

DEA National Wind and Solar PV SEAs

To facilitate the efficient and effective rollout
of wind and solar PV energy in SA

<https://redzs.csir.co.za/>



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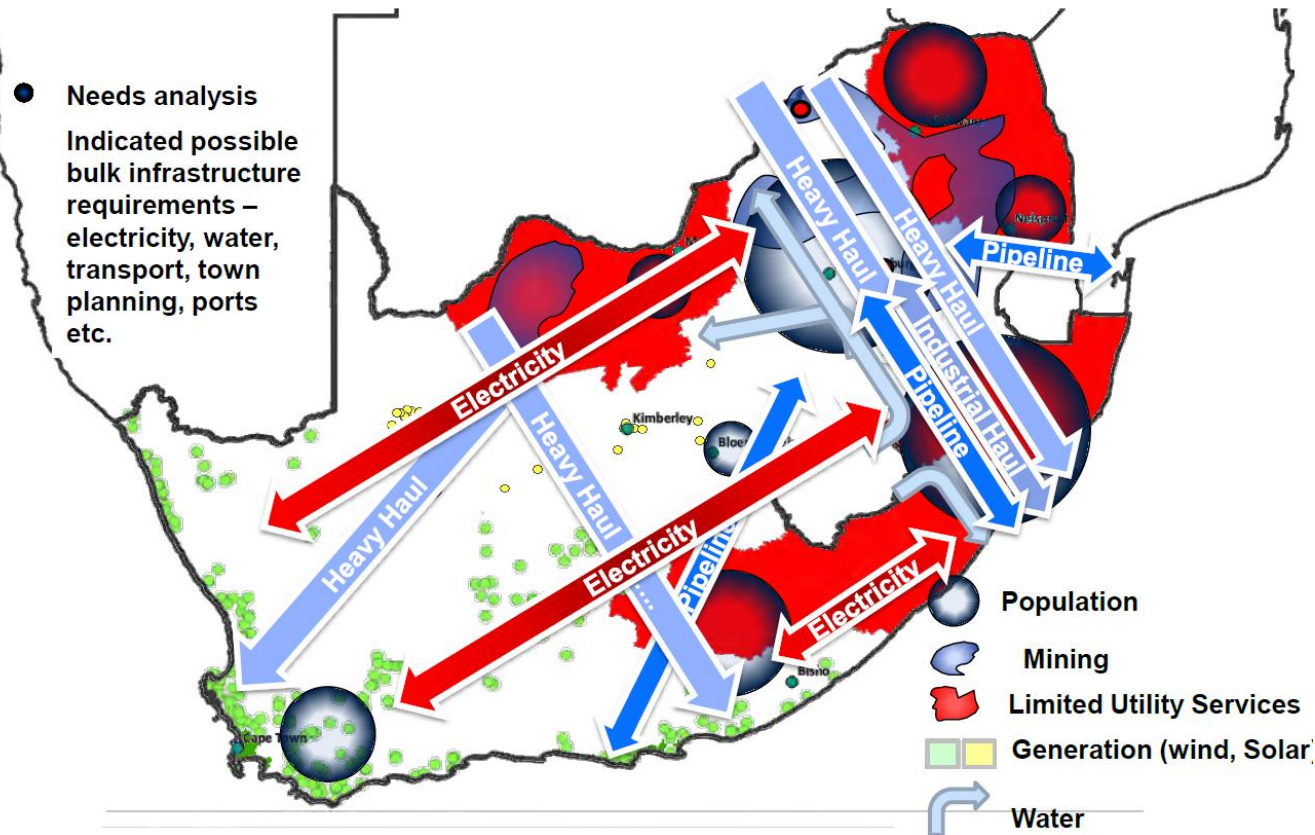
Strategic Integrated Projects (SIPs)

From the spatial analysis of the country needs, 17 (+1) Strategic Integrated Projects (SIPs) have been identified.

The SIPs cover a range of economic and social infrastructure.

All nine provinces are covered, with emphasis on poorer provinces.

Needs analysis of infrastructure to support economic development and trade whilst simultaneously addressing the needs of the poor



Three energy related SIPs

SIP 8: Green energy in support of the South African economy

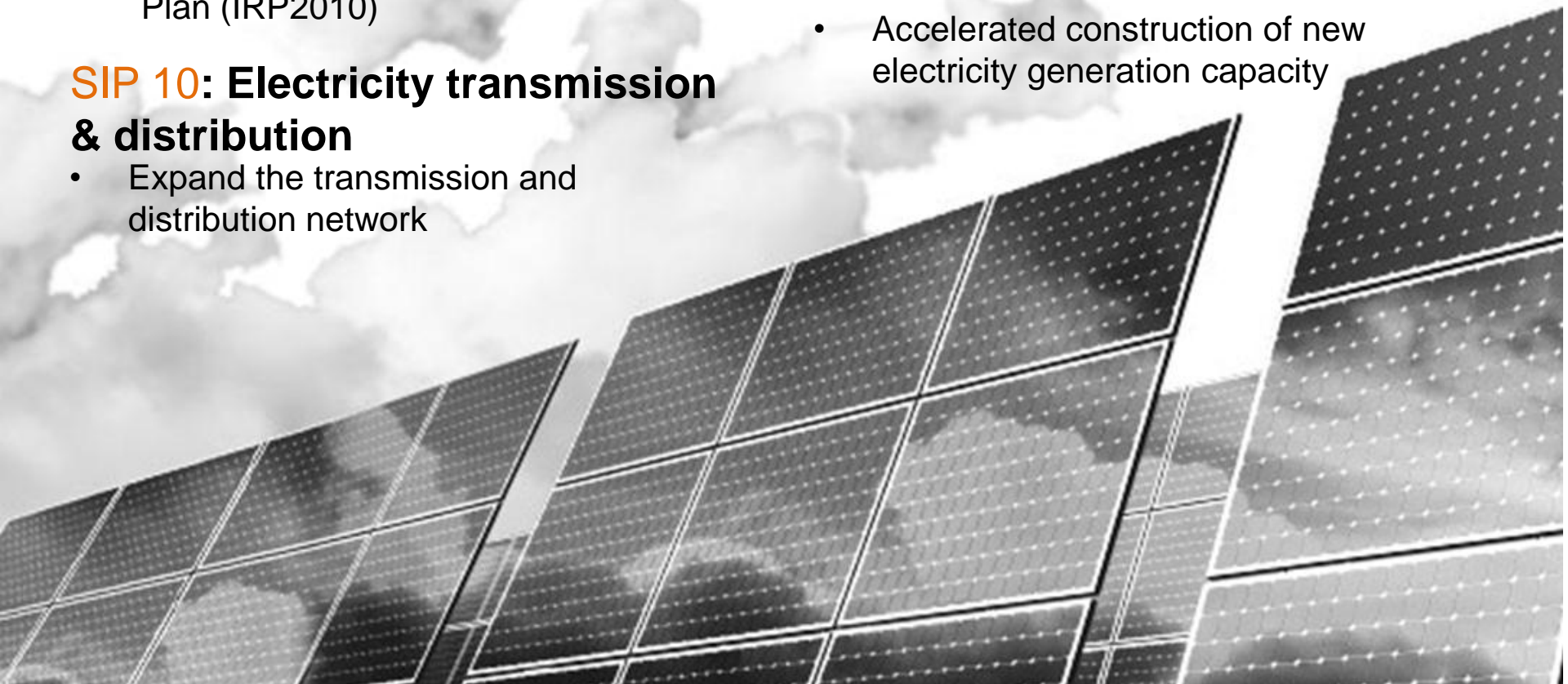
- Roll out of the Integrated Resource Plan (IRP2010)

