REQUEST FOR QUOTATION (RFQ)

Terms of Reference: Mining Rights GIS Mapping

Geographical Information Systems (GIS) technical service provider to develop an interactive land use planning map for the Mpumalanga region for use by project developers and policy decision makers

Established in 2010, GreenCape is a non-profit organisation that drives the widespread adoption of economically viable green economy solutions from South Africa. GreenCape works with businesses, investors, academia, and government to unlock the investment and employment potential of green technologies and services, and to support a transition to a resilient green economy. Our aim is to be globally relevant in driving the uptake of green economy infrastructure solutions in the developing world.

One of our current projects for The Royal Danish Embassy focuses on unlocking the land use barriers in Mpumalanga through assessing the land use challenges that renewable energy developers face due to mining activities in the province.

As part of this project, we require a service provider to process supplied data into layers and incorporating it into a GIS map that can be accessed online. The service includes sourcing a separate hosting platform, providing all the raw data into a downloadable format, providing an easy to use user experience for the map and training to GreenCape staff.

Interested organisations are invited to submit quotations to undertake this work.

BACKGROUND TO THE PROJECT

A project was conceptualized to enhance the livelihoods of the residents of the Mpumalanga Province by creating employment an enhancing basic service delivery through leveraging resilient infrastructure opportunities in the Green Economy. This project included three components: alternative basic service delivery, the SAWEA EnergyDRIVE and mining rights mapping and planning. This RFQ is focussed on the latter, which aims to create an injection of wealth into the area to replace the loss of the coal industry through focussed work to unlock barriers to the development of renewable energy projects.

There is significant demand for new sites for large-scale renewable energy in Mpumalanga. Mining rights have long been an issue for developing projects in South Africa, with the mining rights taking preference to any above-ground activities. This problem has been easily resolved across the rest of the country, where mining is much less prolific. However, in Mpumalanga, there is significantly more mining activity than in typical renewable energy hotspots such as the Northern and Western Cape. Given the available grid capacity in Mpumalanga, if the land availability barrier is addressed, significant additional private sector investment could flow into the province.

GreenCape engaged with various stakeholders in order to source the necessary land use data. A large amount of data could be sourced, but their formatting is not always compatible and the key data sets related to mining and exploration rights are still absent. However, the map needs to be developed within the given timeframe, which will require an element of keeping a specific data open and allowing for its addition at a later stage.

SCOPE OF WORK

The scope can be broken up into four components:
1. Data processing
2. GIS map development and user interface
3. GIS map hosting and maintenance
4. Client support

The service provider must provide the following as part of their quotation:
- Cost breakdown that includes platform development and 6-monthly maintenance for a 2-year period.
- Costing for long term annual hosting.
- Initial illustrations of the proposed user interface (simple images and mock-ups are suitable)
- Description of capability, accessibility and maintenance by GreenCape's staff.
- Clear indication of scope components that cannot be met and additional scope that could benefit the project.
- Clear timelines for final delivery of the platform.

1.1. Data processing

Various data sets are available, listed in Table 1. Some of these data sets need to be converted into a suitable GIS format layers for the Mpumalanga province. Reducing the size of National data sets must improve the latency and load times and add to a smooth user experience.

