

FARM NO. 432, BEAUFORT WEST  
REGISTRATION DIVISION

**APPLICATION FOR:**

CONSENT USE:

TOURIST FACILITY & RENEWABLE ENERGY  
STRUCTURE

**COMPILED BY:**

Roeben Pienaar  
Professional Town Planner  
PR. Pln A/3045/2021



**CK RUMBOLL**  
& PARTNERS

**CK RUMBOLL & PARTNERS**

16 Rainier Street, Malmesbury  
Western Cape, 7299  
PO Box 211

**DATE: 19 February 2025**

**CONTACT INFO:**

**Roeben Pienaar**

e-mail: [planning9@rumboll.co.za](mailto:planning9@rumboll.co.za)

Mobile: 071 889 6051

TEL: +27 22 482 1845

CK Rumboll & Partners  
Ref: BW/13565/RP





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Figure 2: 3D Representation of proposed Development



Figure 3: Site Development Plan

## **ANNEXURE A: The CHARGE Project – Development Concept**



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4. Memorandum of Understanding and Letters of Support
5. Civil Services Report
6. Traffic Impact Statement
7. Heritage Impact Report
8. Agricultural Meta Land Use & Socio-Economic Impact Study
9. Visual Impact Report



Consent Use	<b>Farm:</b>	Farm 432	<b>RD:</b>	Beaufort West
<b>Ref no:</b> BW/13565/RP	<b>By:</b>	RP	<b>Edit Date:</b>	19-Feb-25
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## 1. Submission Checklist

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- ✓ Motivational Report
- ✓ Municipal Application Form
- ✓ The CHARGE project – Development Concept

### MAPS & DIAGRAMS

- ✓ Regional Locality Map
- ✓ Locality Map
- ✓ Site Development Plan
- ✓ 3D Representation of proposed Development

### PROPERTY DETAILS

- ✓ Title Deed Search
- ✓ Title Deed
- ✓ SG Diagrams
- ✓ Power of Attorney
- ✓ Bondholder's Consent (if applicable)

### LETTERS OF SUPPORT

- ✓ Environmental Approval / Letter confirming not a listed activity (NEMA)
- ✓ Memorandum of Understanding

### SUPPORTING STUDIES & REPORTS

- ✓ Civil Services Report
- ✓ Traffic Impact Statement
- ✓ Heritage Impact Report
- ✓ Agricultural Meta Land Use & Socio-Economic Impact Study
- ✓ Visual Impact Report



## 2. MOTIVATIONAL REPORT

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### Executive Summary

#### About The CHARGE Project

**Zero Carbon Charge (Pty) Ltd (CHARGE)** is a local company developing a national network of electric vehicle (EV) charging stations, all powered by onsite renewable energy. The charging stations will be approximately 150 km apart, servicing all national routes in South Africa – establishing a national network of clean energy powered charging stations. Each charging location will incorporate renewable energy infrastructure (solar panel and battery storage system), an EV charging station and a safe and convenient refreshment facility with restrooms.

#### Electric Vehicles uptake

The ***Electric Vehicle White Paper***, delivered by the South African Government Department of Trade, Industry and Competition in November 2023, **underscores the expected accelerating adoption of electric vehicles (EVs) across South Africa**. This strategic document highlights the country's commitment to embracing sustainable mobility solutions to drive economic growth and environmental stewardship. The CHARGE project also aligns with the **Department of Transport's Green Transport Strategy for South Africa (2018 – 2050)** and The Presidency ***National Development Plan 2030 (NDP)***. It supports goals related to climate change mitigation, infrastructure development, energy accessibility, innovation, and economic development, thereby contributing to South Africa's sustainable development objectives.

#### Solar Energy

- Choosing solar power isn't just beneficial for the environment; it's also a smart economic choice for the South African and rural economies.
- Distributed Energy Systems like the planned CHARGE network will alleviate strain on the Eskom power grid and ensure scalability to meet future charging demand.



### 3. INTRODUCTION

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CK Rumboll & Partners have been approached by Mr. Joubert Roux, representative of Zero Carbon Charge (Pty) Ltd<sup>1</sup>, to handle all town planning actions required to secure the necessary land use rights to establish a service trade (EV charging station) and renewable energy structure (solar photovoltaic facility) on Farm no 432, Beaufort West Registration Division (RD).<sup>2</sup> CHARGE have been appointed by Mr. Jan Abraham Viviers, representative of Quickstep 479 Pty Ltd, to lodge the necessary applications for the proposed development, as mentioned.<sup>3</sup> It is important to note that the application has previously been scrutinised during the Pre-Application.<sup>4</sup>

### 4. PURPOSE

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The purpose of this report is to apply for<sup>5</sup>:

- A **Consent Use** in accordance with Section 15 (2) (o) of the Beaufort West Municipal Land Use Planning By-Law in order to apply for a Tourist facility allowing the accommodation of the current use of a restaurant on The Property, accompanied by an EV charging station as an ancillary use to the Tourist Facility.
- A **Consent use** in accordance with Section 15 (2) (o) of the Beaufort West Municipal Land Use Planning By-Law in order to permit a Renewable Energy Structure on a portion (±8250m<sup>2</sup>) of The Property, currently zoned Agricultural Zone I.

### 5. LOCALITY

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The Property is located along the N12 National Road ±14km south of Beaufort West (refer to Figure 1). The property obtains direct access from the N12.<sup>6</sup>

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<sup>1</sup> Hereafter referred to as 'CHARGE.

<sup>2</sup> Hereafter referred to as The Property

<sup>3</sup> Powers of Attorney & Resolutions – **Annexure C.**

<sup>4</sup> Pre-Application Feedback – **Annexure D.**

<sup>5</sup> Application Form – **Annexure B.**

<sup>6</sup> Locality Map – **MAPS & DIAGRAMS**, Figure 1.



