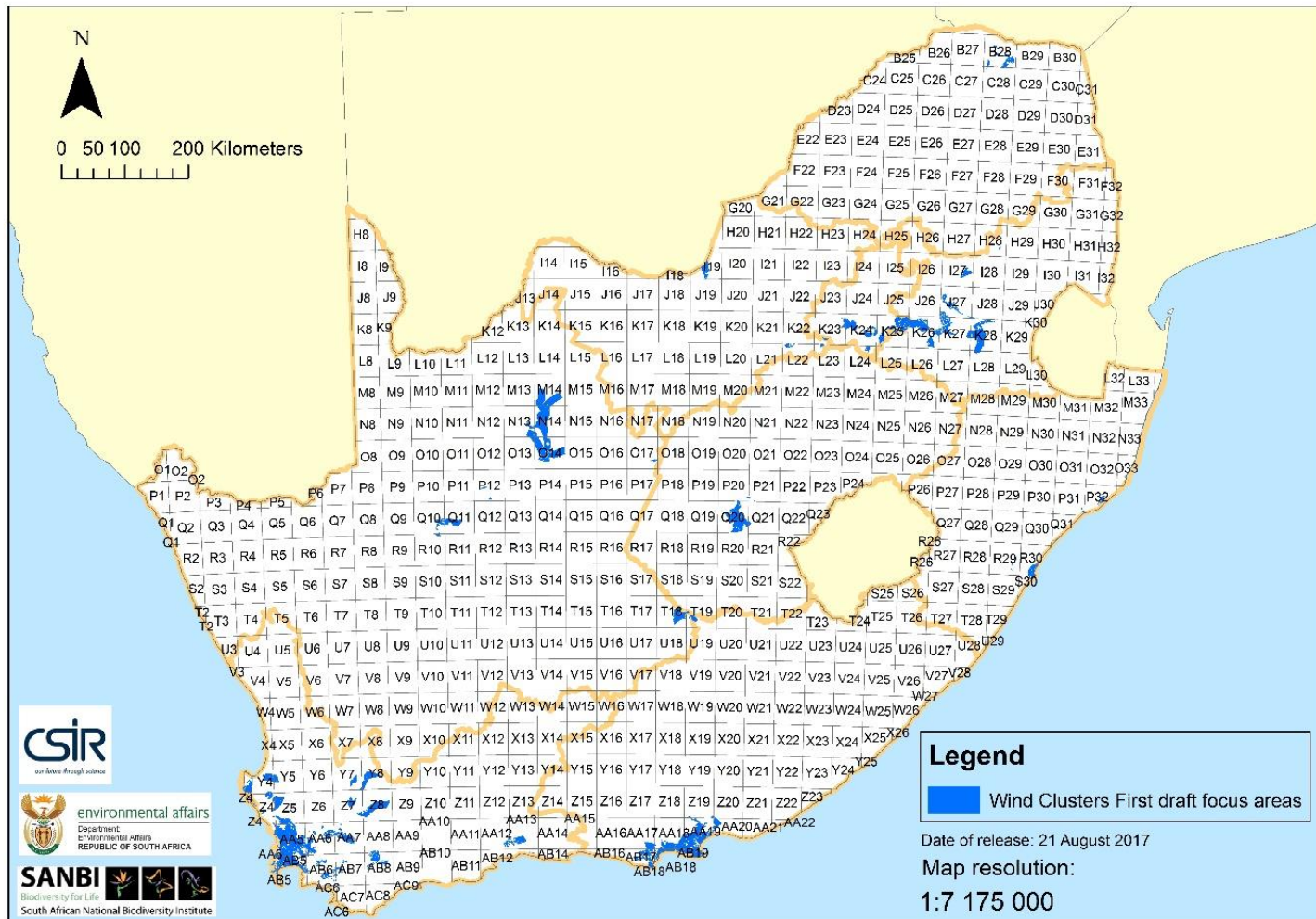
- Industry working group consultation
- Conservation working group consultation
- Online comment portal for the public
- Meetings with key mining houses/companies

September 2017

First Draft Focus Areas – Solar PV



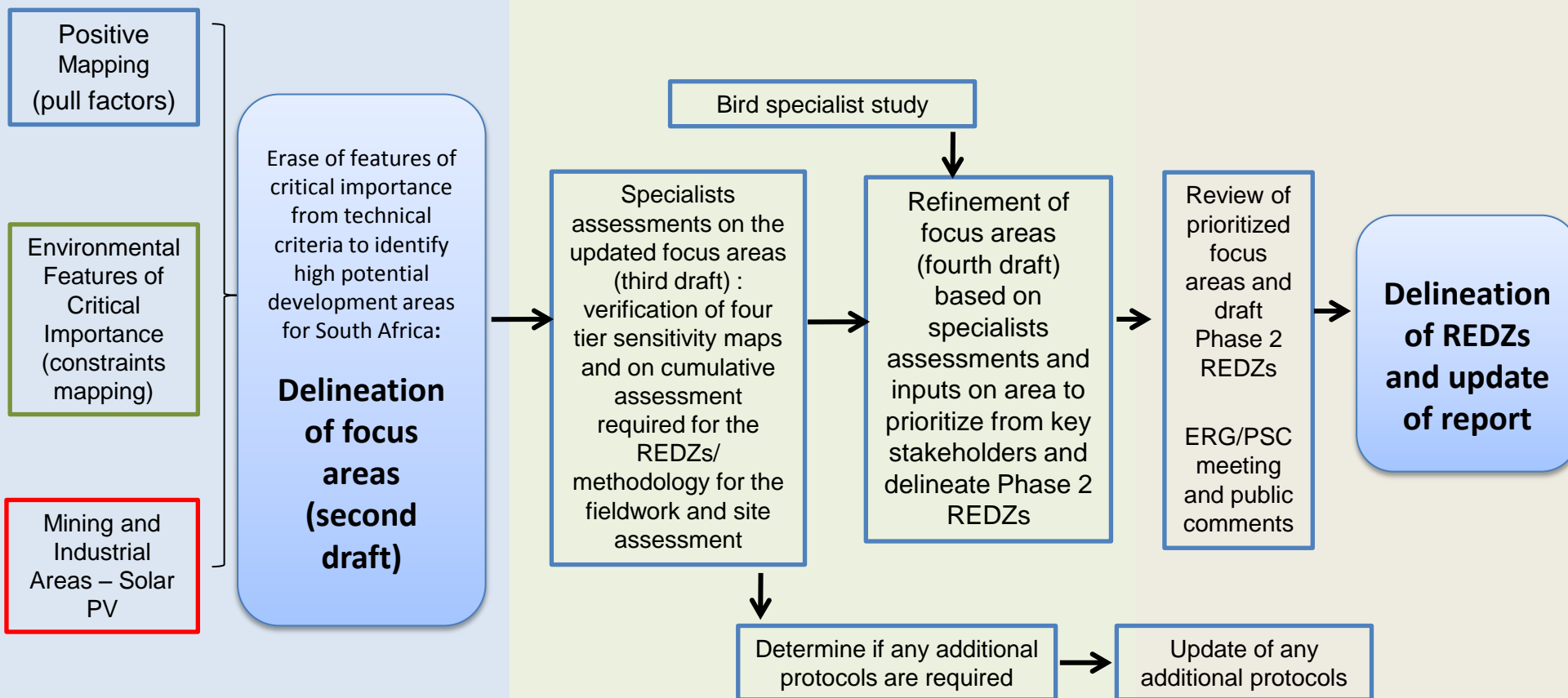
First draft Focus Areas - Wind



Key Feedback on Stakeholder Consultations

- Areas are too sparse and not large enough
- Too many REDZs – one of the objectives of the REDZs is to identify areas to be prioritized for transmission upgrades
- Update of WASA data available November 2017 should be used instead of the wind capacity factor data
- Socio-economic factors need to be reassessed; strong focus on urban areas as these are the load centres – rather do an analysis in the focus areas
- Technical criteria used need to be updated