Generic base data must be selectable, which includes: Aerial (Satellite) map, Streets map and a Light canvas. The individual GIS data sets should be provided, to allow individual downloads by the user.
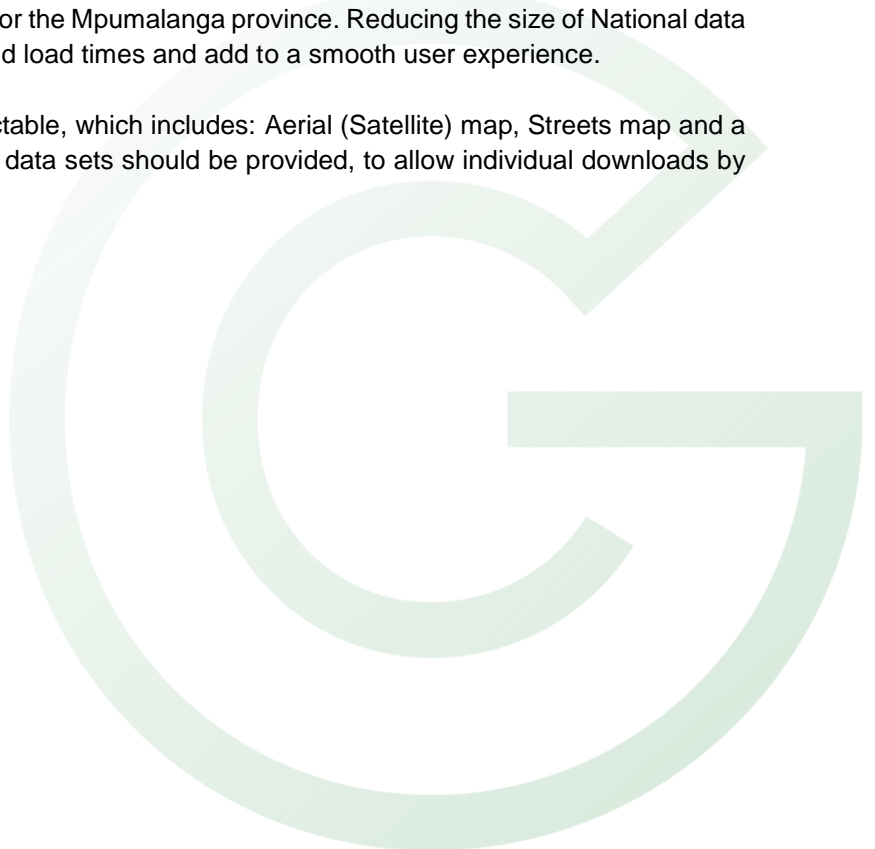
Table 1: Format and source of the data sets that require processing.

Data set name	Content	Format available	Source	Processing required
Farm portion map	• Allotment Township • Farm Portion • Parent Farm • Proclamation area Although other data sets are also present in these files, they will not be incorporated.	GIS data (.shp, .prj, .dbf, .shx)	Department of Agriculture, Land Reform and Rural Development. GreenCape has a copy of the data set that can be used.	None, already in format and limited to the spatial boundaries of Mpumalanga .
Critical Biodiversity Areas Map	Categories include: • Critical Biodiversity Area • Ecological Support Area • Heavily or moderately modified • Other Natural areas • Protected Areas	GIS data (.shp, .prj, .dbf, .sbx, .shx)	Mpumalanga Biodiversity Sectoral Plan. GreenCape has a copy of the data set that can be used.	All Biodiversity categories are currently captured in a single dataset; this should be separated into subsets. The subsets covers Mpumalanga, as required.
Important birds area map	Important Birds areas	GIS data (shp., prj. Etc.)	Birdlife South Africa. GreenCape has a copy of the data set for the whole country that can be used.	A South African map that needs to be reduced to only cover Mpumalanga.
Operating mines	Mine names, owners, address, contact details, entity and mining types, commodity, farm names.	Microsoft Excel document (See sample image in Annex C)	Department of Mineral Resources and Energy. GreenCape has an excel file containing the data for the whole of South Africa, which can be filtered to only display Mpumalanga sites. The data does not currently provide coordinates; it only provides property names, and some data cannot be matched directly. This will require various filtering processes to identify usable data, potential digitising of sites and the identification and consolidation of coordinates to be imported in GIS-usable formats.	Excel data to be overlaid (joined and/or related) to the Farm portion map to link mining activity with specific farm and portions.