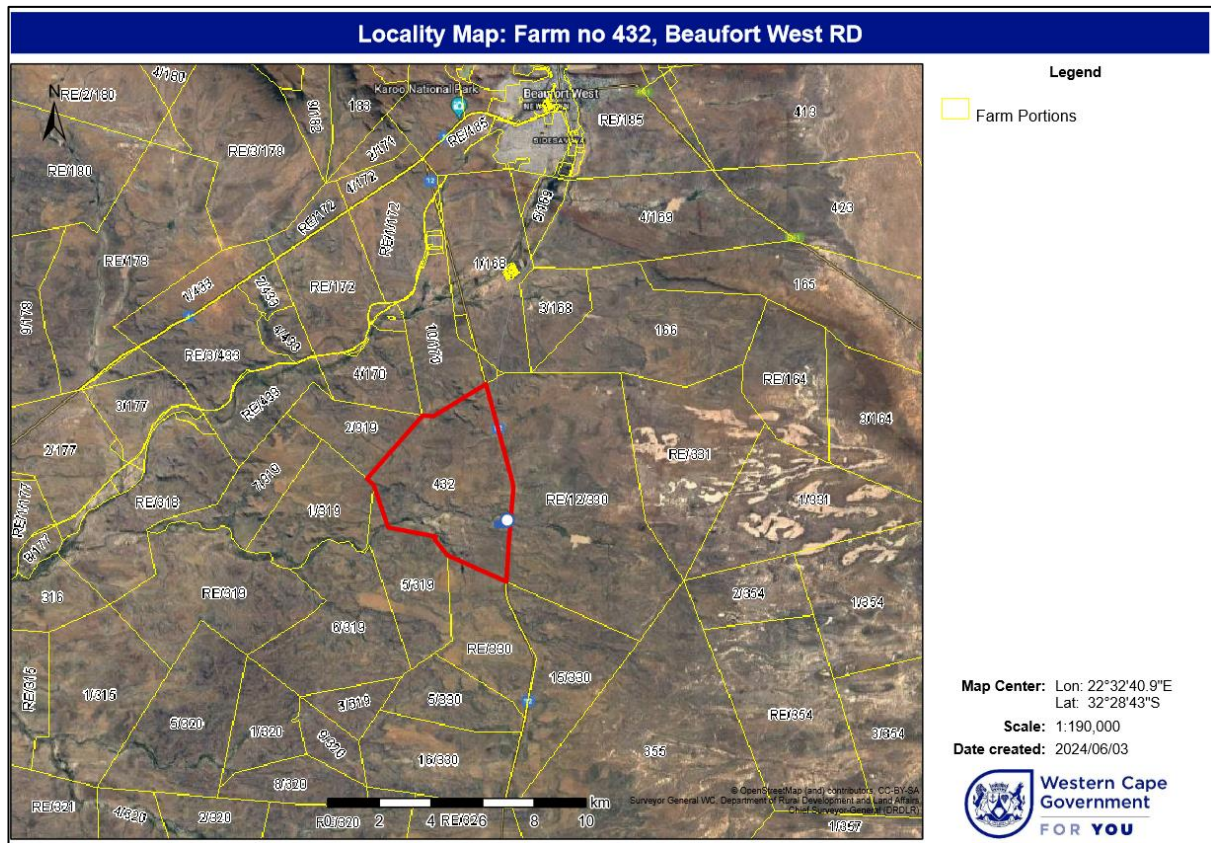


Figure 1: Locality Map

## 6. PROPERTY DESCRIPTION

### 4.1 Summary of Property Particulars

Property Description	:	Farm no 432, Beaufort West RD
Property Extent	:	2577.4276 Ha
Registered Owners	:	Quickstep 479 Pty Ltd
Local Authority	:	Beaufort West Municipality
Title Deed	:	T49756/2018
Zoning	:	Agricultural Zone I

### 4.2 Restrictive Title Deed Conditions

The title deed of the application property contains no conditions that will prohibit the proposed development of a renewable energy structure and EV charging station on the property.<sup>7</sup>

### 4.3 Bonds

The application property is encumbered by a bond from First National Bank.<sup>8</sup>

<sup>7</sup> Title Deed and Diagrams – **Annexure C.**

<sup>8</sup> Bondholders Consent – **Annexure C.**



#### 4.4 Servitudes

Two electrical overhead powerline servitudes, one being 31m in width and the other being 23.5m in width, are registered against the title deed of the application property<sup>9</sup>. The development proposal takes the servitudes into account by maintaining a safe distance from the servitudes.

#### 4.5 Zoning and Surrounding Land Uses

The Property and surrounding properties are zoned Agricultural Zone I. Agricultural activities, such as olives and lucerne/medics, are only evident along the banks of the Boeteka River where land is arable and water readily available. Areas further from the river are characterised by natural vegetation (Nama-Karoo biome with grassy, dwarf shrubland) and are used for the grazing for sheep.

Currently, The Property, includes a single building utilised for tourism purposes, specifically the “Boeteka Farm Stall.” This application pertains to the land surrounding the existing structure.

#### 4.6 Restrictions and Opportunities

The Boeteka River and some non-perennial rivers are present on the application property. Other on-site restrictions relate to two overhead electrical powerline servitudes traversing the property. The layout of the proposed facility acknowledges these features by maintaining a safe distance from these features.

Apart from the above-mentioned, there are no real restrictions that will hinder the proposed development to take place. No significant adverse impacts are anticipated, and all impacts can be addressed through mitigation, rehabilitation, and management. An environmental process is underway, and comments/approval will be submitted to Beaufort West Municipality once obtained.

As far as opportunities are concerned, the proposal offers a dual benefit: it promotes the reduction of carbon footprints and supports the adoption of EVs at a larger scale, thereby driving the transition towards more environmentally sustainable transportation. Additionally, the proposal provides financial benefits to the property owners, including capital that can be used to supplement agricultural uses, lower electricity bills, and improve the property's resilience in the face of rolling blackouts. By embracing this proposal, the property owner can contribute to a greener future while also improving the financial sustainability of their property.

The N12 is a bustling national road, presenting an opportunity for businesses to tap into the high traffic volumes. By establishing a strategically located charging point along this road, businesses can not only benefit from the steady flow of traffic but also attract EV drivers who plan their trips around charging station availability. This can help create a reliable stream of customers and drive sustainable growth for the existing farm stall on the property.

The benefits and related opportunities offered by the facility as an alternative renewable energy initiative are:

- ❖ Solar photovoltaic (PV) installations are the most reliable of all the renewable energy as it turns sunlight directly into electricity whilst the other techniques use indirect conversion.
- ❖ Solar PV facilities are the most environmentally friendly of all the technologies.
- ❖ Solar PV facilities use no water whilst generating power.
- ❖ There is no runoff or pollution impact caused by the solar PV facility.

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<sup>9</sup> Title Deed and Diagrams – **Annexure C**.



- ❖ Installation, maintenance, and management of solar PV facilities are more cost effective compared to other technologies.
- ❖ Solar PV facilities are not labour-intensive, and a high level of training is not essential.

The development proposal serves as an alternative to burning fossil fuels and a reliance on internal combustion engine vehicles (ICE's), which are associated with global warming and acid rain. The duration of the construction phase will last  $\pm 1$  year, which will ensure medium to long-term job opportunities. The proposed development will not only create several job opportunities but also provide a clean and renewable source of energy for charging EVs. Furthermore, the N12 is a popular transport corridor traversing cities and towns such as George, Beaufort West, Kimberley, Klerksdorp, Johannesburg, and eMalahleni. This makes the chosen development site highly accessible. These factors also provide an ideal opportunity to establish an EV charging station that will contribute to economic growth in the region and afford additional income for the farm owners.