SIP 10: Electricity transmission & distribution

- Expand the transmission and distribution network

SIP 9: Electricity generation to support socioeconomic development

- Accelerated construction of new electricity generation capacity

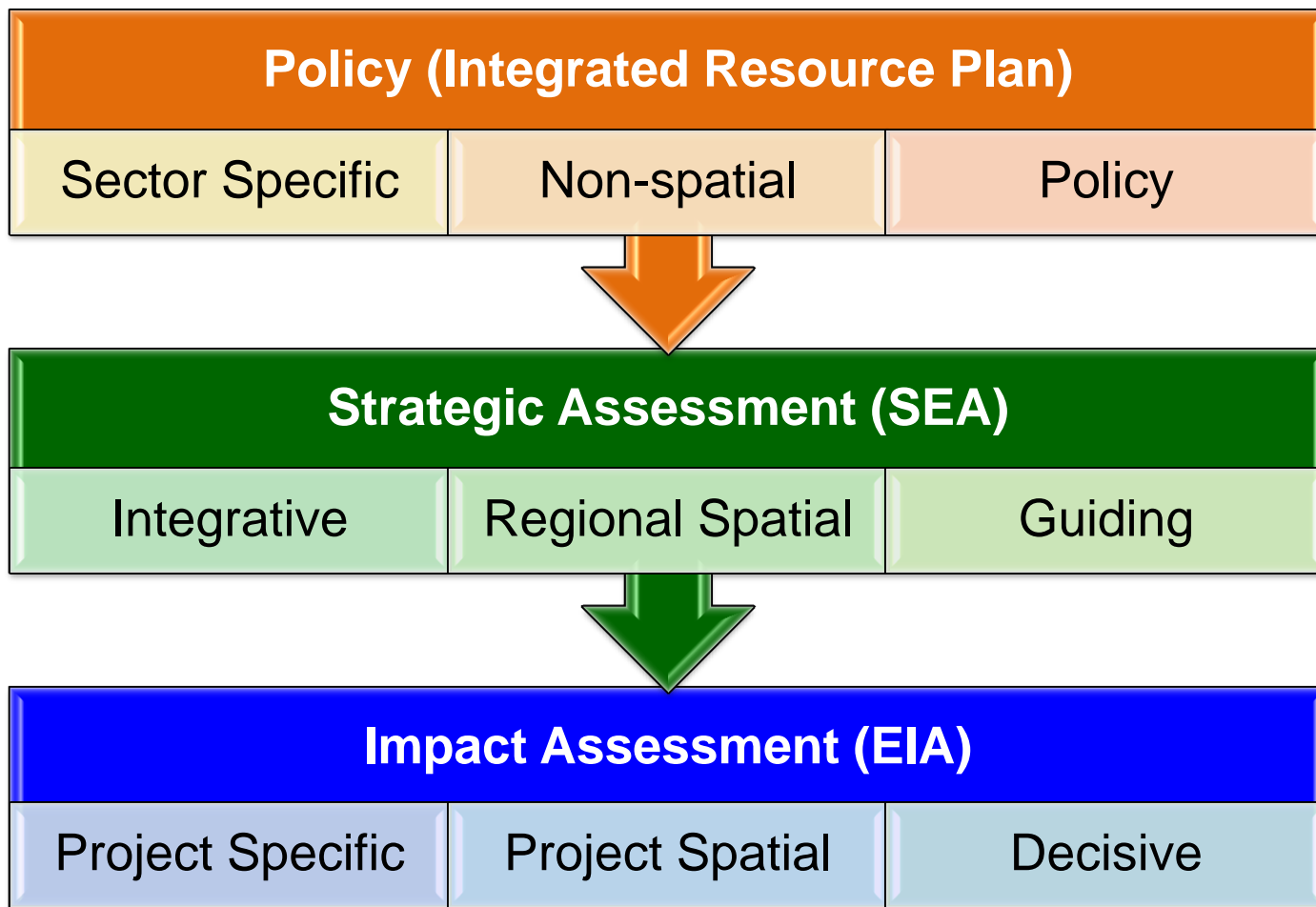


Strategic Environmental Assessment (SEA)