SEA Process



January-April 2018

May-September 2018

January 2019

February 2019

March 2019

Technical considerations from industry

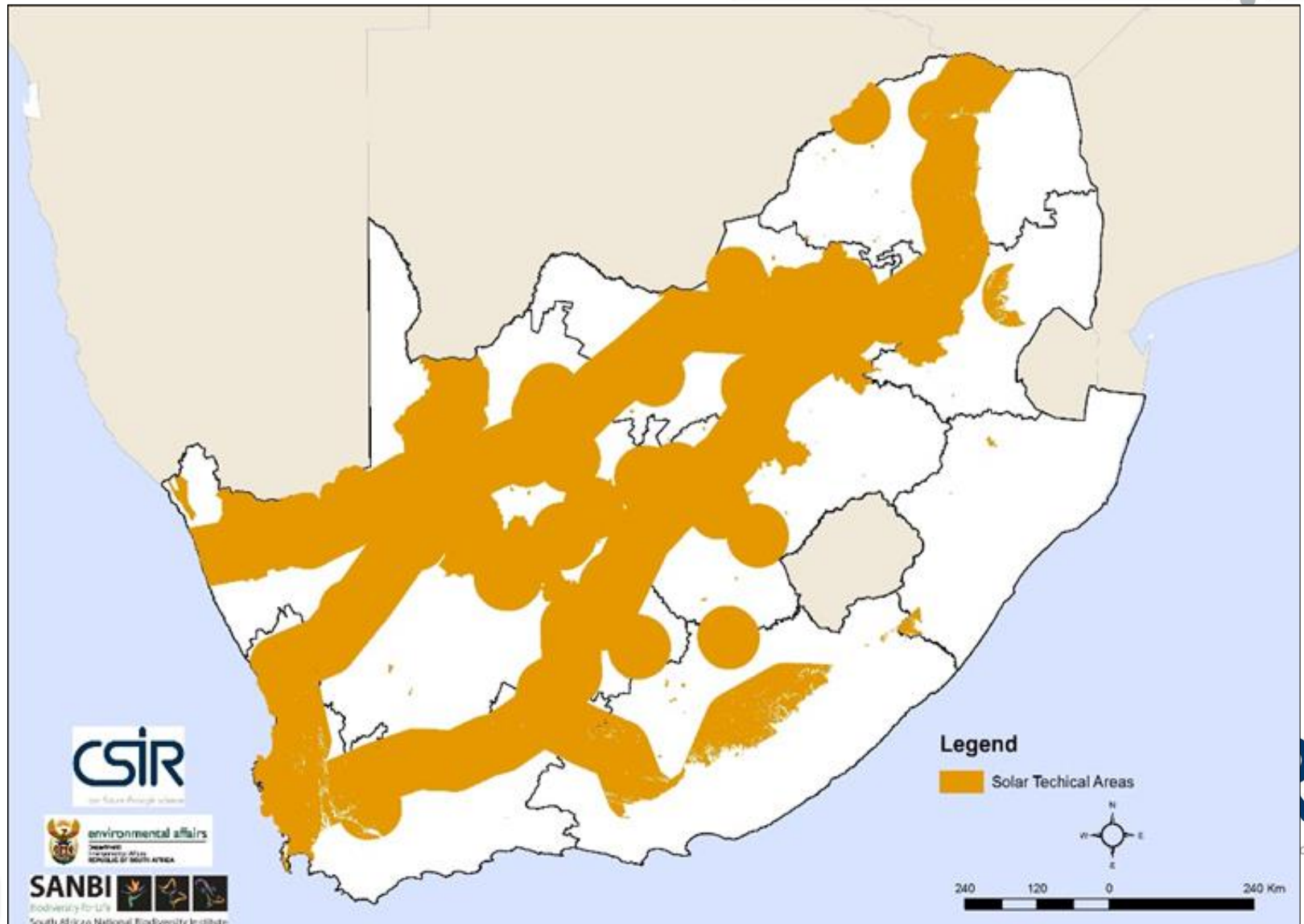
Solar PV technical criteria:

- Areas with PV yield (single axis tracking) above 1850 kWh/kWp and within municipalities with clusters of previously mined land
- Areas with PV yield (single axis tracking) above 1850 kWh/kWp and within 50km of the solar PV Projects selected in round 1 to round 4b of the REIPPPP
- Areas with PV yield (single axis tracking) above 1850 kWh/kWp and within 50km of the solar PV Projects with an approved EA from DEA
- Areas with PV yield (single axis tracking) above 1850 kWh/kWp and within the EGI corridors

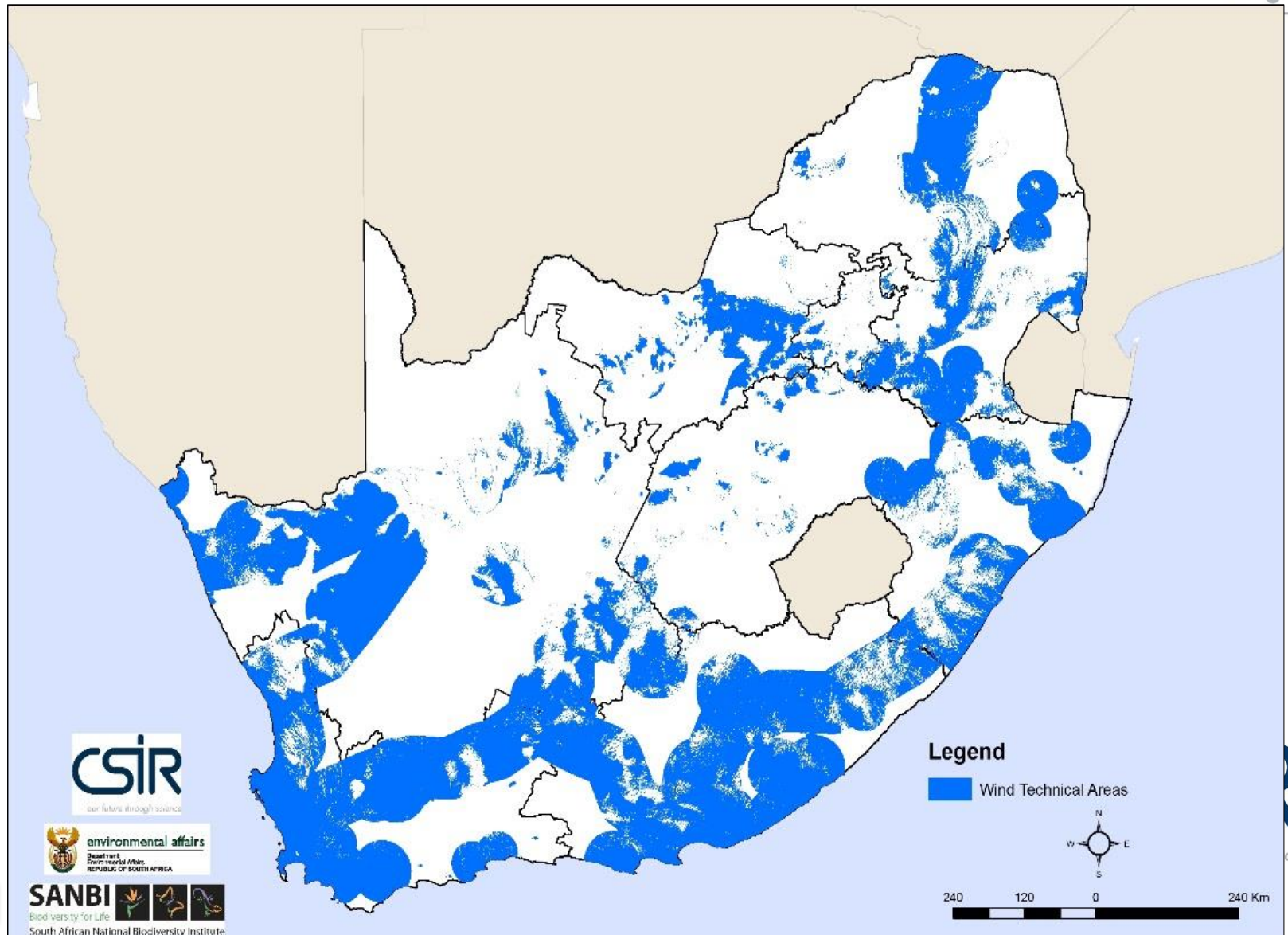
Wind technical criteria:

- Areas with power density above 250 W/m² and within 50km of the projects selected in round 1 to round 4b of the REIPPPP
- Areas with power density above 250 W/m² and within 50km of the projects with an approved EA from DEA
- Areas with power density above 250 W/m² and within the power corridors identified for the expansion of the strategic grid infrastructure
- Areas with power density above 250 W/m² and within 35km of MTS substations identified in the TDP and GCCA2017 datasets

Solar PV Development Potential



Wind Development Potential (including Nov 2017 WASA data)



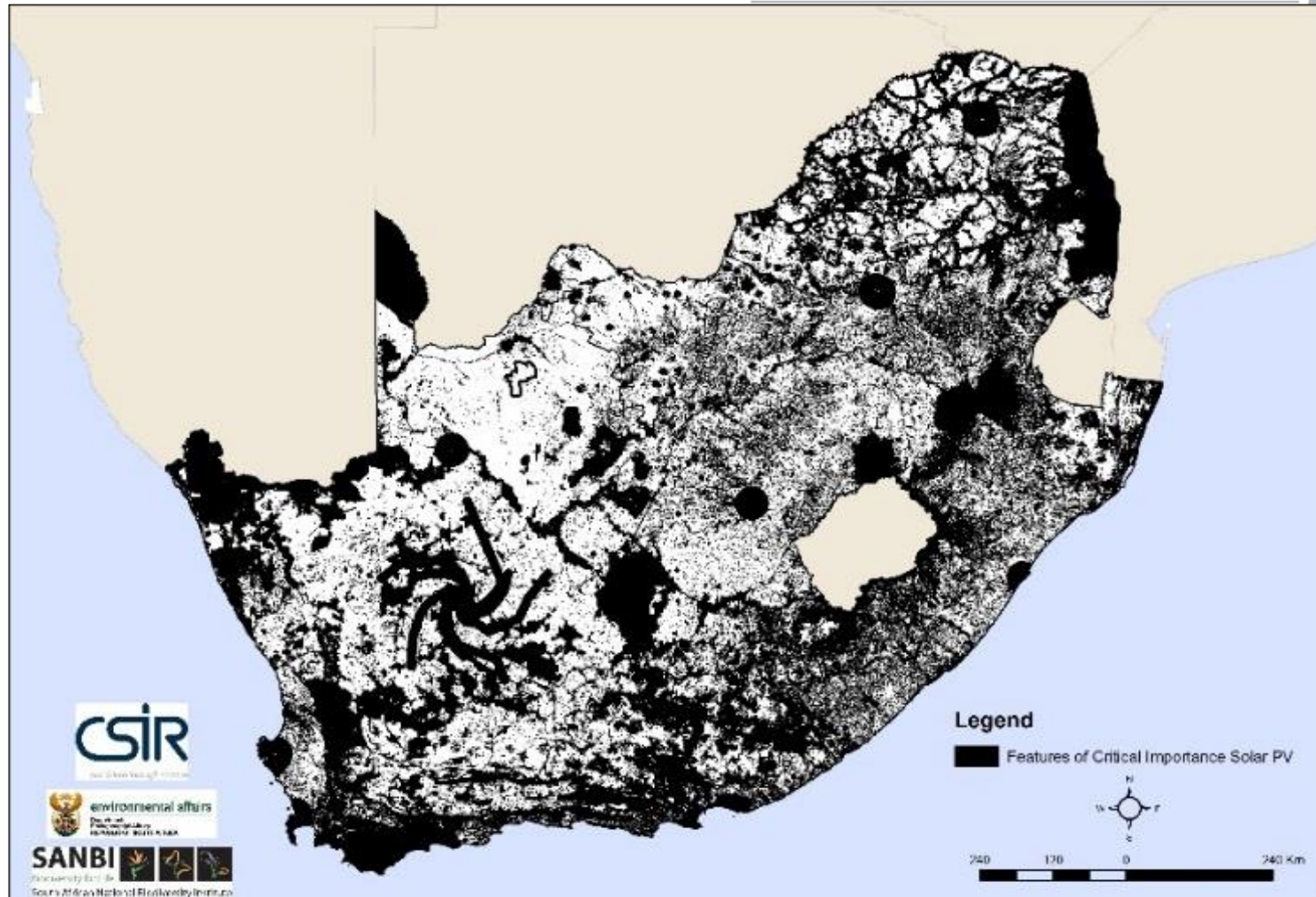
Features of critical importance

Criteria	Source	Features
Protected Areas	South African Protected Areas Database (SAPAD) - Q1, 2017 , 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
		Special Nature Reserve
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 50 km VULPRO cape vulture restaurants 10 km
	NMMU	NMMU cape vulture roost sites 50 km
Bats		Bat Roosts
		Ecoregions

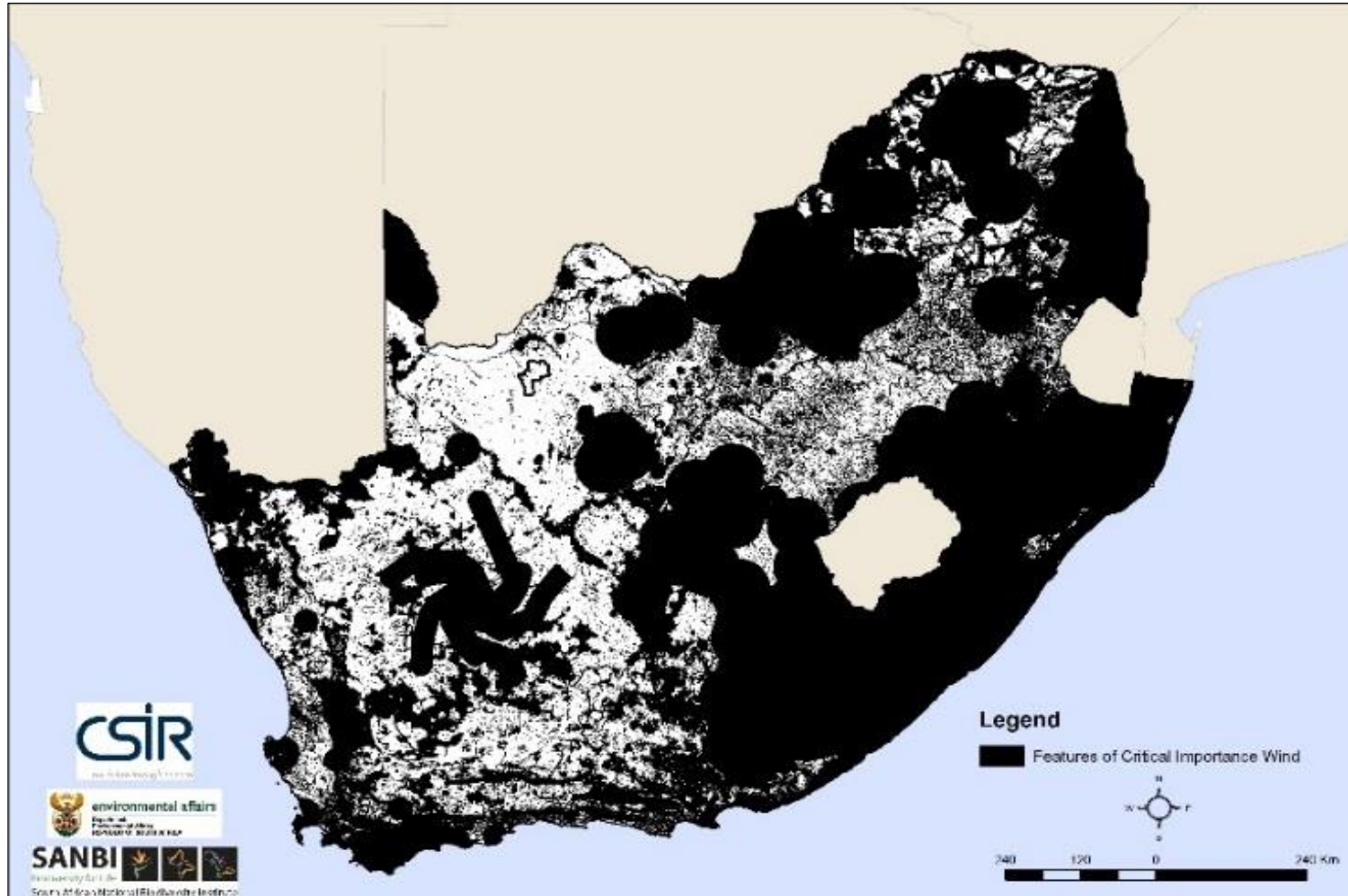
Features of critical importance

Criteria	Source	Features	Wind Buffers	Solar Buffers
Protected Areas	South African Protected Areas Database (SAPAD) - Q1, 2017 , 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)		
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 – Solar PV