## 5. DEVELOPMENT PROPOSAL

Firstly, the proposed development involves the creation of a renewable energy facility in two phases, situated on Farm no 432, Beaufort West RD. The initial phase comprises 480 solar panels situated in a fenced area and associated battery storage containers also situated in a separate fenced of area. The renewable energy will be used solely on-site and no generated electricity will be sold off.

Further, within this phase, a charging station for EVs will also be erected that will serve as additional parking bays for the existing farm stall on The Property<sup>10</sup>, along with a new ablution facility. The charging station will consist of six (6) parking bays equipped with charging equipment, functioning in a self-help manner without requiring staff attendance. The area covered by the charging equipment and the six (6) parking bays measures  $\pm 241.8\text{m}^2$ . Four (4) of these parking bays will be covered with a canopy (78m<sup>2</sup>). Two (2) parking bays will be uncovered. The charging area will be located diagonally in front of the existing farm shop. Figure 2 illustrates a typical design of such a charging station.<sup>11</sup>



Figure 2: 3D Representation of proposed Development

<sup>10</sup> Consent Use for Tourist Facility applied for in this application.

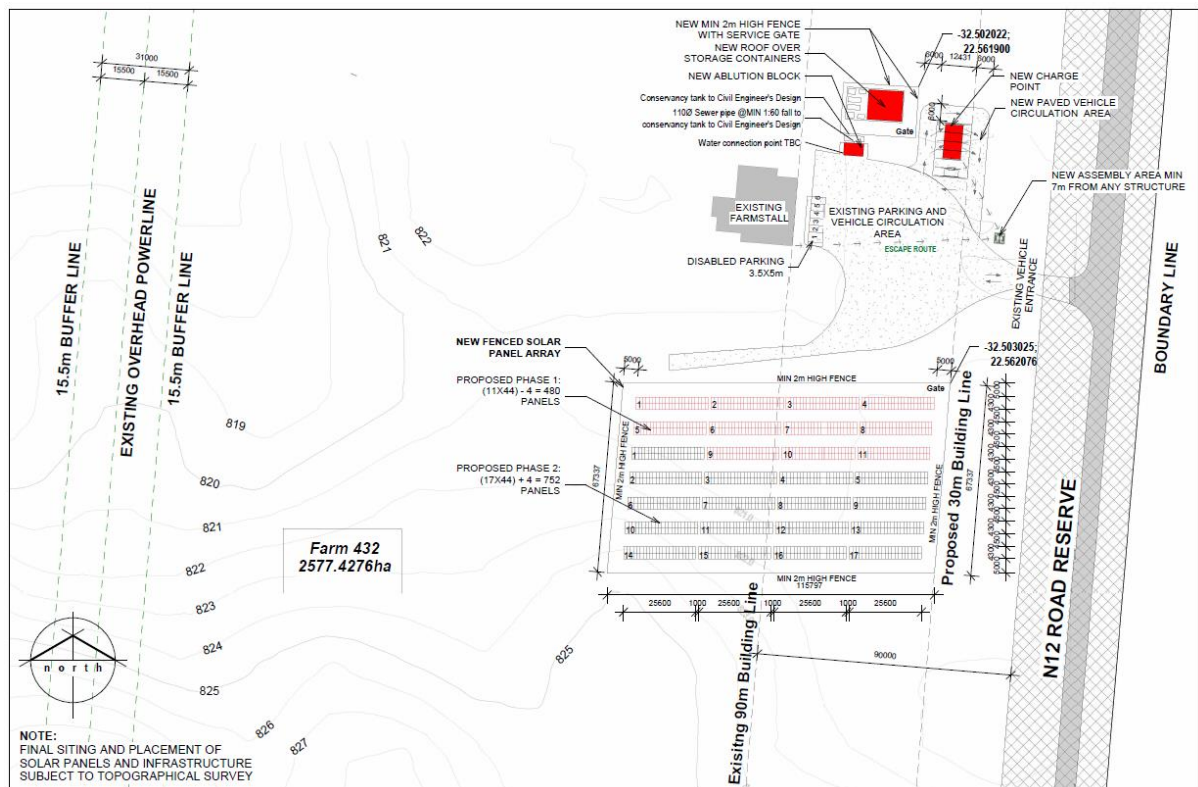
<sup>11</sup> 3D Representation of proposed Development – **MAPS & DIAGRAMS**, Figure 2



Considering that EVs typically charge between 30 minutes and 1 hour, the farm shop and Tourist Facility applied for in order to accommodate the current use of a restaurant is envisioned as a welcomed feature on-site. The close proximity between the farm shop and the charging station is anticipated to be mutually beneficial. The charging station can serve as additional parking space, allowing visitors to spend time at the farm shop and Tourist Facility while their EVs charge. Thus, the strategic proximity facilitates a clustered development.

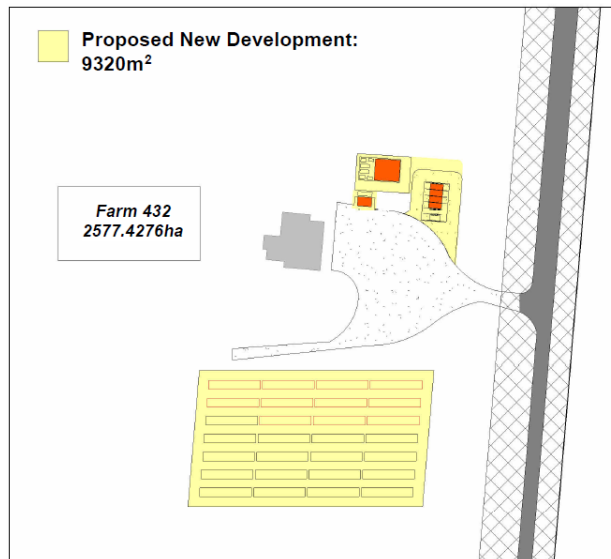
The second phase of development encompasses an expansion of the renewable energy facility on the same property and within the proposed fenced area, featuring 752 solar panels. Notably, the execution of the second phase is subject to consumer demand. In the broader context, similar facilities are proposed across SA along major transport routes. Realistically, not all sites are expected to experience high consumer demand. Therefore, the decision to proceed with the second phase will hinge on demonstrated necessity determined by consumer demand. The phased construction approach enables adaptation to site-specific requirements, ensuring responsible and scalable development tailored to the unique demands of each location.