				Data to be converted into a usable GIS layer.
Mining and exploration rights data	None	None	The data is not yet available; allocation should be left to incorporate the data at a later stage.	Once available, the attributes will be supplied to the service provider to attach a spatial layer and map the data. It will likely be Excel based data with coordinates or farm names.
Wind Atlas South Africa	Multiple data sets exist, but only the MEAN WIND SPEED @100m, data will be used.	GIS (downloadable, see link to the right)	http://wasadata.csir.co.za/wasa1/WASAData?pscreen=resource2021&pemail=ulrich@green-cape.co.za	Data is currently only available Nationally. This is to be extracted and limited to the geographical boundaries of the Mpumalanga region.
Renewable Energy Environmental Impact Assessment Database	REEA data	GIS (downloadable, see link to the right)	Available online under "South African Renewable Energy EIA Application Database (REEA)": https://egis.environment.gov.za/data_egis/data_download/current	National data is available, data is to be extracted and limited to the geographical boundaries of the Mpumalanga province.
Eskom Grid infrastructure map	• Existing lines • Existing substations • MTS subs2022 • Planned lines • Planned substations • Supply Areas Steady State Limit	GIS (downloadable, see link to the right)	https://www.eskom.co.za/eskom-divisions/tx/gcca/gcca-2022-update-interactive-map/	National data is available; data is to be extracted and limited to the geographical boundaries of the Mpumalanga province.
Points of interest	• Existing power plants with end-of-life date	Microsoft Excel datasheet	GreenCape created a list of the existing power plants in the province, together with their closure dates. The list is an excel sheet with a list of power plants with coordinates that should be matched with Farm portions.	Data needs to be incorporated into a GIS map

Notes:

- It the service provider is in possession of more up to date datasets, they should inform GreenCape of this dataset and the ability to use it.
- Some of the above datasets may change at the time of implementation.
- Mining rights data is not yet available, as such, the GIS map should allow for its integration at a later stage. Sourcing of the mining rights data is not part of the scope of this project.

1.2. GIS maps development and user interface

The map is designed to be used by policy decision makers that are not familiar with GIS tools. The user interface need to be simple and easy to understand. The following capabilities and limitations should be implemented to simplify the functionality.

1.2.1. Capability

The following functionality should be incorporated into the model for external users:
- Layer selection: Each layer should be switched on/off and visually displayed on the map
- Farm portion/object selection: Selecting an object should enable the user to view related data on the object. Multiple objects should be selectable.
- Search function: A search functions should allow the user to search the layers, such as Farm Names, Project Names, Substations, etc. The subset layers for the selection should be listed when a user selects the dataset.
- Buffer zone selection: The user must be able to create a buffer of their choice (in m) around selected data
- Print function: Print/save the map as viewed including the selected data sets.
- Export function: Export the user selection as JPEG, BMP, PNG and PDF.
- Ability to report bugs, issues, or requests. The service provider will be informed of any site issues and will be responsible for resolving it.

The service provider may recommend additional functionality that may add value, based on their own experience with map development.

The following capability should be incorporated for GreenCape staff:
- Ability to edit the data components for the data set (names, values, etc.)
- Ability to upload large data sets (possibly through a fixed format excel sheet or similar)
- Ability to track map usage (user numbers, engagement times, location of access)
- Track usage of site, quantity and country of origin of users

All processed data should be provided individually to GreenCape in GIS file format.

1.2.2. Limitations

To ensure unintended consequences, the user must be limited in the choices and capabilities. These limitations should include the following:
- Zoom limitation: The ability to Zoom out should be limited to the size of the Province, with a small buffer for visual purposes. The Zoom in function should be limited to zooming into the smallest land parcel.
- Editing should be restricted, no editing should be allowed by users.

1.3. GIS Hosting and management

The service provider should provide a separate GIS hosting platform for a minimum period of 2 years, with the option of extension. Annual hosting costs should be included separately.

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Company Registration No. 2012/039750/08
Refer to the GreenCape website for director details

The service provider will develop/source the hosting platform and provide a link to GreenCape, which GreenCape will add to the Mpumalanga Green Cluster Agency website (https://mpumalangagreencluster.co.za/), which will *redirect* the user to the GIS user interface.

The service provider will be responsible for ensuring the necessary security and functioning of the hosting platform and provide login details to GreenCape to allow for minor edits and maintenance to the data.

1.3.1. Updates

Some of the data sources issue updates over time. In order to ensure the most up-to-date data is available on the GIS platform, the ability to update the GIS platform with new data sets is required. The service provider should incorporate this capability to allow GreenCape staff to update the data themselves.

As indicated in Table 1, the mining rights data is not yet available to integrate into the platform. The service provider should allow suitable infrastructure to incorporate the data, once it becomes available.

1.4.   Client Support

The service provider should provide the necessary training and visual support to enable GreenCape staff to implement basic changes, maintenance and updates. This includes a training workshop and a user guide document for GreenCape.

1.4.1. User guide

The service provider should provide a user guide document. The user guide should incorporate images and simple step by step instructions and a brief description of each functionality in MS Word format.