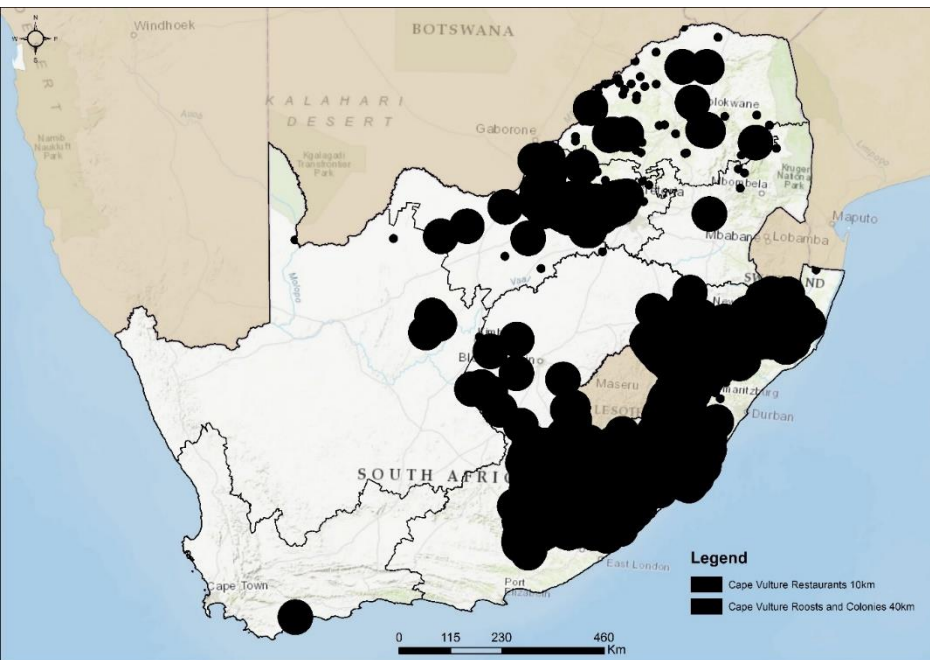


Features of Critical Importance – Wind

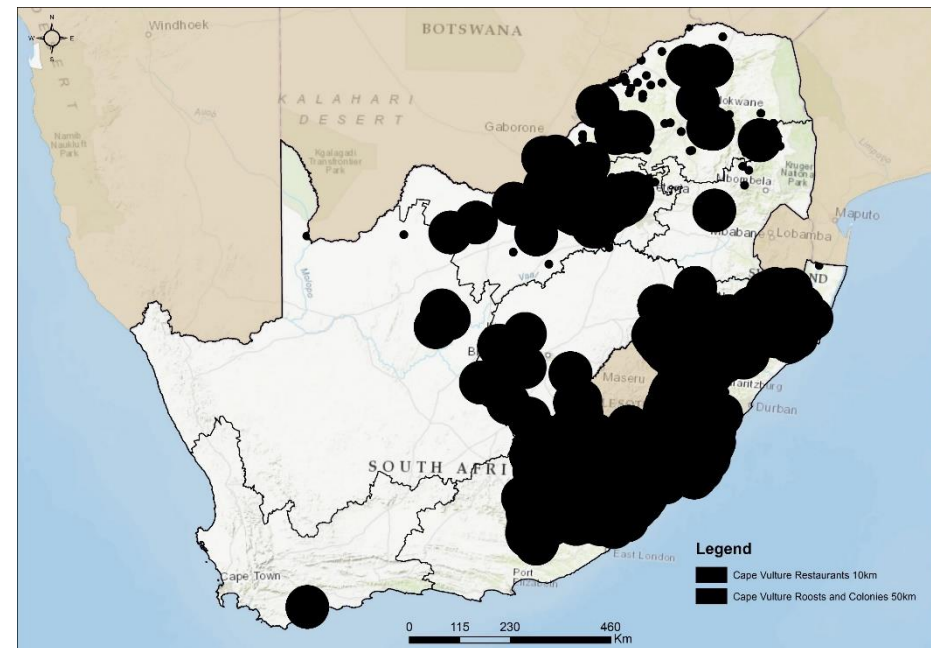


Vulture sensitivity buffers

Applying 40km buffers around colonies and roosts and 10 km around restaurants



Applying 50km buffers around colonies and roosts and 10 km around restaurants



Discussion on the results of the environmental constraints mapping and determination of focus areas



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Determination of Focus Areas

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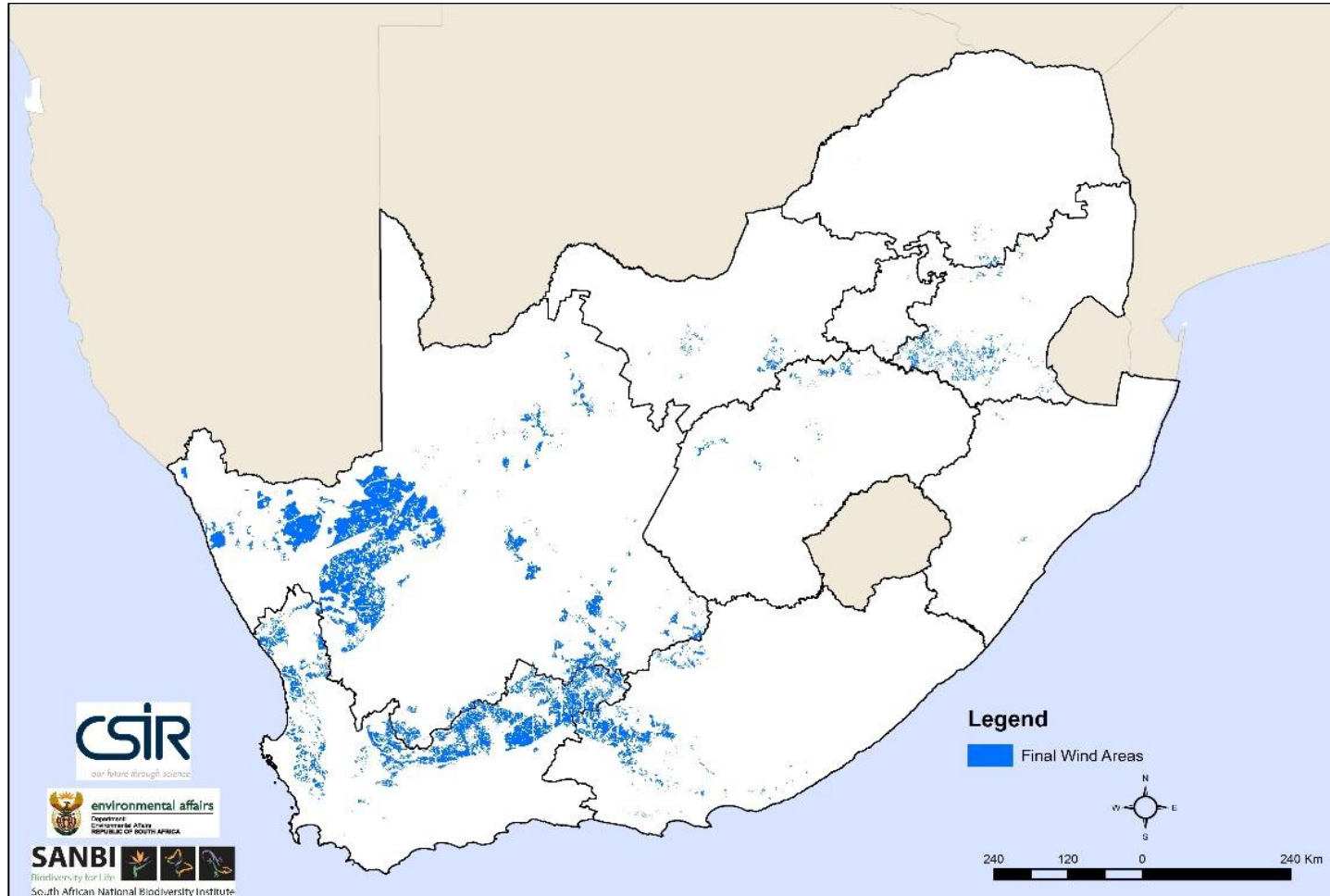