The following figure illustrates the proposed development on The Property<sup>12</sup>.



<sup>12</sup> Site Development Plan – **MAPS & DIAGRAMS**, Figure 3.





SCHEDULE OF RIGHTS		
Farm Nr:	Farm Nr. 432, Boeteka Beaufort West, N12	
Zoning:	Agricultural Zone 1	
Building Lines:	Street: 90m   Sides & Back: ?m	
Erf Area:	2577.4276ha	
Proposed Development Footprint	1. Solar Array Area, incl. Container Roof (Battery Storage)	8250m² 130.50m²
	2. Ablution & Canopy Area, incl. New Ablution Block Charging Station Canopy	1070m² 31.1m² 78.00m²
	<b>Total Development Footprint</b>	<b>9320m²</b> =0.9320ha =0.036%
Coverage:	Existing Development	625m² =0.002%
	Future Development	864.6m² =0.003%
Height	1 Storey	

Figure 3: Site Development Plan – Tourist Facility and Renewable Energy Structure

## SERVICES

The proposed development does not require conventional civil services such as sewage or electricity as electricity will be generated by the facility itself. Sewage will be provided in the form of conservancy tanks while water connections will be made to the existing water infrastructure on the farm to provide water to the new ablution facility.

## ACCESS

The application property gains entry via an existing access point on the N12 national road. The proposal will fall within the required 95m setback applicable along prominent roads as determined by the Roads and Ribbon Development Act (Act 21 of 1940)<sup>13</sup>. SANRAL will be approached to obtain consent for proposing development within the 95m setback. The applicant considers departure from these parameters to be desirable as it will result in the efficient utilisation of land that would otherwise be rendered “useless”. Considering that the property has existing structures in the 95m setback area, development of this portion will support the principles of clustering development in rural areas and making efficient use of land. The departure still affords 30m setback along the N12 road to ensure commuters have unobstructed sight with no distractions in their peripheral vision.

## VISUAL IMPACT

Solar panels were selected over wind turbines due to their less intrusive visual impact. Wind turbines, with heights typically exceeding 150m, are visually imposing compared to solar panels, which have an average height ranging from 3 to 5m. The specific placement of the proposed renewable energy structures has been meticulously considered. The proposed land uses are strategically situated near existing buildings. Consequently, the clustering of these buildings/structures will mitigate visual impact compared to an open agricultural landscape where no surrounding structures would have provided visual screening for the facility.

<sup>13</sup> Site Development Plan – Annexure E.



## GLINT AND GLARE

The proposed solar PV panels is designed to be fixed at a 25° angle from the Horizontal, facing north, which incorporates specific coatings to minimise glint and glare from the surfaces. These coatings are designed to reduce the amount of sunlight that reflects off the solar panels, thereby diminishing glint and glare.<sup>14</sup> By optimizing the refractive index of the coating material, the reflection of sunlight can be significantly decreased, enhancing the overall aesthetic appeal of the solar installation.

Specific types of solar panels, such as the Jinko Solar Tiger Neo N-type Bifacial Module, is designed to be a high-power, reliable solar module with advanced technology to mitigate issues like glint and glare, making it suitable for various solar energy applications.<sup>15</sup> These types of solar PV panels allow for a more precise control of the reflective properties of the solar panels, addressing concerns related to visual disturbance.

In summary, by optimizing the coating material and targeting specific wavelengths, solar installations can effectively integrate with their surroundings while maintaining their energy-generating functionality.

## DECOMMISSIONING OF RENEWABLE ENERGY STRUCTURE

The renewable energy facility is expected to have a lifespan of ±25 years. The facility will only be decommissioned, and the site rehabilitated, once it has reached the end of its economic life. Decommissioning would most likely be due to the enhancement of technology/infrastructure in the future of renewable energy as the developer also has the possibility to extend the lifespan of the facility. Solar panels are classified as hazardous waste and are banned from landfill disposal in SA since August 2021. The only sustainable solution in the event of decommissioning is to recycle the panels. This is why countries close to recycling and manufacturing of panels will offer to pay for old panels, as they contain valuable components. Cape Town has been cited as a centre for recycling of solar panels and after decommissioning the owner of the facility will engage with the appropriate parties to responsibly dispose of the solar panels. The solar PV panels are standalone structures designed to be affixed to a concrete slab. The battery storage area will consist of containers, and both the charging stations and the canopy constructed over it will be temporary structures mounted on a concrete slab. Consequently, these structures can be effortlessly dismantled when needed.

## SOCIO-ECONOMIC IMPACT

The advent of EVs and the extent of charging infrastructure and associated energy generation required will have a transformational impact on rural economies and employment. With charging stations proposed at ±75km apart on all the national and major highways in SA by definition and design – it is a business targeted at rural areas. The CHARGE long term plan envisages the construction of 500 to 1000 renewable energy facilities, including the component of charging stations and associated convenience offerings, throughout the country. The maintenance of complex charging and generation systems will stimulate a local technically trained workforce, as it is critical that those skills are physically close to keep the charging stations up and running 24/7.

The development proposal is considered desirable on the basis of the following:

- I. **Reduced greenhouse gas emissions:** EVs produce no direct emissions, and when they are

<sup>14</sup> <https://www.pveducation.org/pvcdrom/design-of-silicon-cells/anti-reflection-coatings>

<sup>15</sup> <https://jinkosolar.eu/wp-content/uploads/JKM560-580N-72HL4-BDV-F3-EN.pdf>



charged with electricity from a renewable source, such as a small solar farm, their use results in significantly reduced greenhouse gas emissions;

- II. **Environmental benefits:** A charging station powered by renewable energy helps to reduce reliance on non-renewable energy sources and reduce the overall carbon footprint of the transportation sector;
- III. **Reduced carbon footprint:** Using surplus electricity from a small solar farm for an agricultural property reduces the carbon footprint of the property. This is especially important for environmentally conscious consumers and for businesses that want to demonstrate their commitment to sustainability;
- IV. **Reduced electricity costs:** By using surplus electricity generated by the small solar farm, the agricultural property will significantly reduce their electricity costs and may even eliminate them altogether;
- V. **Increased energy independence:** By generating electricity from a renewable source such as a small solar farm, the agricultural property can increase its' energy independence and reduce its' reliance on the grid;
- VI. **Improved energy reliability:** By generating electricity, the agricultural property will ensure a reliable source of energy, even in the event of power outages or other disruptions to the grid;
- VII. **Business opportunities:** The increasing demand for electric vehicles and the need for EV charging infrastructure presents opportunities for businesses to enter the EV charging market and generate revenue. With a charging station powered by renewable energy, the business can appeal to environmentally conscious customers who are looking for a sustainable and clean energy source for their EVs;
- VIII. **Enhanced community relations:** Using surplus electricity generated by a small solar farm to provide electricity to an agricultural property will enhance community relations by demonstrating a commitment to sustainable energy practices and supporting the local agricultural community.