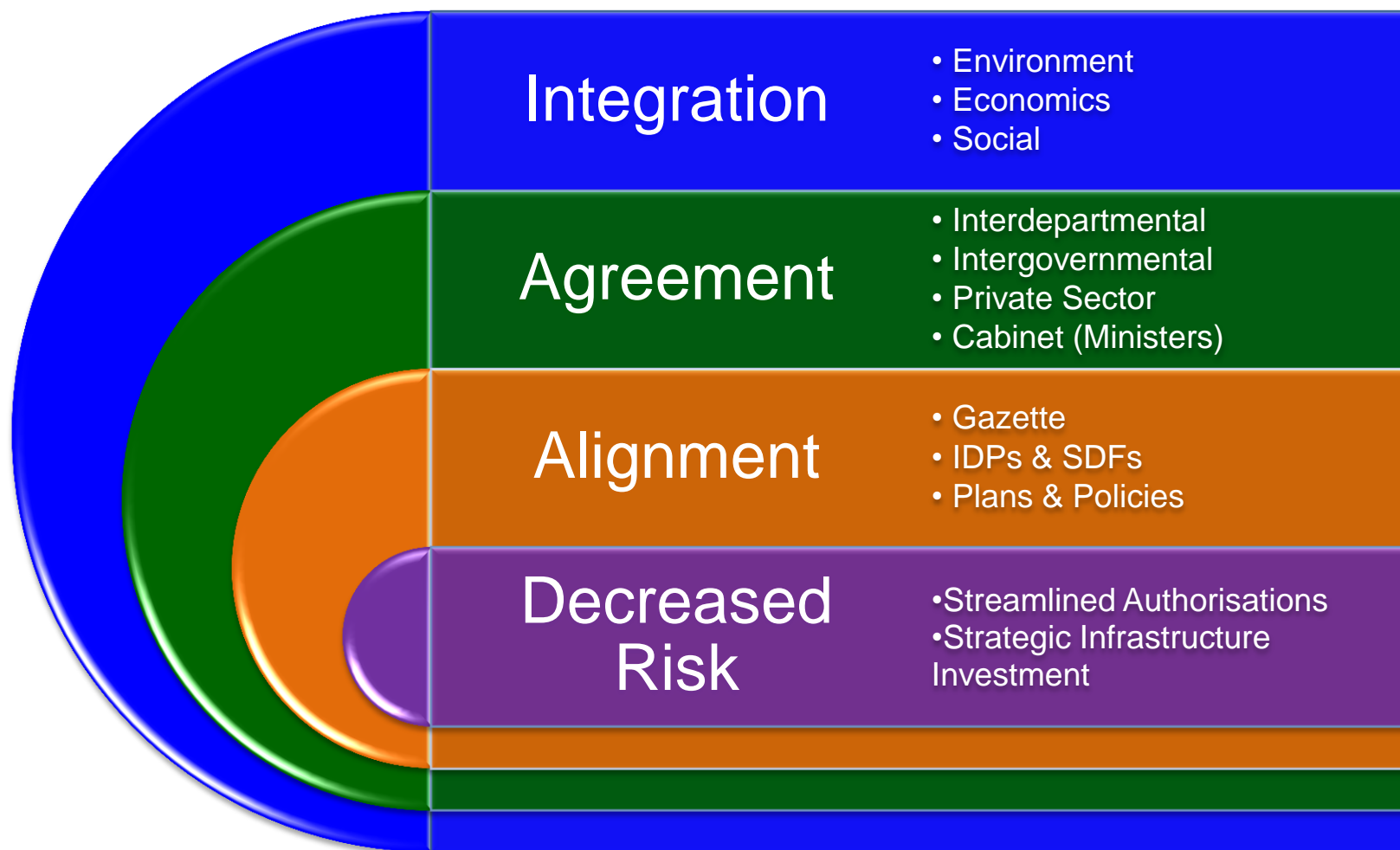
- **SEA** - determine the environmental implications of policies, plans and programmes.
 - ✓ Guiding role; identifying strategic development areas
 - ✓ Advocacy role; raising the profile of the environment.
 - ✓ Integrative role; focusing on combining environmental, social and economic considerations.
- **Strategic approach** allows development to be viewed at a regional scale
 - Mandated by DoE and MEC's responsible for the environment
 - Support from National Treasury
 - Support of the Portfolio Committee for Water & Environment for a more strategic approach



Where does the SEA fit?



What does the SEA aim to do?



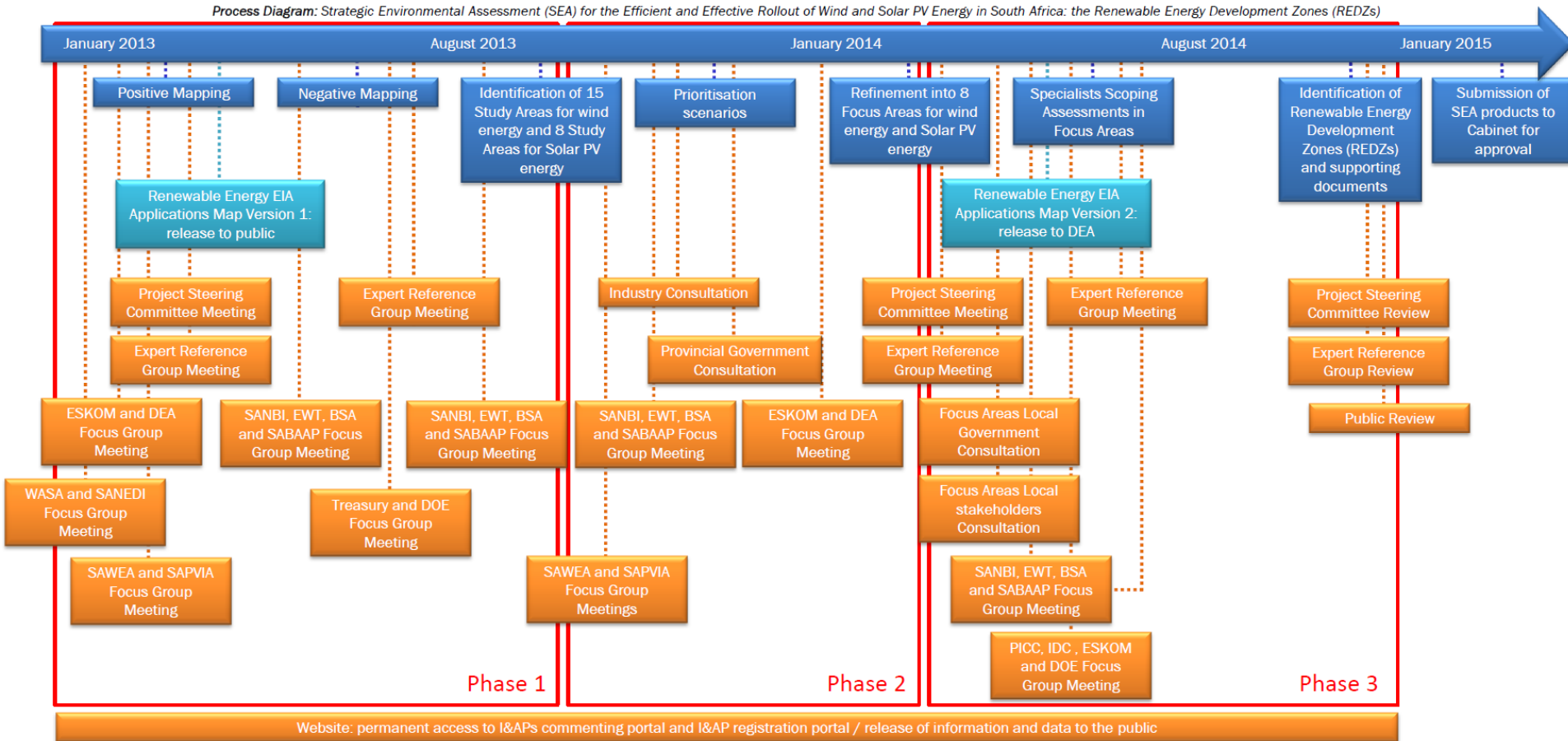
What are REDZs?

