

# Renewable Energy Zoning

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*Country Support and Partnerships*

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# Renewable Energy Zoning

A multi-criteria spatial analysis of renewable energy resources identification of cost effective, realistically achievable RE resource development zones/project opportunity areas.

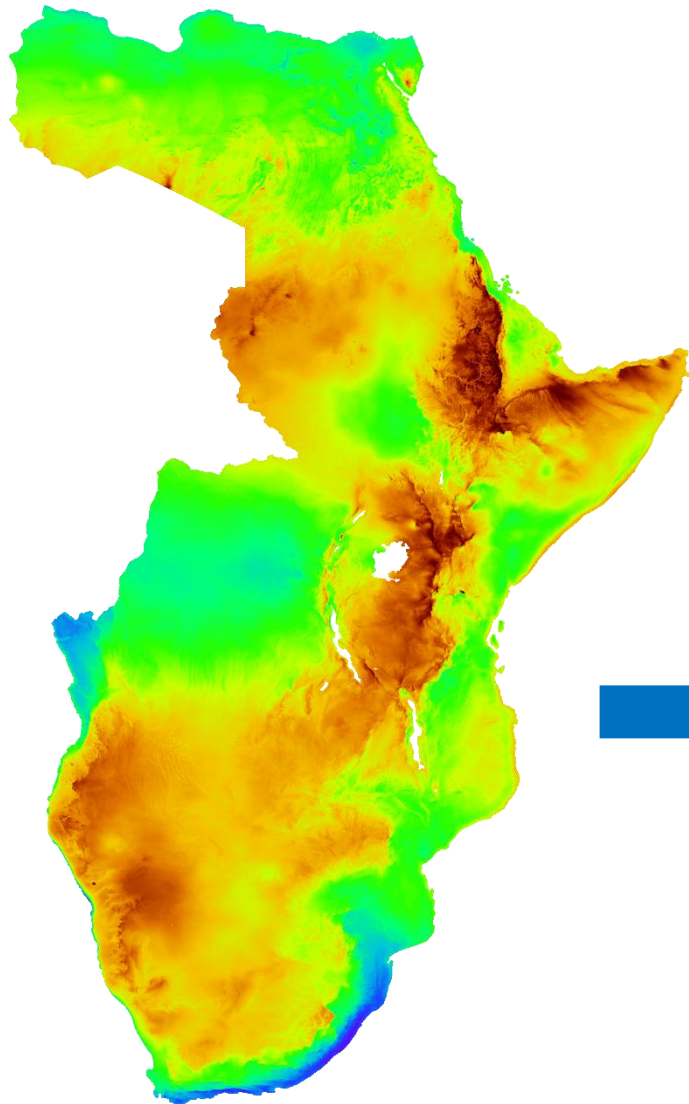
## Objectives

- Facilitate coordinated planning for **cost-effective, environmentally sustainable, realistically achievable** development of RE resources.
- Inform **long-term transmission planning** and leverage existing and planned electricity infrastructure to promote more rapid development of RE plants.

## Scope of the Study

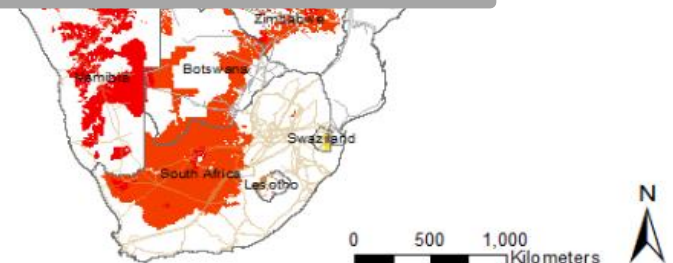
- Resource assessment and zoning for Wind, solar PV, and solar CSP in the Eastern and Southern African Power Pool countries.