## SITE SELECTION CRITERIA

The site selection process incorporates several criteria which include:

1. **Accessibility:** Assessing the property's accessibility is crucial, considering factors like line of sight, slope, and any limitations that may hinder access. It's important to determine if there are existing access points available or if new ones need to be established.
2. **Location:** Evaluating the property's location is essential in terms of its proximity to important routes and transportation networks. Additionally, the amount of sunlight available at the location is a key factor to consider, ensuring optimal solar energy generation.
3. **Potential for future expansion:** Assessing the site's potential for future expansion is important to accommodate potential growth and increased capacity of the solar farm. This allows for scalability and flexibility in the long run.
4. **Property owner cooperation:** The willingness of the property owner to come to an agreement for utilizing their land is a critical aspect. Cooperation and consent from the property owner are



necessary to proceed with the project.

5. **Natural constraints:** Identifying and considering any natural constraints on the property is crucial, such as the presence of critical biodiversity areas or rivers. Preserving and protecting these areas is vital for maintaining ecological balance and sustainability.
6. **Agricultural potential:** Evaluating the agricultural potential of the land in question is necessary to ensure that the proposed solar farm does not encroach upon high potential agricultural land. It is important to avoid areas that could compromise food production or existing agricultural activities.

## WHY NOT WITHIN THE URBAN AREA OR ON ROOFS?

Several factors contribute to the conclusion that developing the proposed facility within an urban area and relying solely on rooftops is not an optimal solution:

1. **Available roof space:** The primary limitation of rooftop solar is the availability of suitable roof space for installing solar panels. In urban areas, roof space can be limited due to building density, architectural design, shading from neighbouring structures, and obstructions like HVAC systems or rooftop equipment. It is not always be feasible to accommodate a significant capacity of solar panels on rooftops to meet the energy demands. Considering that this facility requires  $\pm 0.825$ ha for solar panels and ancillary renewable energy structures, there are no buildings nearby that provide enough roof space.
2. **Energy generation capacity:** Ground-mounted solar farms typically have the advantage of larger surface areas and the ability to optimize panel orientation and tilt angles for maximum energy generation. Rooftop solar, on the other hand, may have suboptimal orientations and shading issues, resulting in reduced energy generation/production. Additionally, the available roof space may not be sufficient to generate the desired capacity of electricity required for charging EVs.
3. **Structural considerations:** Rooftop solar installations require assessing the structural integrity of buildings to support the weight and additional load of the solar panels. Some buildings may not be suitable for accommodating solar panels due to structural limitations, age, or other factors. Retrofitting buildings to support rooftop solar can involve additional costs and technical challenges.
4. **Grid connection and distribution:** Ground-mounted solar farms can be connected to the electrical grid at a centralized location, ensuring efficient distribution of the generated electricity. Rooftop solar installations, on the other hand, may require individual grid connections for each building, which can be more complex and costly to implement.
5. **Impact on Urban Expansion and Development Opportunities:** The placement of the proposed EV charging station and accompanying PV array within an urban context would require a substantial allocation of developable land, consuming valuable space that could otherwise support the town's future residential, commercial, or public developments. such large-scale



ground-mounted solar installations, requiring approximately 0.825 hectares, would effectively occupy land with strategic potential for urban growth, thereby limiting expansion options and restricting opportunities for future development that may be vital to the town's growth and infrastructure needs.

Furthermore, positioning the proposed development just outside the urban edge could restrict the natural progression of the town's expansion, particularly in that direction. By anchoring a non-urban land use at the urban boundary, it could inadvertently set limitations on extending the urban edge to accommodate future population and development needs. Instead, establishing such facilities in strategically chosen rural areas avoids consuming valuable urban land, preserves expansion opportunities, and supports the development of an efficient EV charging network in areas with ample space for renewable infrastructure.

## WHY THIS SITE?

The following points informed the location of the chosen site:

1. **Abundant sunlight:** The area is known for the high solar irradiation levels, making it an excellent location for solar energy generation. With ample sunlight available throughout the year, the solar farm can maximize its energy production potential and efficiently charge the electric cars.
2. **Agricultural land compatibility:** As the proposed solar farm avoids high potential agricultural land, it demonstrates a commitment to preserving valuable agricultural resources. By selecting a location that doesn't interfere with active agricultural operations, the solar farm minimizes potential conflicts with food production and respects land use priorities.
3. **Low environmental impact:** The chosen site is not situated in environmentally sensitive areas such as critical biodiversity zones or near rivers. This reduces the potential impact on wildlife habitats and helps preserve the ecological balance of the region.
4. **Future expansion potential:** The selected location has ample space to accommodate the ±8250m<sup>2</sup> solar farm as well as allow for potential future expansion. This flexibility ensures that the facility can be scaled up in the future to meet increasing energy demand.
5. **Proximity to prominent roads:** The N12 serves as a crucial route, facilitating transportation along this corridor. The strategic positioning of The property allows the facility to effectively intercept and cater to clients. This advantageous location enables the facility to capture a significant portion of the commuter traffic, providing convenient charging services and sustainable energy solutions to commuters travelling along this key route.
6. **Proximity to Beaufort West:** Developing the facility near Beaufort West has many advantages for the town:
  - a) **Enhanced tourism infrastructure:** A charging station for electric cars adds to the existing tourism infrastructure in and near the Beaufort West Municipal area, making it a more



appealing destination for electric vehicle owners. This can attract eco-conscious tourists who prioritize sustainable travel options and actively seek locations with reliable charging infrastructure.