Renewable Energy Development Zones (REDZs): gazetted geographical areas

- In which clusters (several projects) of wind and solar PV development will have the lowest negative impact on the environment while yielding the highest possible social and economic benefit to the country;
- That are widely agreed to have strategic importance for wind and solar PV development;
- Where the environmental and other authorisation processes have been aligned and streamlined based on scoping level pre-assessments and clear development requirements; and
- Where proactive and socialised investment can be made to provide time-efficient infrastructure access

Process Diagram

Process Diagram: Strategic Environmental Assessment (SEA) for the Efficient and Effective Rollout of Wind and Solar PV Energy in South Africa; the Renewable Energy Development Zones (REDZs)

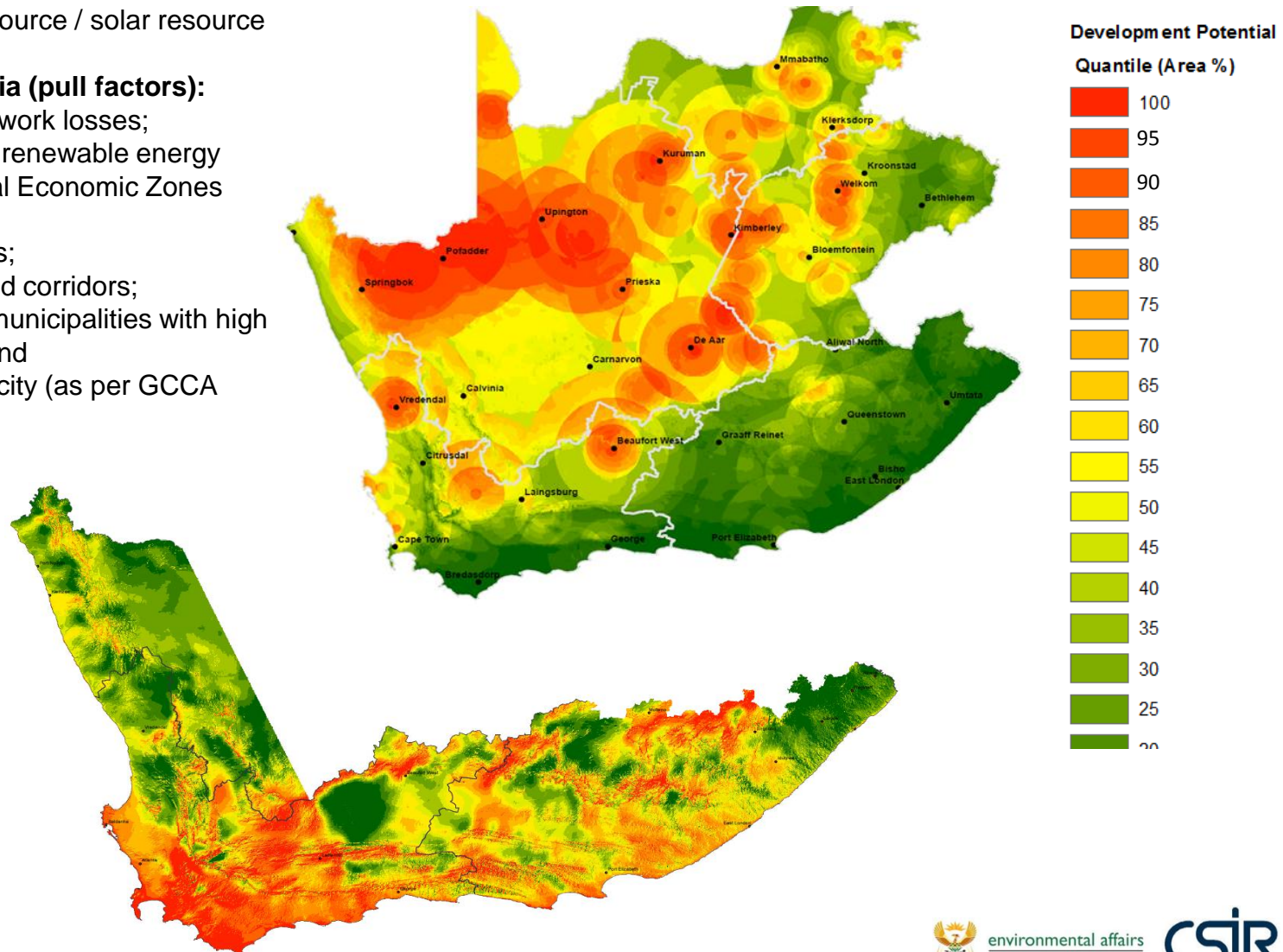


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Positive Mapping: Development Potential

- **Base data** = wind resource / solar resource
- **Normalization Criteria (pull factors):**
 1. Generator network losses;
 2. DTI proposed renewable energy related Special Economic Zones (SEZs);
 3. Industrial ports;
 4. Solar and Wind corridors;
 5. Seat of local municipalities with high social need; and
 6. Network capacity (as per GCCA substation).

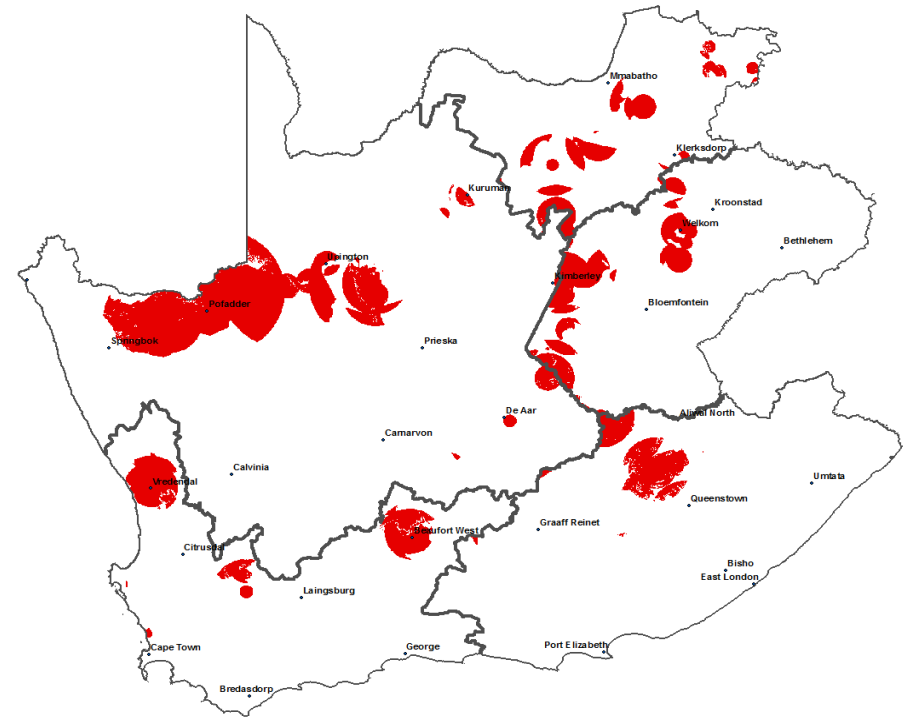
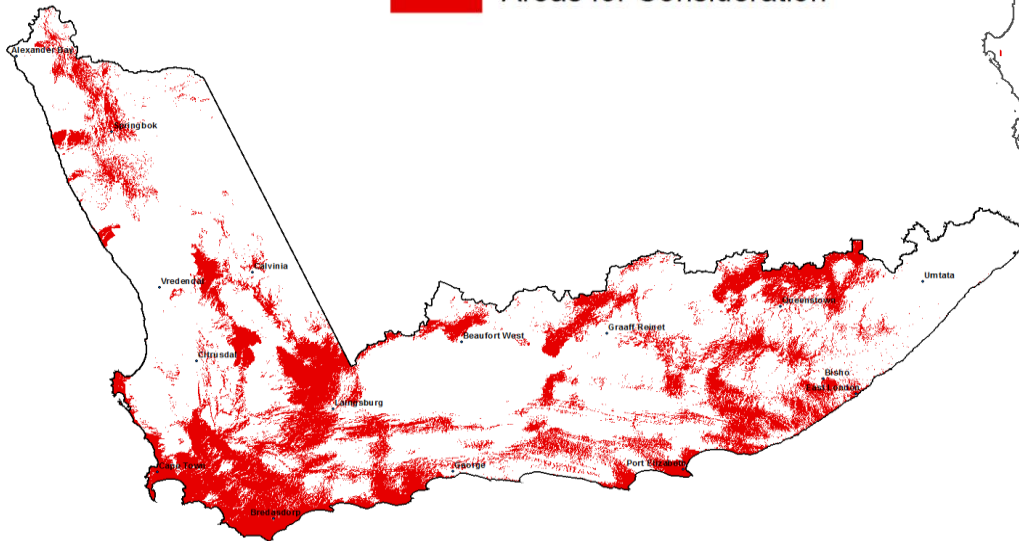