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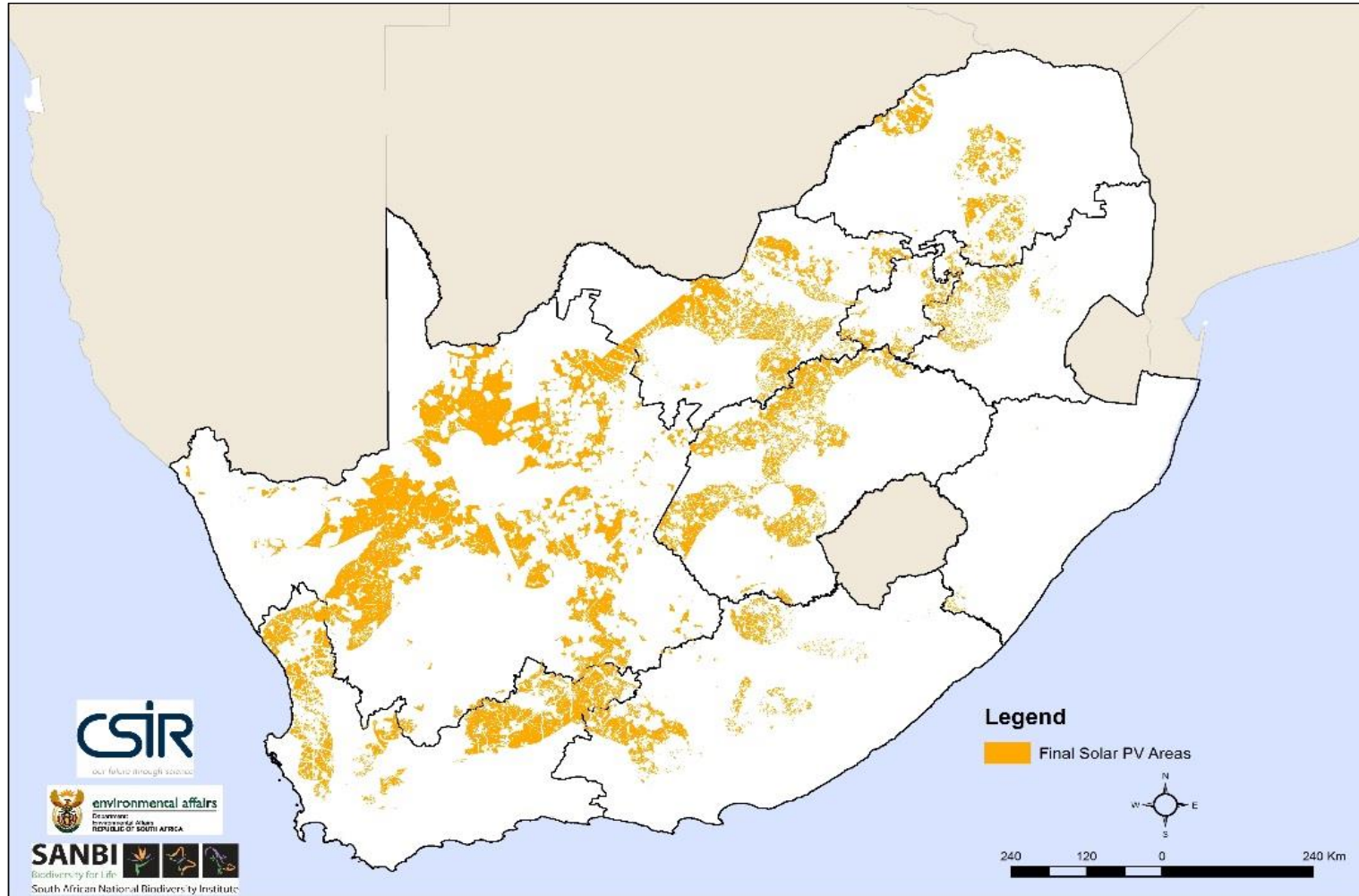
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Second Draft Focus Areas -Wind