- b) **Extended visitor stays:** Electric vehicle owners often prefer destinations with accessible charging facilities, as it allows them to recharge their vehicles conveniently while exploring the area. By providing a charging station, Beaufort West Municipality can encourage electric vehicle owners to extend their stays, leading to increased tourist spending on accommodations, dining, and local attractions.
- c) **Environmental sustainability:** Having a charging station promotes sustainable transportation options, aligning with global efforts to reduce carbon emissions and combat climate change. This eco-friendly image can enhance Beaufort West's reputation as an environmentally responsible and forward-thinking destination, appealing to eco-conscious tourists who prioritize sustainable travel practices.
- d) **Economic growth and local businesses:** The presence of a charging station can stimulate local economic growth by attracting visitors who specifically seek destinations with electric vehicle infrastructure. This increased foot traffic can benefit local businesses, such as hotels, restaurants, shops, and tourist attractions, leading to job creation and improved revenue for the community.
- e) **Community engagement and education:** The introduction of a charging station can foster community engagement and education about sustainable energy practices. It provides an opportunity for locals and tourists alike to learn about electric vehicles, renewable energy sources, and the benefits of sustainable transportation. This knowledge-sharing can contribute to a more environmentally conscious community overall.
- f) **Positive destination image:** Offering a charging station positions Beaufort West as a progressive and technologically advanced town, catering to the needs of modern travellers. This positive destination image can generate buzz, attract media attention, and potentially lead to increased visibility and tourism promotion for Beaufort West.

## 6. MUNICIPAL ZONING SCHEME REGULATIONS

The Beaufort West Municipal Integrated Zoning Scheme By-Law outlines the permissible land uses for the current Agricultural Zone I zoning. In accordance with the zoning scheme, a Tourist Facility and the use of renewable energy structures is allowed as a consent under the Agricultural Zone I zoning.



1	2	3
Zoning	Primary use	Consent use
AGRICULTURAL ZONES		
<b>Agricultural Zone I (AZI)</b>		
<i>The objective of this zone is to promote and protect agriculture on farms as an important economic, environmental and cultural resource. Limited provision is made for non-agricultural uses to provide rural communities in more remote areas with the opportunity to increase the economic potential of their properties, provided these uses do not present a significant negative impact on the primary agricultural resource.</i>	<b>Primary use</b> <ul style="list-style-type: none"> <li>Agriculture</li> </ul>	<b>Consent uses</b> <ul style="list-style-type: none"> <li>Abattoir</li> <li>Additional dwelling units</li> <li>Agricultural industry (&gt;2000m<sup>2</sup>)</li> <li>Airfield</li> <li>Animal care centre</li> <li>Aqua-culture</li> <li>Camping site</li> <li>Farm shop</li> <li>Farm grave yard</li> <li>Freestanding base telecommunication station</li> <li>Function venue</li> <li>Guest house</li> <li>Helicopter landing pad</li> <li>Off-road trail</li> <li>Plant nursery</li> <li>Quarry</li> <li>Renewable energy structure</li> <li>Shooting range</li> <li>Tourist facilities</li> <li>Utility service</li> </ul>

While the zoning scheme includes an array of development parameters applicable to renewable energy structures, these parameters largely apply to wind turbines, as wind turbines have more considerations relating to safety, as well as environmental and visual impact. Therefore, most of the development parameters are not applicable to the proposed solar facility. However, the following table indicates the compliance of the proposed renewable energy facility with the applicable development parameters:

Agricultural Zone I: Renewable Energy Structures		
Development Parameters	Proposed Development	Compliance
<u>Height of renewable energy structure:</u> technology independent. <u>Height of buildings:</u> maximum 8.5m from the natural ground level to the top of the roof.	The solar renewable energy facility will be between 3 and 5 metres in height. The buildings will be below the 8.5m height restriction.	Complies.
<u>Site Development Plan:</u> (i) A site development plan must be submitted to the Municipality for its approval. (ii) The site must be surveyed and the exact delineation of the construction footprint must be shown in the site development plan. (iii) To the extent necessary, any relevant measures contained in these regulations must be incorporated into the site development plan submitted to the Municipality for approval.	A Site Development Plan <sup>16</sup> accompanies this application. Building Plans, including a detailed Site Development Plan, will be submitted to the Municipality for approval after Land Use Approval has been obtained.	Will comply.
<u>Land clearing, soil erosion and habitat impact</u> (i) The clearing of natural vegetation is limited to that which is necessary for	A letter from DEA&DP will be obtained confirming if the development proposal does not	Complies.

<sup>16</sup> Site Development Plan – **MAPS & DIAGRAMS**, Figure 3.



<p>the construction, operation and maintenance of the renewable energy structure as regulated by applicable environmental legislation.</p> <p>(ii) Wind turbines, solar structures, access roads and other infrastructure must be located to minimise damage to natural vegetation, water courses and wetlands.</p> <p>(iii) All land cleared that does not form part of the footprint of a renewable energy structure must be rehabilitated according to a rehabilitation plan for the land concerned, approved by the Municipality.</p> <p>(iv) Constructing or operating the renewable energy structure may not cause soil erosion, and any high-risk erosion areas must be rehabilitated by the operator, to the satisfaction of the Municipality.</p> <p>(v) The applicant must prove, to the satisfaction of the Municipality, that planning for the renewable energy structure concerned has taken into account and mitigated the risk of all impacts on, and necessary distances that should be maintained from, wetlands, water bodies, threatened ecosystems, mountains, ridges, hills, coastal buffers, settlements, telecommunication towers, transmission towers and power lines.</p> <p>(vi) The applicant must provide exact coordinates relevant to land clearing, soil erosion and habitat impact to assist the Municipality to evaluate the risk of possible negative environmental impacts of the renewable energy structure concerned.</p>	<p>trigger a listed activity in terms of NEMA.</p>	
<p><u>Finishing, colour and design</u></p> <p>A solar structure must minimise any adverse effects related to its reflective surfaces and must be designed and built in a way that mitigates this impact, as required by the Municipality.</p>	<p>The design of the solar PV panels will be in such manner to have minimal impact on visual disturbances, specifically its reflective surfaces. Special adherence will be given to the gradient the proposed fixed panels will be constructed to in relation to the glint and glare the panels may cause.</p>	<p>Will comply.</p>
<p><u>Appurtenant structures</u></p> <p>(i) All appurtenant structures to a renewable energy structure prescribed by the Municipality concerning bulk, height, yard sizes, building lines, open</p>	<p>The Site Development Plan<sup>17</sup> includes a building for the storage of equipment. The building will be constructed to the satisfaction of the Municipality and according to the</p>	<p>Will comply.</p>

<sup>17</sup> Site Development – Annexure E.