Positive Mapping: Top Development Potential Per Province

Legend



Areas for Consideration



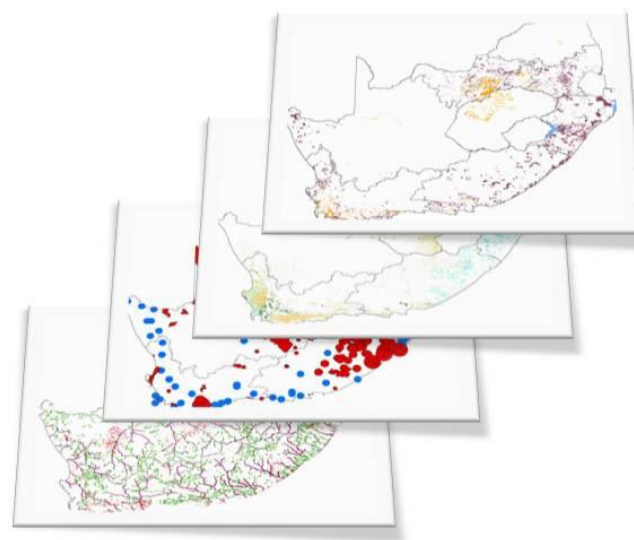
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Negative Mapping: list of attributes

	Attributes	Wind Buffer	Solar Buffer
RE Applications			
National RE Applications		n/a	n/a
Natural			
SANBI Core Protected Areas	Forest Act Protected Areas	500m	500m
	Island Reserves	500m	500m
	Local Nature Reserves	500m	500m
	Marine Protected Areas	500m	500m
	Mountain Catchment Areas	500m	500m
	National Botanical Gardens	500m	500m
	Protected Environment	500m	500m
	Provincial Nature Reserves	500m	500m
	Special Nature Reserves	500m	500m
	World Heritage Sites	500m	500m
DEA Protected Areas	National Parks	500m	500m
	Special Nature Reserves	not considered	not considered
	Forest Nature Reserves	not considered	not considered
	Forest Wilderness Areas	not considered	not considered
	Marine Protected Areas	not considered	not considered
	Mountain Catchment Areas	not considered	not considered
	Nature Reserves	not considered	not considered
	Protected Environment	not considered	not considered
	World Heritage Sites	not considered	not considered
	National Parks	not considered	not considered
Ramsar sites	All	500m	500m
Critical Biodiversity Areas (CBAs)	Irreplaceable	none	none
Remaining Threatened Ecosystems	Critically Endangered Ecosystems	none	none
	Endangered and Poorly Protected Ecosystems	none	none
Threatened Forests	All	none	none
Coast (including estuaries)	Coastline & Estuaries	1km	1km
Strategic Water Source Areas	>135 mm/annum rainfall (8 % of country contributing 50% Rainfall)	not considered	not considered
	>220 mm/annum rainfall (30 % of country's rainfall)	not considered	none
Rivers	River FEPAs	100m	100m
	NFEPA Rivers Order 3-7	100m	100m
	River FEPAs Sub-Catchment	not considered	not considered
Wetlands	Wetland FEPAs	100m	100m
	Wetland clusters	none	none
	Wetland non-FEPAs	not considered	not considered
Birds	Specific IBAs in whole	none	not considered
	Amur falcon colonies	10km	1km
	Bearded vulture nests	20km	2km
	Lesser Kestrel colonies	10km	1km
	Priority vulture colonies	20km	2km
	Largest vulture colonies	40km	4km
	Potberg vulture colonies	40km	4km
	Transkei vulture IBA	none	not considered
	Saldanha flyway	none	not considered
	Verlorenvlei flyway	none	not considered
Bats	Lower Breede River	20km	not considered
	Major Bat Roosts (> 500 bats)	20km	2km

	Attributes	Wind Buffer	Solar Buffer
Land Use			
Land Capability	Class 1-3	none	none
Field Crop Boundaries	Horticulture & Viticulture	none	none
	Pivots	none	none
	Shadenet	none	none
	Tea Plantations	none	none
Square Kilometer Array	Annual Crop Cultivation / Planted Pastures Rotation	not considered	none
	Telescope Sites	20km	10km
South African Astronomical Observatory			
Buildings	All	5km	5km
		300m	300m
Roads	Major Roads (national, arterial, main)	500m	500m
	Secondary Roads (secondary)	500m	500m
	Tourist Routes (W/C)	2km	2km
Railway	All	300m	300m
Power lines and substations	Existing Transmission & Distribution + 2022 Planned Transmission	300m	300m
	Major Airports	35km	not considered
Airports	Landing Strips	1km	not considered
	Military Airforce Bases	27 km	not considered
Telecommunication towers	>20 m	500m	500m
Mining Rights	All	not considered	not considered
Technical			
Slope	Slope > 10%	none	none
Resource	Wind Power Density	n/a	n/a
	Global Horizontal Irradiance	n/a	n/a