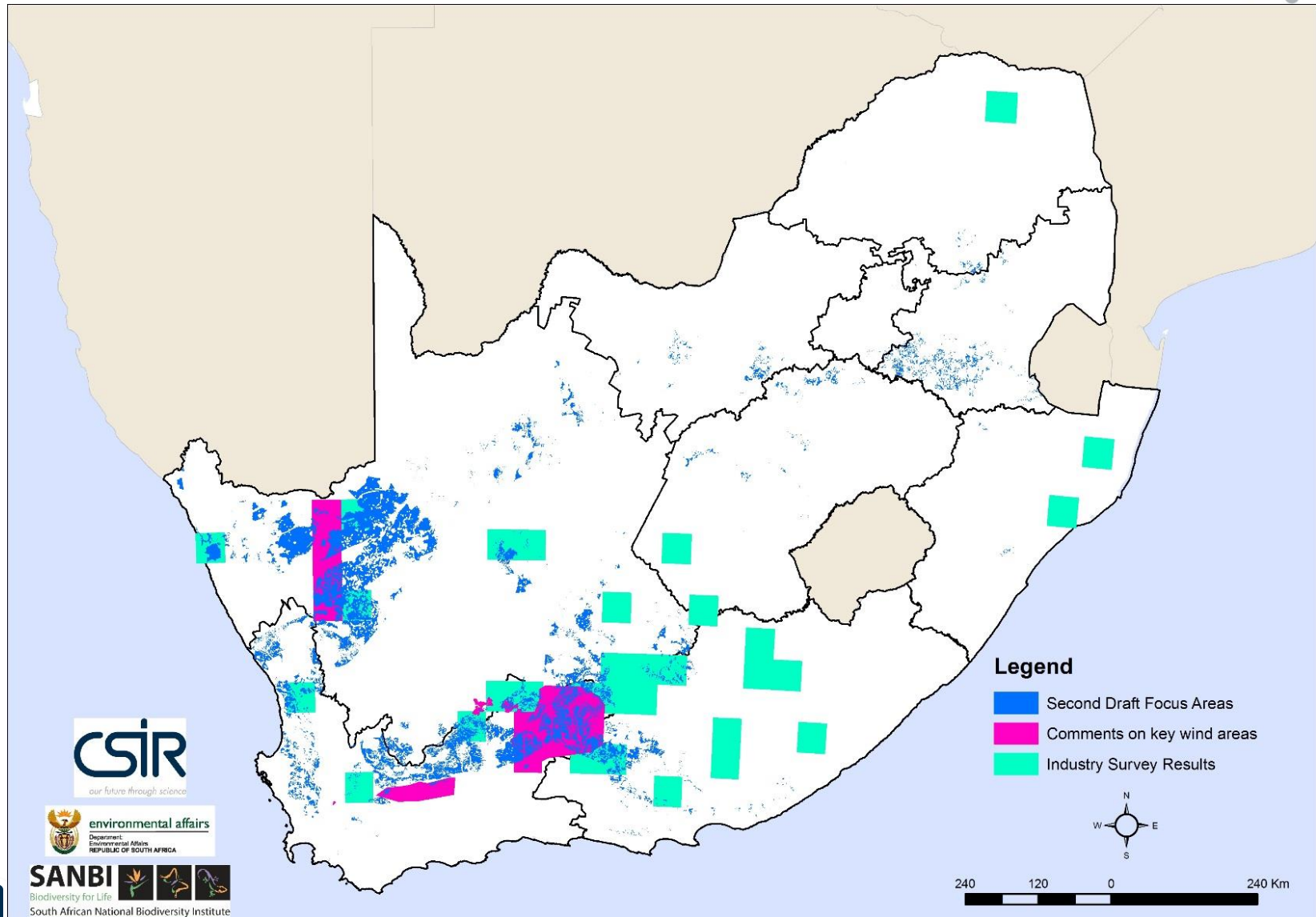


Second Draft Focus Areas –Solar PV

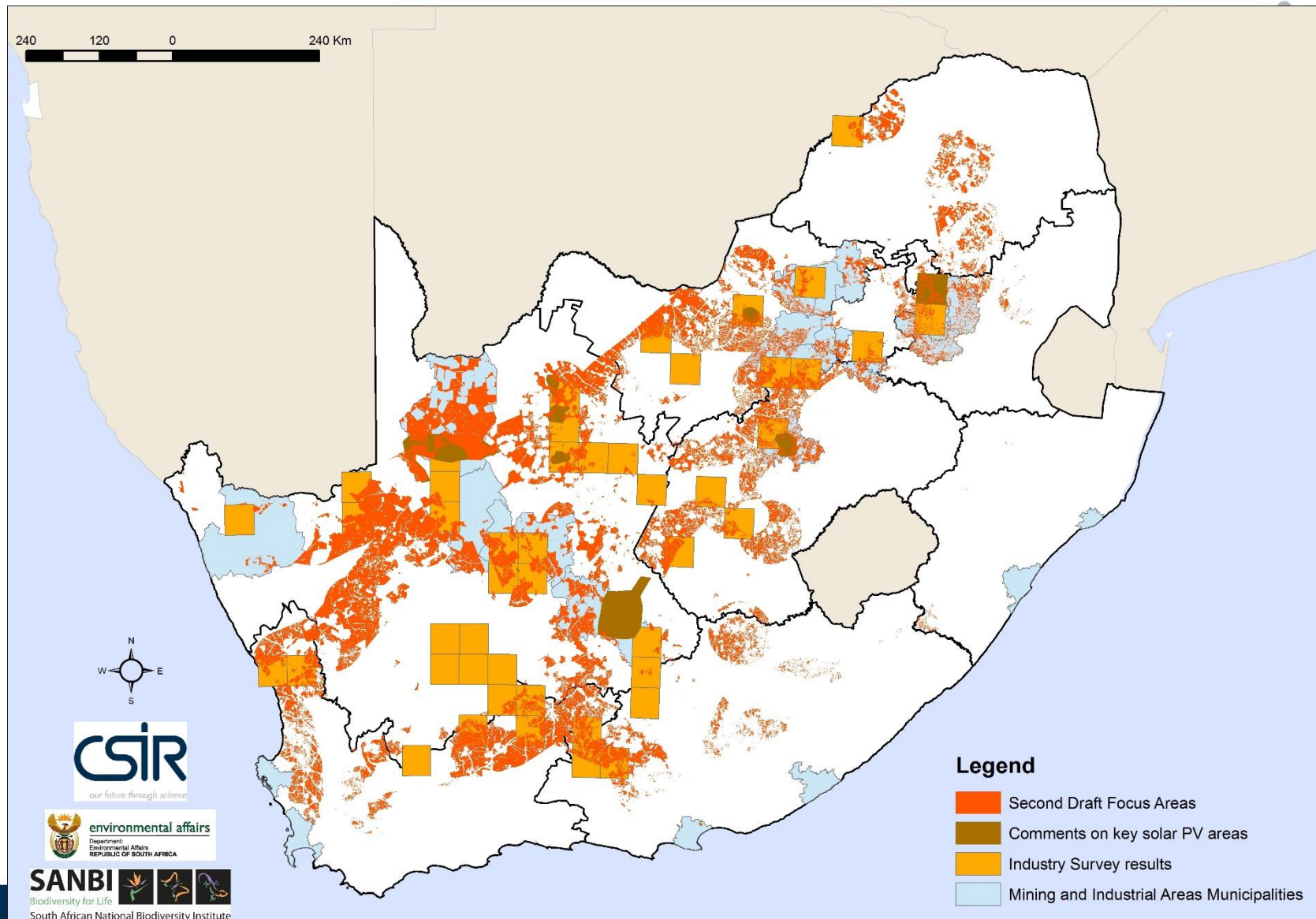


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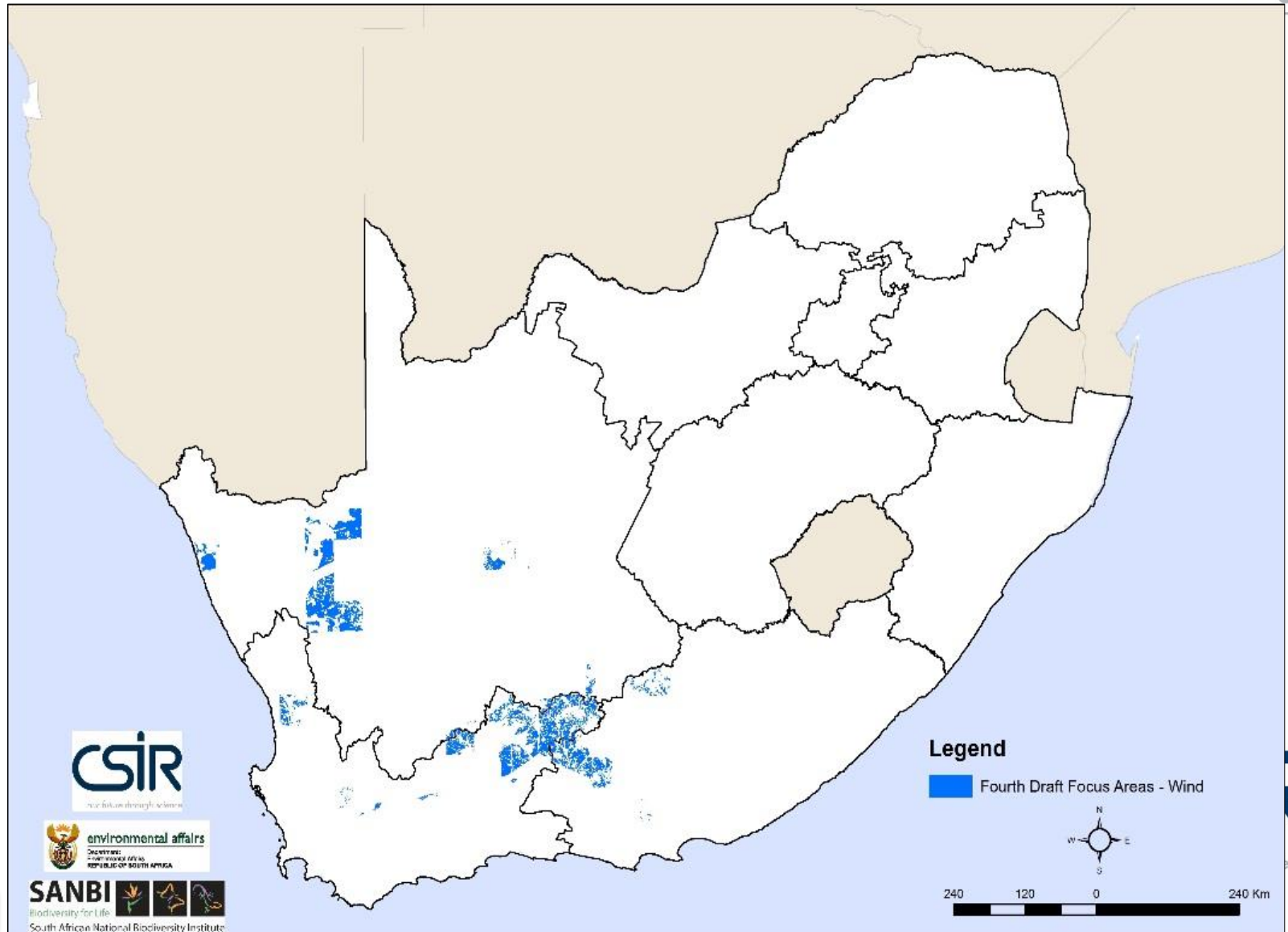
Industry survey results and comments from first draft focus areas - Wind