<p>space, parking and building coverage requirements are subject to applicable by-laws.</p> <p>(ii) Appurtenant structures, including equipment shelters, storage facilities, transformers and sub-stations must be architecturally compatible with the receiving environment as required by the Municipality, and contained within a renewable energy structure site development plan submitted for approval by the Municipality.</p> <p>(iii) Appurtenant structures may only be used for the storage of equipment or other uses directly related to the operation of the particular facility that they are associated with.</p> <p>(iv) Appurtenant structures must be screened from view by indigenous vegetation or be joined and clustered to minimise adverse visual impacts.</p>	<p>prescribed development parameters, thereby, not negatively impacting its surroundings.</p>	
<p><u>Signage and advertising</u></p> <p>Signs on renewable energy structures must comply with the laws regulating signage and be limited to signage necessary to—</p> <p>(i) identify the operator;</p> <p>(ii) provide 24-hour emergency contact numbers; and</p> <p>(iii) provide warning of any dangers associated with the structure.</p> <p>No commercial advertising, including advertising for the provider or operator, may be displayed on any renewable energy structure.</p>	<p>No signs are proposed on the solar PV panels at this stage. However, if signage is proposed, the necessary application will be made to for approval in relation to the applicable development parameters.</p>	<p>Will comply.</p>
<p><u>Maintenance</u></p> <p>The owner is responsible for maintaining a renewable energy structure in good condition, including any access road, unless deemed a public way, and for paying the cost of repairing any damage resulting from construction or operation. Maintenance includes—</p> <p>(i) painting;</p> <p>(ii) structural repairs;</p> <p>(iii) rehabilitation measures; and</p> <p>(iv) the upkeep of security and safety measures.</p>	<p>The solar PV facility will be maintained by the owner as needed.</p>	<p>Will comply.</p>
<p><u>Modification</u></p> <p>Any modification to a renewable energy structure, excluding inconsequential <i>in situ</i> technical improvements, made after approval and that is not in accordance with the approval and conditions of approval, requires authorisation from the</p>	<p>If amendments of the renewable energy structure are proposed, the necessary application will be made to the Municipality for approval prior to construction.</p>	<p>Will comply.</p>



<p>Municipality within the parameters of these regulations by means of—</p> <p>(i) the amendment of approved conditions;</p> <p>(ii) a new consent use approval;</p> <p>(iii) amendment of the approved site development plan; or</p> <p>(iv) amendment of the approved building plan.</p>		
<p><b>Decommissioning</b></p> <p>Any renewable energy structure and associated infrastructure that has reached the end of its productive life or has been abandoned, including buildings, cables and roads, must be removed by the owner.</p> <p>(ii) A renewable energy structure is considered abandoned when the structure fails to continuously operate for more than two years.</p> <p>(iii) When a renewable energy structure is scheduled to be decommissioned or operations have been discontinued or it has been abandoned, the landowner must, by registered mail, notify the Municipality within 30 days after the operation ceased, and of plans for removal of the structure and infrastructure referred to in subparagraph (i).</p> <p>(iv) The owner is responsible for the removal of the structure in all its parts, within 150 days after the date of discontinued operation, or as agreed upon by the Municipality after submission of a plan for decommissioning.</p> <p>The Municipality may grant an extension of the deadline for removing the structure and its parts. The land must then be rehabilitated by the owner, to the satisfaction of the Municipality, to the condition prescribed in the approved environmental management plan and the approved decommissioning plan.</p> <p>(v) Decommissioning must include—</p> <p>(aa) the removal of all renewable energy structures and appurtenant structures, including equipment, bases, foundations, security barriers and transmission lines directly related to the renewable energy;</p> <p>(bb) disposal of all solid and hazardous waste in accordance with</p>	<p>The renewable energy facility is designed to operate for approximately 25 years before decommissioning and site rehabilitation. The facility's decommissioning is likely to occur due to technological advancements or economic factors that make the facility obsolete, although the developer has the option to extend the facility's lifespan. To promote sustainable waste management, solar panels are considered hazardous waste and cannot be disposed of in landfills in SA since August 2021. Instead, the panels must be recycled because they contain valuable components. Countries with established recycling and manufacturing facilities often offer to purchase old solar panels. Cape Town is a well-known recycling centre for solar panels, and the facility owner plans to engage with appropriate parties to dispose of the panels responsibly after decommissioning<sup>18</sup></p>	<p>Will comply.</p>

<sup>18</sup> Refer To Environmental Management Programme (EMPr) With regards to Decommissioning- **Annexure D**



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<p>provincial and local waste disposal regulations; and</p> <p>(cc) the stabilisation and re-vegetation of the site with indigenous vegetation to minimise erosion.</p> <p>(vi) The Municipality may, in order to minimise erosion and disruption to natural vegetation and habitats, grant permission to the owner to depart from the decommissioning plan in respect of removing landscaping, underground foundations or other underground components, provided these do not cause any pollution.</p> <p>(vii) Before the construction of the renewable energy structure commences, the owner must make financial provision or an alternative reasonable arrangement, to the satisfaction of the Municipality, for protection against failure by the owner to comply with the obligations in terms of this By-law and in the event of the owner being unable to fulfil the necessary financial obligations for the rehabilitation or management of the negative environmental impact of decommissioning or of abandonment.</p> <p>(viii) If the owner fails to remove the structure or its parts in accordance with the requirements of these regulations within 150 days of abandonment or the date of decommissioning or an approved extension date, the Municipality may enter the property and remove the structure and its parts, and recover all removal costs incurred from the owner.</p> <p>(ix) If the owner fails to meet the requirements of subitem (i), the Municipality may, after written notice to the owner, use all or part of the financial provision or other provision referred to in subitem (vii) to rehabilitate or manage the negative environmental impact concerned, or to remove the facility.</p>		
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The setback, lighting and noise and air quality regulations pertinent to wind renewable energy facilities are not applicable to the proposed development of solar PV panels. The installation of solar PV panels does not involve any lighting. However, in the event that lighting becomes a consideration in the future, the requisite application will be submitted to the South African Civil Aviation Authority.

In addition to the above, the renewable energy structures are also subject to the 30m agricultural building line parameter. The development does not encroach on the building line restrictions.

The zoning scheme does not have provisions to accommodate the charging area. However, after



consulting Beaufort West Municipality, it was decided that the most appropriate way to address the EV charging area is to apply for a Tourist facility to accommodate the existing restaurant situated within the farm stall, which, furthermore, is accommodated by an EV charging station as an ancillary use thereto.