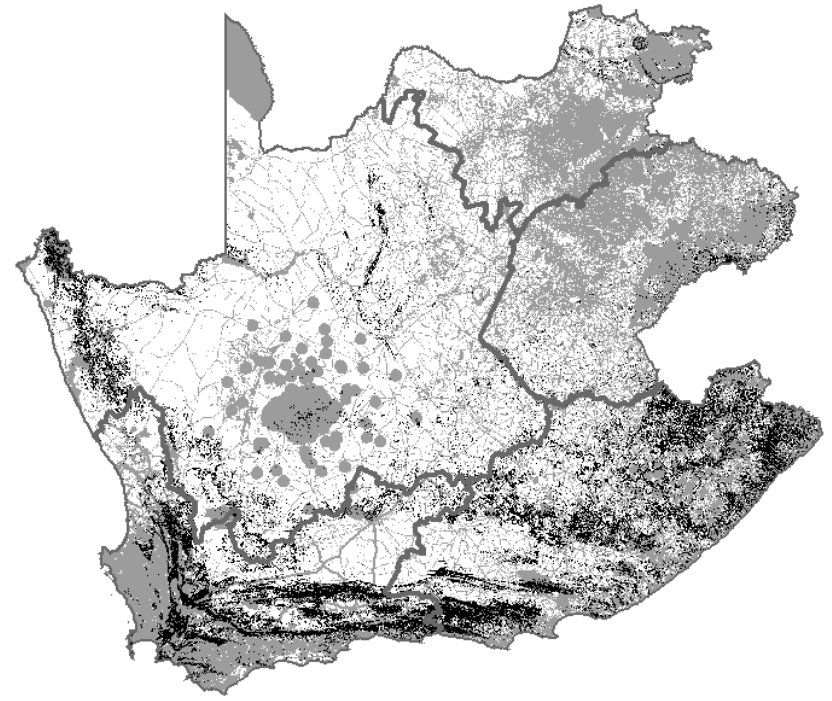
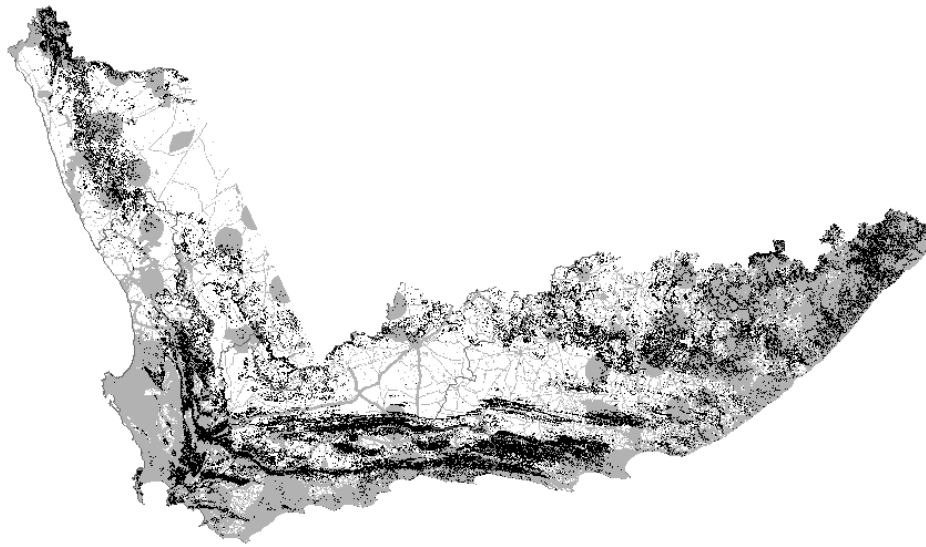