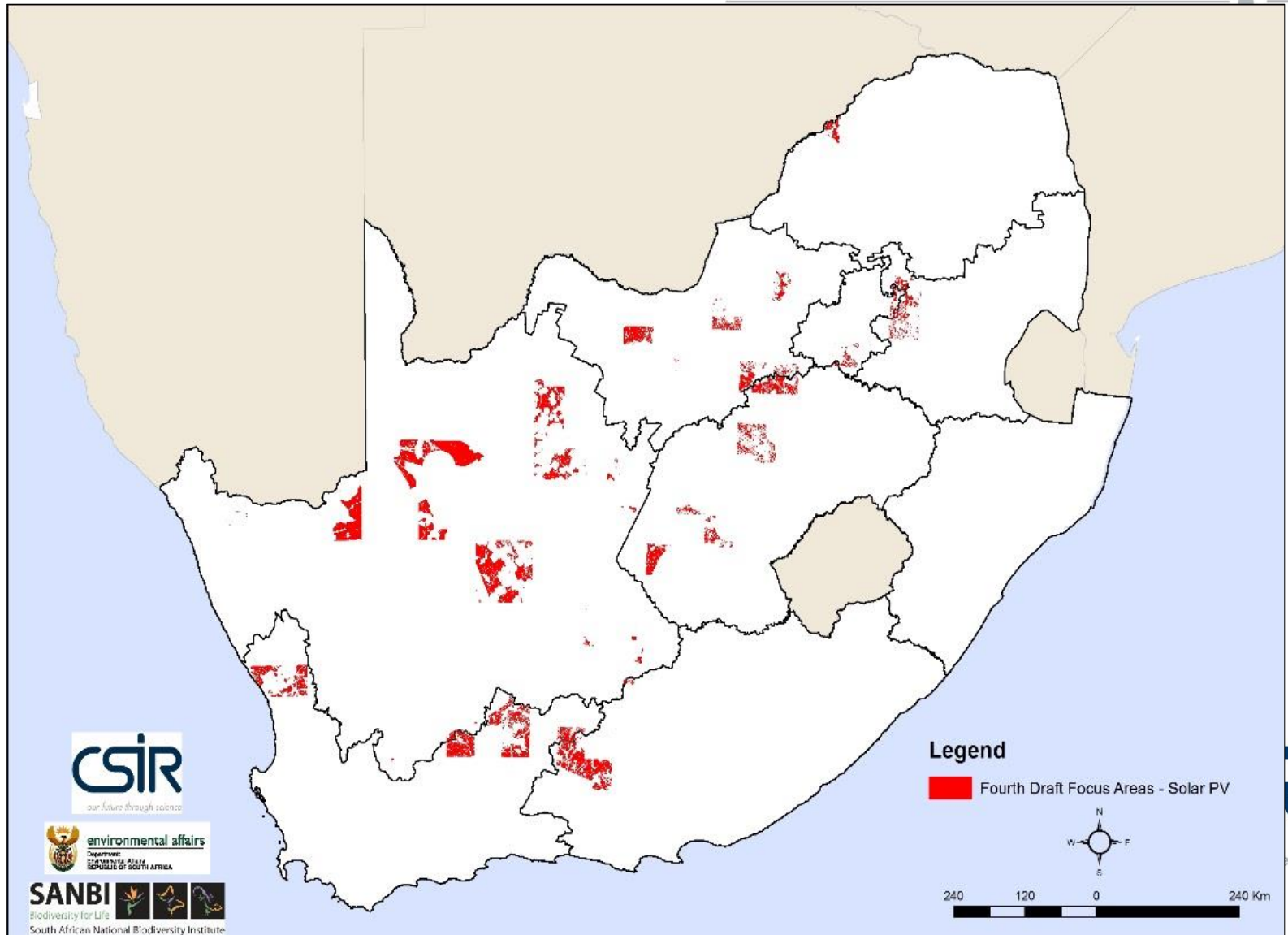
Industry survey results and comments from first draft focus areas – Solar PV