# Overview of RE Zoning process

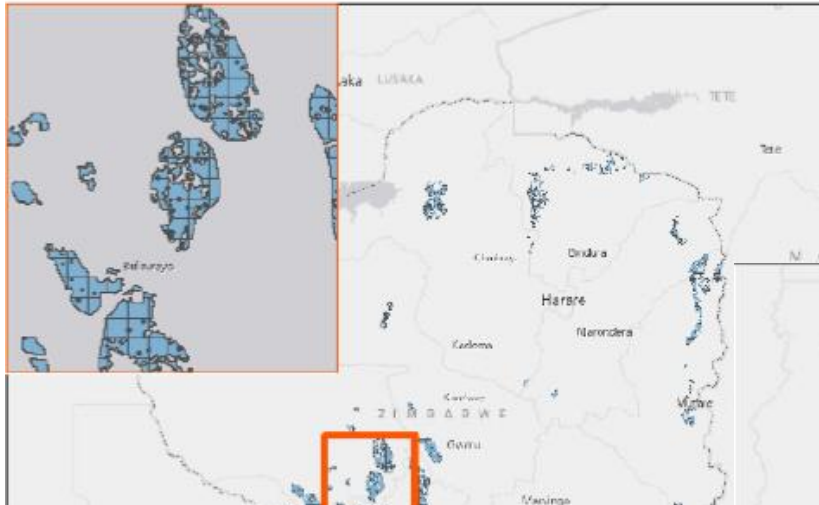


## THRESHOLD EXCLUSION CRITERIA:

- Resource quality (e.g.  $<250 \text{ W/m}^2$ )
- Elevation (e.g.  $>2500\text{m}$ )
- Slope (e.g.  $> 5\%$ )
- Protected areas
- Water bodies, airports, railroads etc.
- Population density (e.g.  $>100/\text{km}^2$ )
- Land-use, land-cover.
- Distance to existing/planned grid
- Distance to road, substation
- Distance to RE projects
- etc.