The guide should include two components:
1. GreenCape user guide for back-end basic maintenance and updates.
2. Guide for users of the user interface that explores the functionality and capability of the map interface.

1.4.2. Training

A recorded online training session should be provided to GreenCape, to guide staff on the functionality, maintenance and updating of datasets on the platform. It is expected that the training will be a two-hour session to run through all the functionalities and capabilities of the solution. GreenCape staff have a basic understanding of GIS software and how to use it.

LOCATION

The quotations can be submitted via email to ulrich@green-cape.co.za

DATE OF DELIVERY

Clarification and Q&A meeting: **10 August 2023 (time t.b.d.)**
Quotation delivery: **COB 21 August 2023**
First iteration platform completion date: **COB 22 September 2023**
Final completion date: **COB 29 September 2023**

Weekly update meetings are to be held during the execution of the project to ensure alignment with expectations and deliverables.

GENERAL INFORMATION

1. Any quotation submitted after the closing date and time shall **not** be considered.
2. GreenCape reserves the right to cancel the procurement process without notice at any time and not make any appointment on this project.
3. All quotations will be evaluated on the basis of a functionality/price/B-BEEE weighting of 50/30/20 (Functionality/Price/B-BBEE). B-BBEE points will be calculated as per the table set out in Annexure A to this RFQ.
4. Each bidder must include in its quotation a confirmation that it does not and will not have any actual or potential conflict of interest in submitting its quotation (see Declaration of Interest attached as Annexure B to this RFQ).
5. Functionality will be based on the following criteria (out of 100):

    a. **Data processing and inclusions [20 points]**; ability to process data, inclusions, exclusions, recommend additional data of value.
    b. **User Interface (ease of use, intuitive layout and visual appeal) [40 points];** Ease of navigation, visual display, intuitive selection, clear visualization.
    c. **Functional capability [20 points];** selecting, searching, printing, viewing and general interaction capability.
    d. **Ease of accessibility and maintenance by GreenCape staff [20 points]**; Training structure, ease of access, simplicity for editing and adding new data.

6. The acceptance of a quotation and the awarding of this project or any part thereof to a bidder will be communicated in writing by GreenCape.
7. Following acceptance of a quotation, the appointed bidder will be expected to enter into a service level agreement and a non-disclosure agreement with GreenCape, including provisions that all Intellectual Property created will vest in GreenCape, unless specifically agreed otherwise.
8. The successful quote submitted by the bidder will form part of the service level agreement and may not be amended at any time after acceptance unless agreed to in writing by GreenCape and the service provider.
9. The appointed bidder will be expected to comply, inter alia, with the following:
    9.1.   any applicable health and safety rules and regulations, including, but not limited to, the provisions of the Occupational Health and Safety Act No. 85 of 1993;
    9.2.   registration and good standing with the Commissioner for Compensation for Occupational Injuries and Diseases and having the necessary employer's liability insurance in respect of its employees/agents in line with the provisions of the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993, as amended; and

9.3.   sufficient insurance to cover its liabilities in respect of the services to be provided and any other insurances that may specifically be required by GreenCape in relation to its appointment on this project.

SUBMISSION REQUIREMENTS

Interested organisations are invited to submit a quote for the outlined scope of work that should include the following:

1. Quotation for the work, broken down by activity
2. Maximum project budget R 1 300 000. (This is the maximum value for all services and additional post-delivery assistance, not the expected cost of services)
3. A brief work plan that outlines the proposed approach and activities that will be taken to achieve the required scope of work. The work plan should include and be structured using the following activities (Data processing, GIS map development and user interface, GIS map hosting and maintenance):
    a. the proposed activities to achieve the required scope of work,
    b. the timeframes for each activity,
    c. a brief description of the proposed approach to develop a GIS map, hosting platform and supporting documentation,
    d. a risk register and mitigation plan that addresses any key project risks.
    e. Portfolio of work that is relatable to this study.
    f. Please incorporate Geographic Information System (GIS) and other software necessary for the fulfilment of the assigned tasks. Should the provider require proprietary GIS software that is not in their possession, they should include the associated expenses in their quotation. It is important to note that **GreenCape will not supply any software required for the successful execution of work.**
4. CVs of proposed team and team structure/organogram
5. Company profile, indicating previous projects with similar requirements
6. Tax Clearance Certificate
7. Company Registration Certificate
8. Declaration of Interest
9. BEE credentials with certificate or affidavit as relevant
10. Letter of good standing from the Compensation Fund in South Africa (COID)
11. Proof of required insurances

Please email the above documentation to ulrich@green-cape.co.za by 17:00, 21 August 2023, using the reference: MINING_RIGHTS_GIS. Please note that a failure to submit any of the required documentation could result in the bidder being excluded from the tender process.