GIS OVERLAY

Negative Mapping: Exclusion Mask

Legend

- Exclusion Mask
- Slope >10 Degrees



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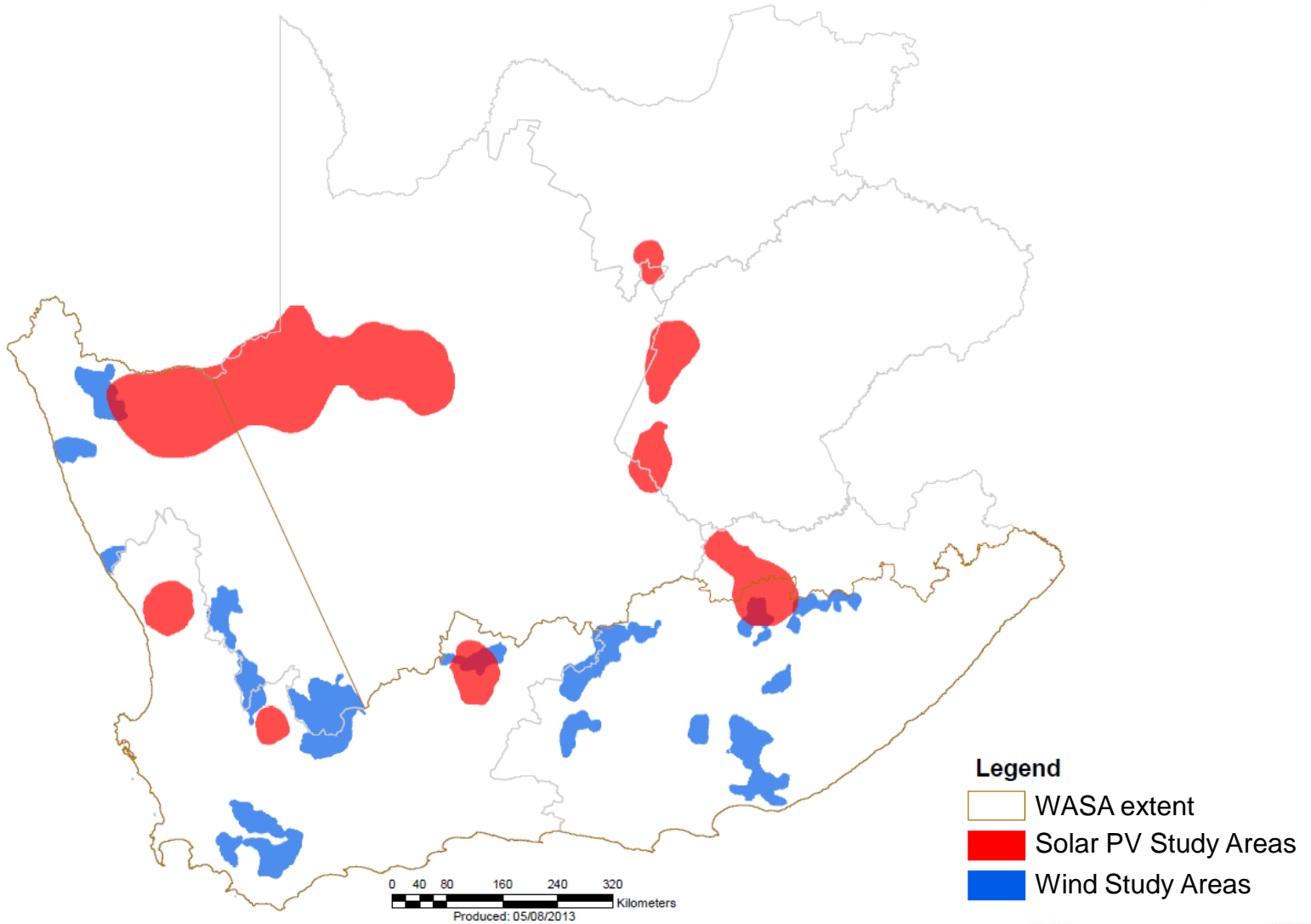
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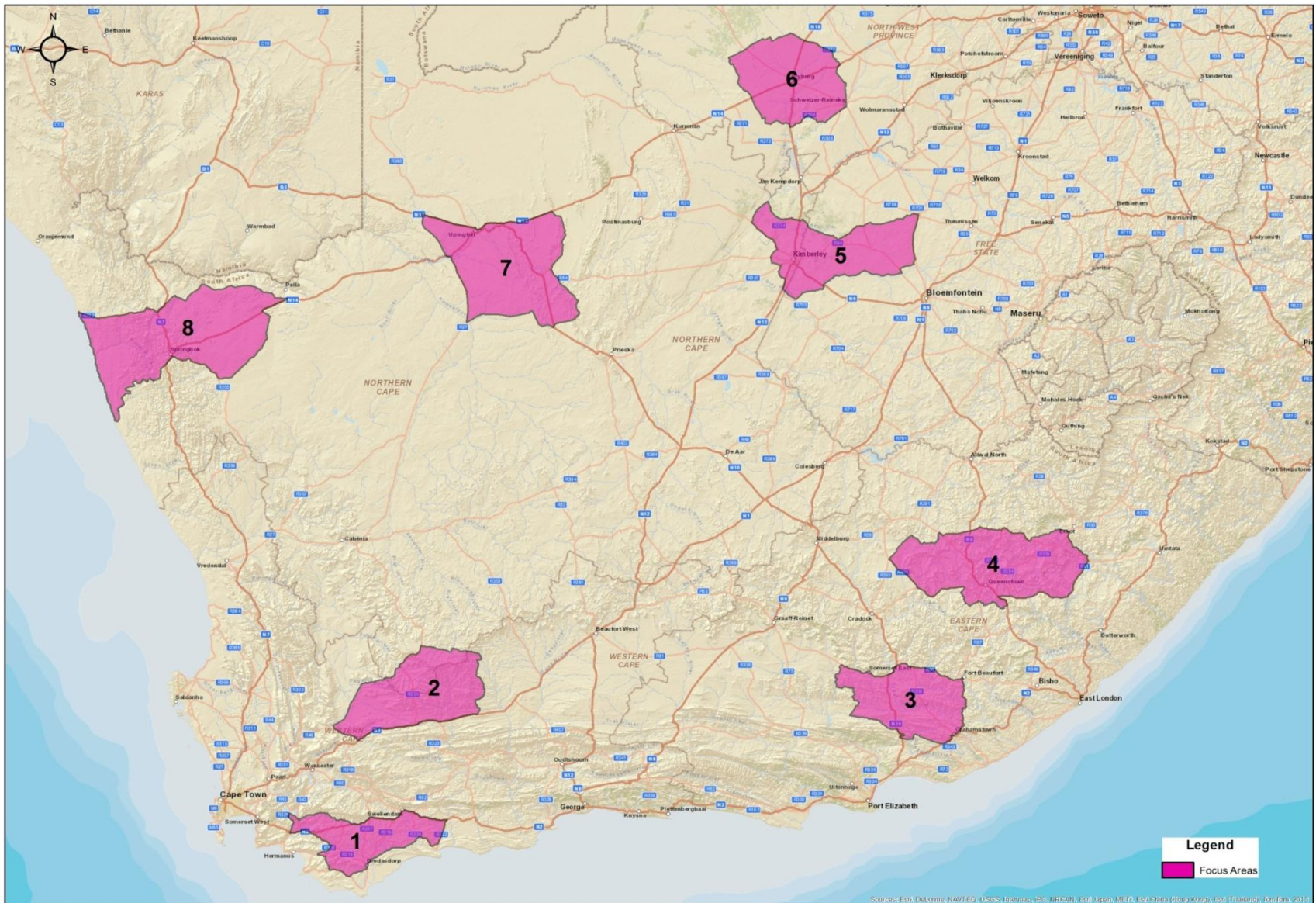
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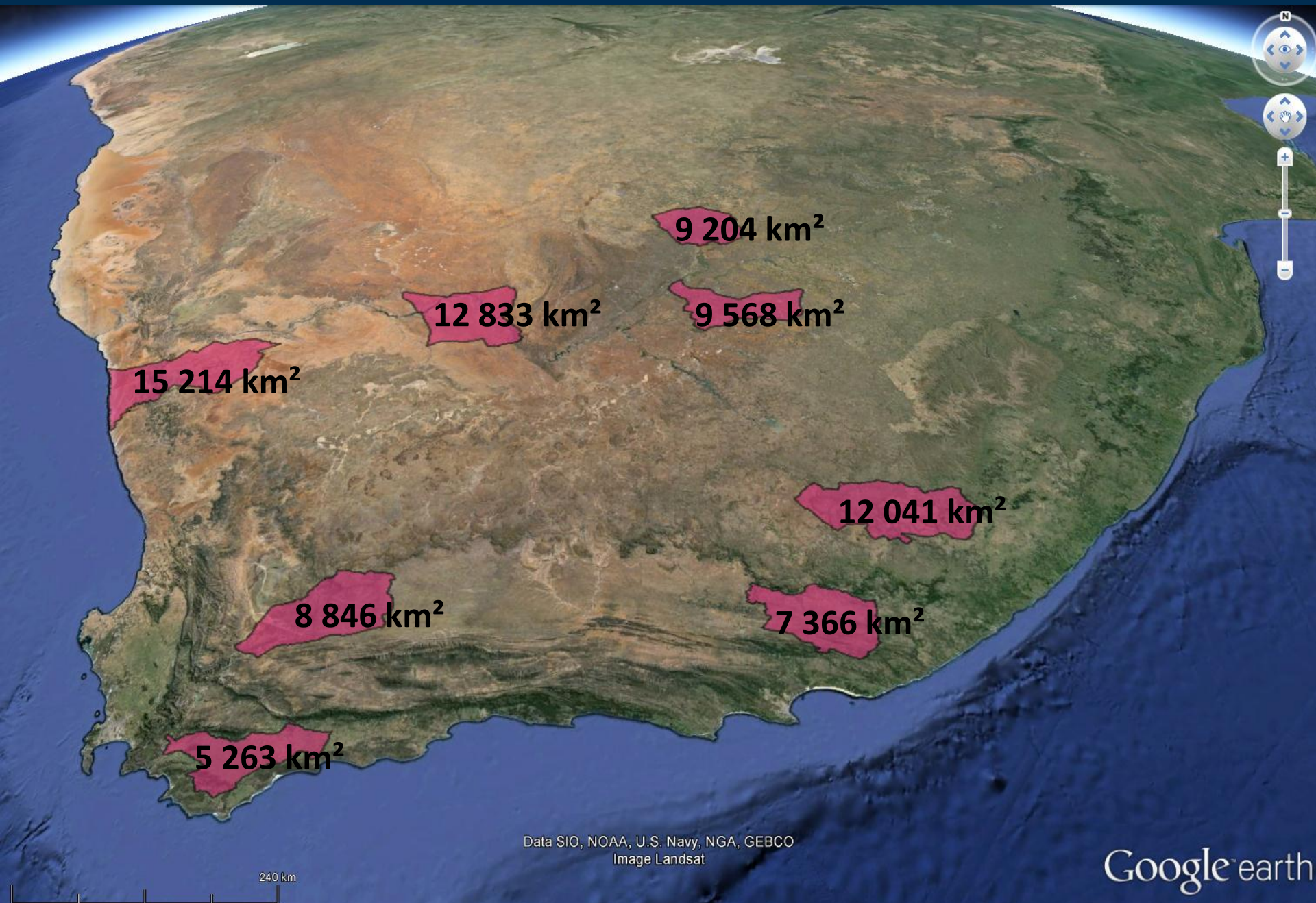
Phase 1 Study Areas