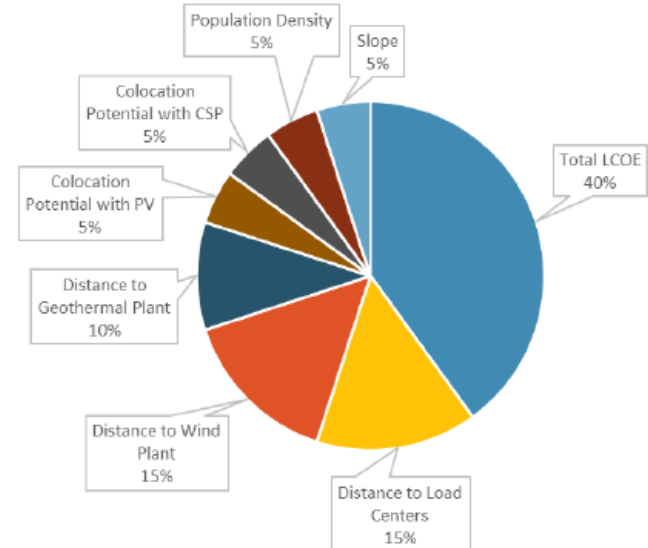


# Overview of RE Zoning process

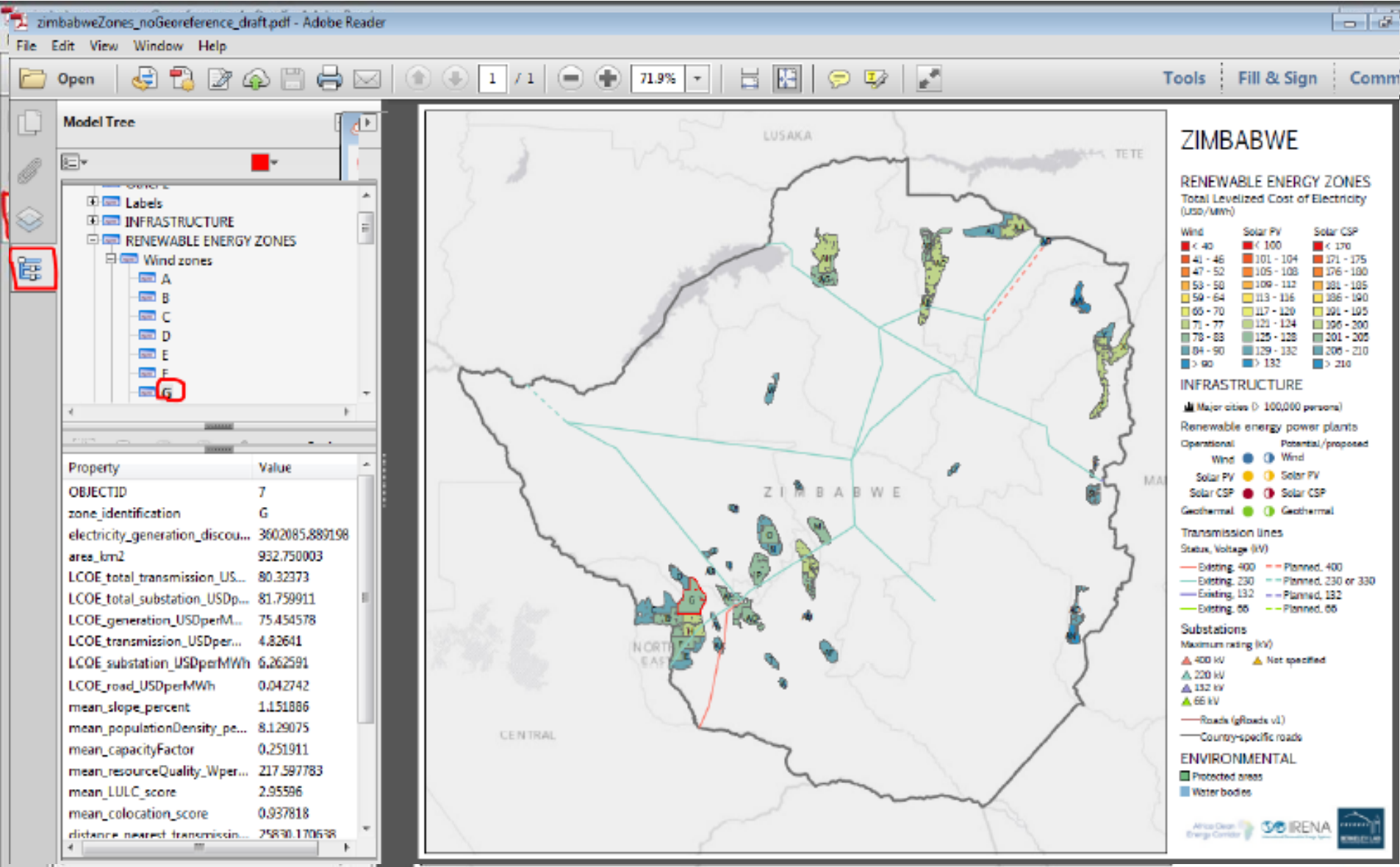


## Zone ranking criteria

Criteria	Criteria value range (score)
Distance to load center	0 km (1) – 100 km + (0)
Distance to existing or proposed wind (PV or CSP) plant	0 km (1) - 25 km (0)
Distance to existing or proposed geothermal plant	0 km (1) - 25 km (0)
Distance to any existing or proposed RE plant	0 km (1) - 25 km (0)
Overlapping potential with other RE technologies	Binary: No overlap (0) or overlap with one other RE technology (0.5), or overlap with both other RE technologies (1).
Land use / land cover	See corresponding LULC categories in Table 3: 1 (1) – 5 (0)
Population density	0 (1) -100 (0) persons/km <sup>2</sup>
Slope	0% (1) – 5% (0) for solar; 0% (1) – 20% (0) for wind
Capacity value	Minimum (0) and maximum (1) value of the ratio of capacity value to capacity factor of each technology by country or across the ACEC



## Outputs of the study



# Capacity Building



Abu Dhabi  
January 2014

Johannesburg  
February 2014

Addis Ababa  
September 2014

Harare  
October 2014



Nairobi  
September 2015

**Thank you!!**