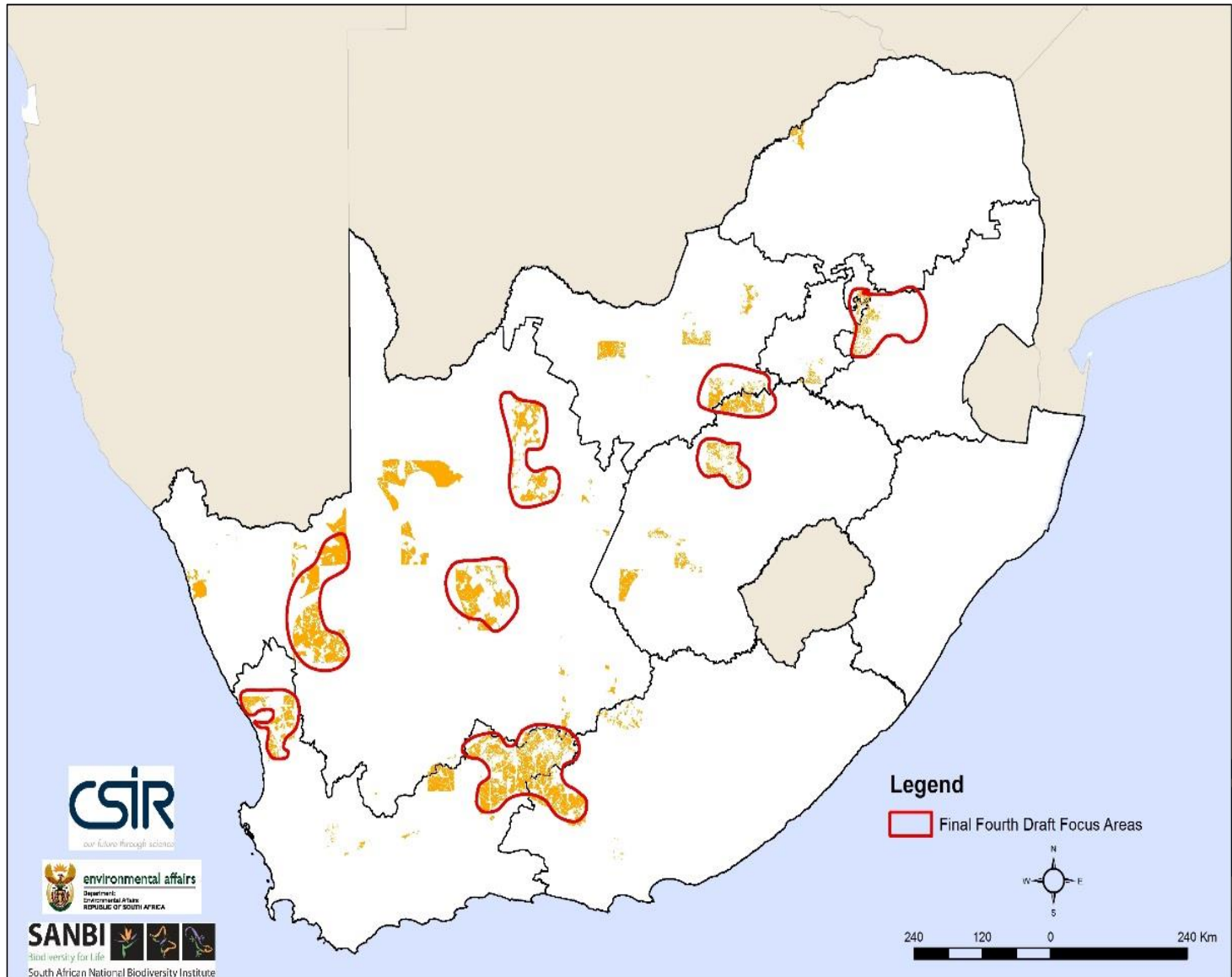
Third Draft Focus Areas -Wind



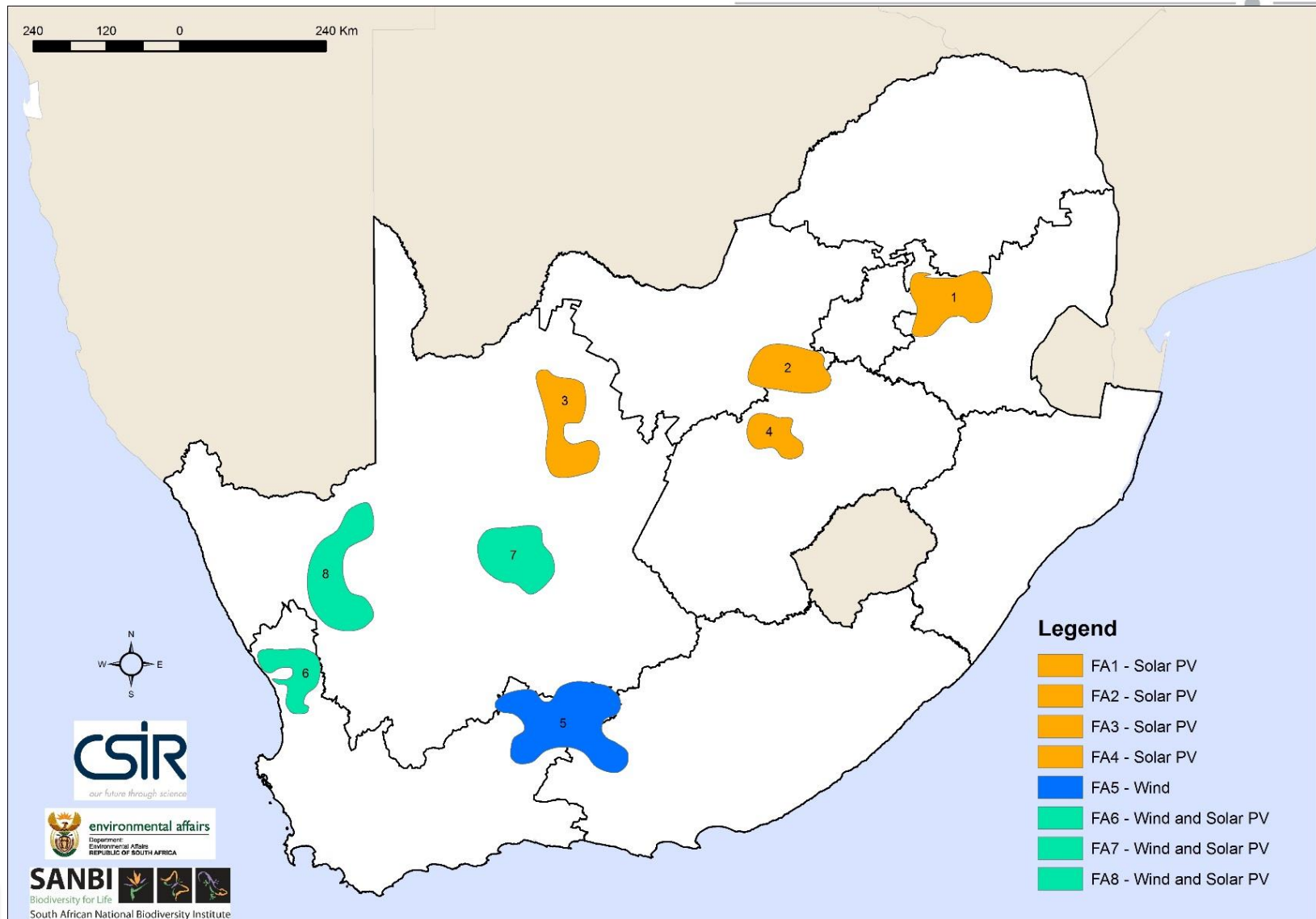
Third Draft Focus Areas –Solar PV



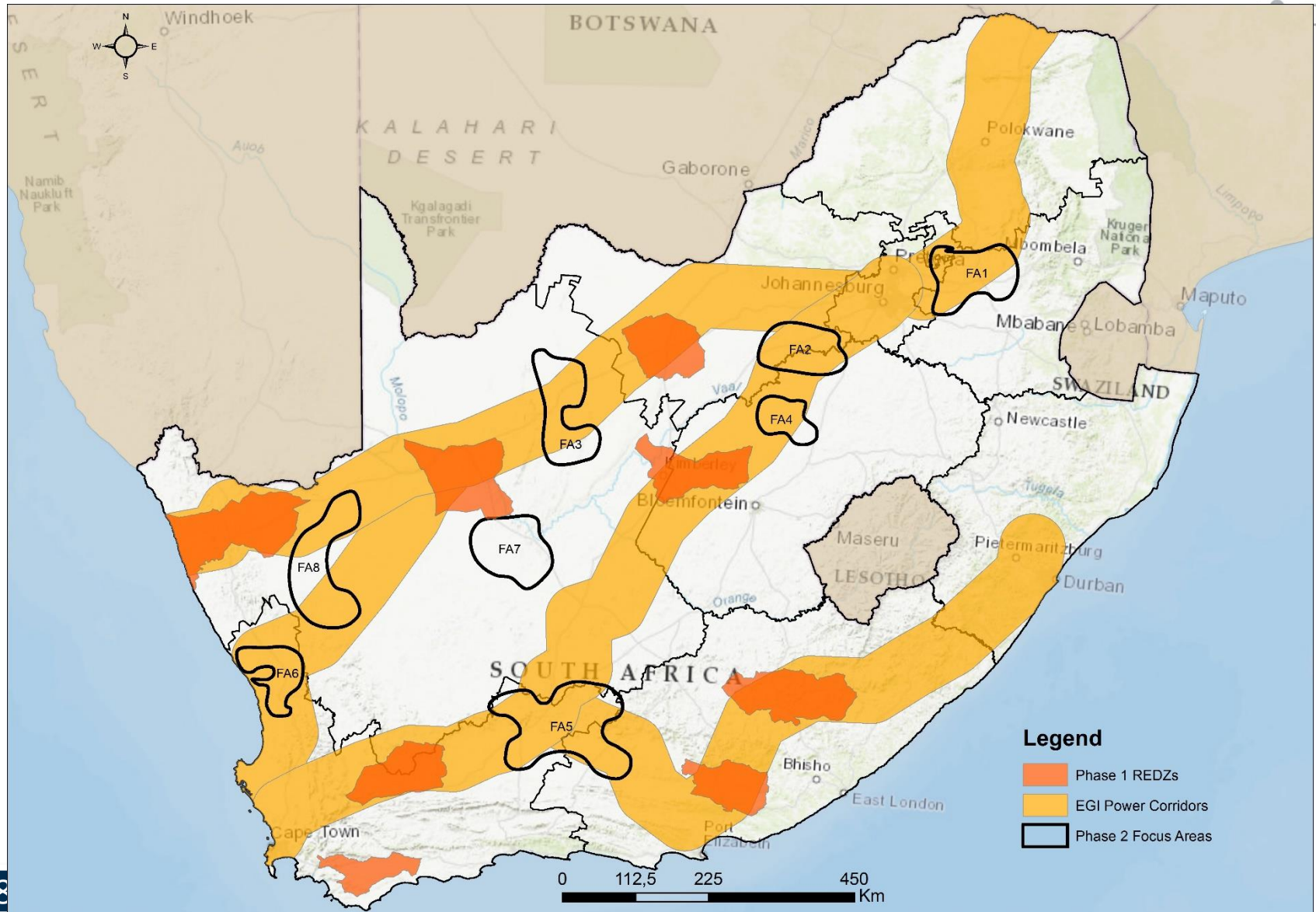
Focus Areas



Focus Areas for assessment



EGI, Phase 1 and 2 SEA Areas



Discussion on the approach to prioritizing Phase 2 REDZs based on the current focus areas



Way Forward

- Continuation of specialist studies until January 2019
- Inputs from PSC/ERG on focus areas prioritisation exercise
- ERG/PSC Meeting February 2019 and public commenting period

Thank you

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