Phase 2 Focus Areas

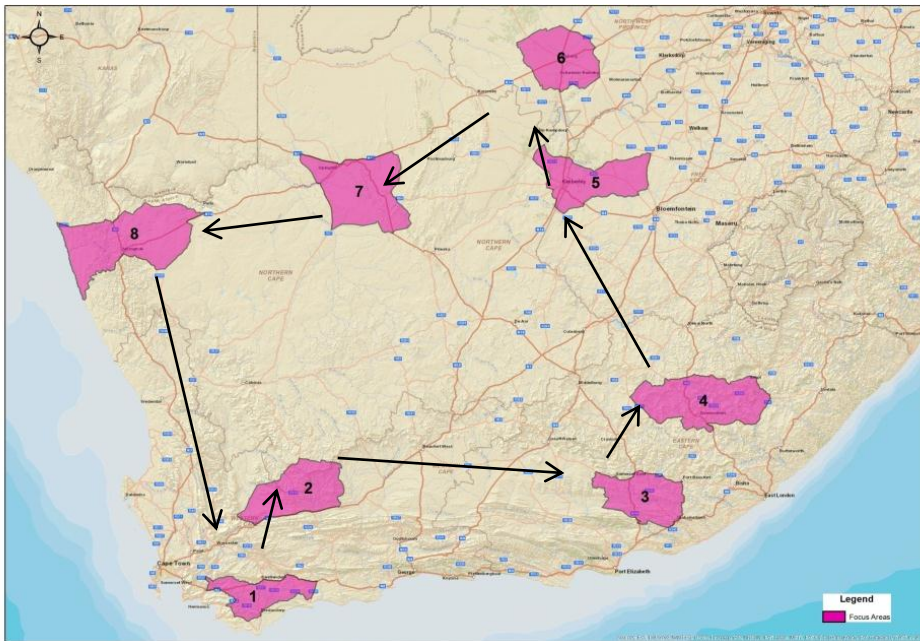


Size of the 8 Focus Areas in km²



Public Consultation

- Collect additional information available at local and regional levels
- Consult the local stakeholders
- Introduce the concepts of protocol and REDZs



Meeting Town	Venue	Date and Time
Bredasdorp	Nelson Mandela Hall	18 March 2014 17:30-19:30
Laingsburg	Tourism Auditorium Hall	19 March 2014 17:30-19:30
Grahamstown	Grahamstown Recreation Hall	24 March 2014 17:30-19:30
Queenstown	Queenstown Town Hall	26 March 2014 17:30-19:30
Kimberley	Kimberly City Hall	31 March 2014 17:30-19:30
Vryburg	Huhudi Hall	02 April 2014 17:30-19:30
Upington	Toi Speelman Hall	03 April 2014 17:30-19:30
Springbok	Show Hall	07 April 2014 17:30-19:30

Scoping Assessment: Specialists team

- **Specialist Scoping Assessment** to be conducted in the 8 focus areas:
 1. Terrestrial and Freshwater Aquatic Biodiversity Assessment
 2. Agricultural Assessment
 3. Bat Assessment
 4. Bird Assessment
 5. Heritage Assessment
 6. Landscape/visual Assessment
 7. Socio-economic Assessment



Field of Study	Specialist Team Member	Specialist Study Reviewers
Terrestrial and Freshwater Aquatic Biodiversity	<ul style="list-style-type: none"> • Andrew Skowno PrSciNat Ecology • Simon Todd PrSciNat Ecology • Kate Snaddon PrSciNat Ecology • Justine Ewart-Smith PrSciNat Ecology 	<ul style="list-style-type: none"> • SEA team • South African National Biodiversity Institute (SANBI) • National Department of Water Affairs (DWA)
Agriculture	<ul style="list-style-type: none"> • Johann Lanz PrSciNat soil science 	<ul style="list-style-type: none"> • SEA team • Department of Agriculture, Forestry and Fisheries (DAFF)
Bats	<ul style="list-style-type: none"> • Kate McEwan PrSciNat Zoology and Environmental Science 	<ul style="list-style-type: none"> • SEA team • South African Bat Assessment Advisory Panel (SABAAP) • Endangered Wildlife Trust (EWT)
Birds	<ul style="list-style-type: none"> • Dr Andrew Robert Jenkins, Pr. Sci. Nat. Zoology and Ecology 	<ul style="list-style-type: none"> • SEA team • Birdlife SA • Endangered Wildlife Trust (EWT)
Heritage	<ul style="list-style-type: none"> • Wouter Fourie CRM Accreditation (ASAPA) • Dr John Almond APHP Accreditation • Dr Jayson Orton CRM Accreditation (ASAPA) 	<ul style="list-style-type: none"> • SEA team • South African Heritage Resource Agency (SAHRA)
Landscape / Visual	<ul style="list-style-type: none"> • Quinton Lawson Reg. SACLAP • Bernard Oberholzer Reg. SACLAP 	<ul style="list-style-type: none"> • SEA team • South African Heritage Resource Agency (SAHRA)
Socio-economic	<ul style="list-style-type: none"> • Elena Broughton 	<ul style="list-style-type: none"> • SEA team • PICC • DoE

Key notes on REDZs

- Not intended to limit current or future development outside REDZs
- Intended to be a reiterative process (intervals)
- Currently only focus areas
- Only has legal status once gazetted
- Finalisation of SEA study by end-2014
- Cabinet approval and gazetting aimed for mid-2015