For any queries related to this RFQ, please email: ulrich@green-cape.co.za

Annexure A: B-BBEE score weighting

Table 1 – B-BBEE score weighting

B-BEEE Level Status of Contributor	Number of Points
1	20
2	18
3	16
4	12
5	8
6	6
7	4
8	2
Non-compliant	0

Annexure B: Declaration of Conflict of Interest

Any legal person/s having a relationship with persons employed by The GreenCape Sector Development Agency or any of the funders listed in this RFQ may make an offer/s in terms of this invitation to bid. In view of the possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to The GreenCape Sector Development Agency or any of the funders listed in this RFQ, it is required that the bidder or his/her authorized representative declare his/her interest as required below.

1.   Have you previously provided services/products to The GreenCape Sector Development Agency or any of the funders listed in this RFQ?

YES   NO
If yes, please furnish further particulars:

_____

_____

2.   Do you have any relationship (family, friend or otherwise) with employees of The GreenCape Sector Development Agency or any of the funders listed in this RFQ?

YES   NO
If yes, please furnish further particulars:

_____

_____

3.   Were you previously employed by the GreenCape Sector Development Agency or any of the funders listed in this RFQ?

YES   NO
If yes, please specify further details of previous employment:

_____

_____

4.   Please provide details of any other positions that you currently hold that could be of relevance to assessing conflict of interest for purposes of this project (e.g. directorships, partnerships, trusteeships, shareholdings, etc.):

_____

_____

I am aware that in the event of not accurately declaring any of the above, The GreenCape Sector Development Agency is entitled to terminate the agreement, and take any further action it deems necessary.

I hereby confirm that all the information provided above is true and correct.

_____

SIGNATURE

_____

DATE

_____

FULL NAME

_____

CAPACITY

Annexure C: Sample of data set requiring processing

This operating mines dataset requires processing into a usable map. Below, is an extract of the excel dataset. The full list of data contains an estimate of 2059 rows, but it is expected that not all of these rows will be usable data. Only Mpumalanga data will be used, which is an estimate of 275 rows of data.

MINE CODE	MINE NAME	MINE OWNER	POSTAL ADDRESS	TEL & FAX NUMBER	MAGISTERIAL DISTRICT & PROVINCE	ENTITY & MINING TYPE	COMMODITY	FARM NAMES
15754	A. P. OLIVIER DELWERY	ABRAHAM PAULUS OLIVIER	PO BOX 175 WOLMARANSSTAD 2630	083 682 1880	WOLMARANS STAD NORTH-WEST	MINE OPENCAST	DIAMONDS ALLUVIAL	SPIOENKOP 174 HO 1
15613	AAA MINING CC	KARIBA MINERALS (PTY) LTD	PO BOX 1086 SCHWEIZER RENEKE 2780	(053) 963 1081 087 231 7021	PHILIPSTOWN NORTHERN CAPE	MINE OPENCAST	DIAMONDS ALLUVIAL	DOOREN KUILEN 62 2
14347	AAA MINING CC - HOSPITAL	SANDSTRAAT EKSPLORASIE (PTY) LTD	PO BOX 1086 SCHWEIZER-RENEKE 2780	(053) 963 1081 087 231 7021	HAY NORTHERN CAPE	MINE OPENCAST	DIAMONDS ALLUVIAL	HOSPITAL 365
15307	AAA MINING CC - PROBEERFONTEIN	DJ DU RAAN	PO BOX 1086 SCHWEIZER-RENEKE 2780	(053) 963 1081 087 231 7021	HOPETOWN NORTHERN CAPE	MINE OPENCAST	DIAMONDS ALLUVIAL	PROBEERFONTEIN 7