<b>Agricultural Zone I (AZI)</b>		
<i>The objective of this zone is to promote and protect agriculture on farms as an important economic, environmental and cultural resource. Limited provision is made for non-agricultural uses to provide rural communities in more remote areas with the opportunity to increase the economic potential of their properties, provided these uses do not present a significant negative impact on the primary agricultural resource.</i>	<b>Primary use</b> <ul style="list-style-type: none"> <li>Agriculture</li> </ul>	<b>Consent uses</b> <ul style="list-style-type: none"> <li>Abattoir</li> <li>Additional dwelling units</li> <li>Agricultural industry (&gt;2000m<sup>2</sup>)</li> <li>Airfield</li> <li>Animal care centre</li> <li>Aqua-culture</li> <li>Camping site</li> <li>Farm shop</li> <li>Farm grave yard</li> <li>Freestanding base telecommunication station</li> <li>Function venue</li> <li>Guest house</li> <li>Helicopter landing pad</li> <li>Off-road trail</li> <li>Plant nursery</li> <li>Quarry</li> <li>Renewable energy structure</li> <li>Shooting range</li> <li>Tourist facilities</li> <li>Utility service</li> </ul>

“Tourist Facilities” is defined as follows in terms of the Beaufort West Municipal Zoning Scheme By-law:

**“tourist facilities”**

**Land use description:** “*tourist facilities*” means amenities for tourists or visitors and—

- includes lecture rooms, restaurants, gift shops, restrooms, farmers’ market and recreational facilities; and
- does not include an off-road trail, a hotel, wellness centre; or tourist accommodation.

**Development parameters:**

Development parameters applicable to “agriculture” apply.

For this reason, the application entails applying for a consent use for a Tourist Facility in order to accommodate the existing restaurant, which is situated within the Farm Shop, with the EV charging station as an ancillary use to the consent use applied for.

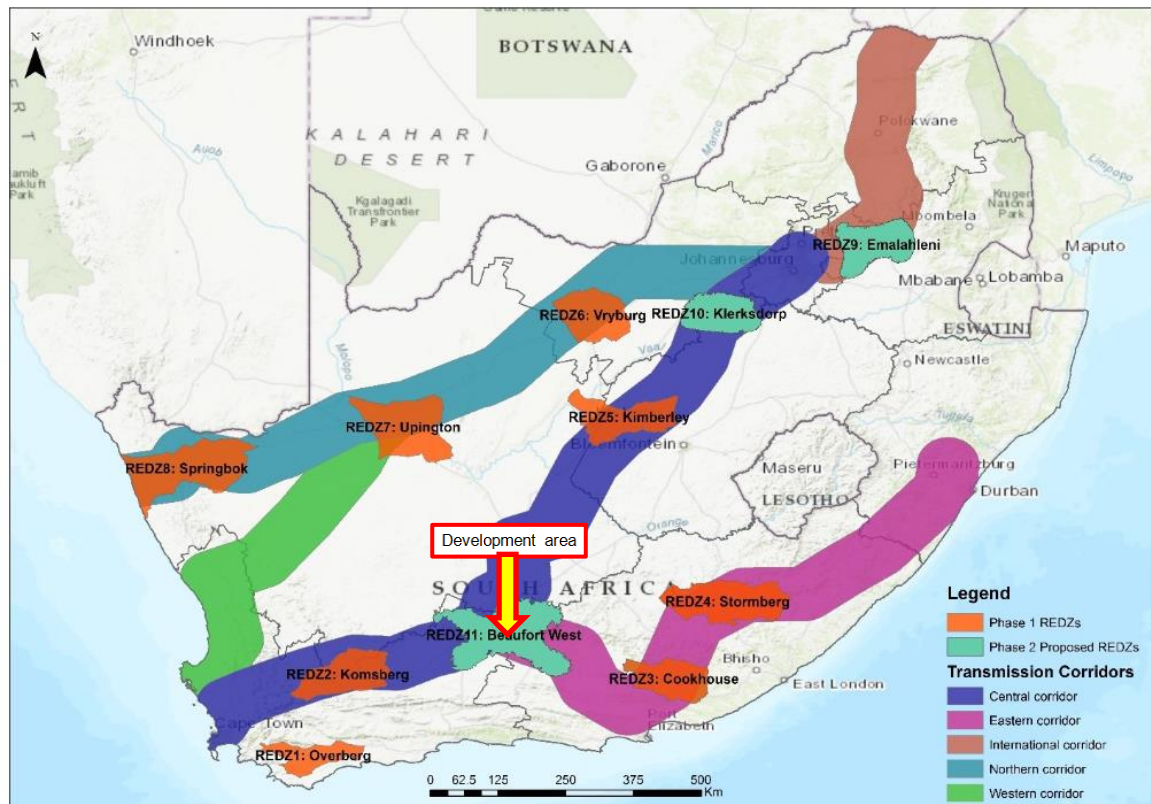
## 7. MUNICIPAL SPATIAL DEVELOPMENT FRAMEWORK (MSDF)

The application property falls within the Gamka River Basin bio-region of the Beaufort West Municipality. The MSDF states: “*The Karoo region is blessed with significant solar and wind energy – the prerequisites for successful renewable energy projects. The Karoo should leverage this asset to encourage Independent Power Producers to locate in the region, also making the Central Karoo a well-managed and desirable place to locate, if one is connected to this industry.*”

*National government has identified preferred areas or Renewable Energy Development Zones (REDZ’s), as well as identified areas for electricity generation. Notwithstanding this, there are vast areas of the*



*Central Karoo outside of these REDZ's that hold potential to generate renewable energy. These areas should not be completely ignored in supporting the future energy resilience of the province and country."*



Location of 8 existing Renewable Energy Development Zones (REDZs) and 3 proposed additional zones, overlayed onto the electricity grid infrastructure corridors where investment in transmission infrastructure is planned.

The development area is located within Phase 2 of the proposed REDZ as well as within the Central Transmission Corridor. The scale of the proposal is not as such that it should be considered within the context of these zones. This is because the facility will generate 1MW or less and electricity will not be put back into the grid but will only be made available for the activities on the subject property. There is potential at a later stage to expand the footprint and generating capacity and to put the electricity back into the grid.

#### **POLICY A8: CENTRAL KAROO CLIMATE CHANGE ADAPTATION AND MITIGATION POLICY**

The application aligns with the national agenda of reducing the carbon footprint and supports the policy to mitigate climate change by offering important environmental benefits. Through the use of renewable energy to power the charging station, the development will contribute towards the reduction of greenhouse gas emissions and promote a shift towards a low-carbon economy. This step is crucial in meeting SA's commitments to reduce carbon emissions and address climate change. In addition to its environmental impact, the facility will serve an essential role in catering to the increasing number of electric vehicles on the road, making it easier for people to adopt this eco-friendly mode of transportation. The proposed facility should be seen as a crucial element in the wider context of promoting sustainable development and reducing greenhouse gas emissions. The installation of electric vehicle charging infrastructure at this location will address a significant gap in the region's transportation network, and support the transition to a low-carbon, sustainable transportation system.

The MSDf in general supports the development of renewable energy projects.



Apart from the above, the proposal supports policies that are important informants of the MSDF such as Spatial Development Goal 7 of the UN's 2030 Agenda for Sustainable Development which seeks to focus on sustainable energy to ensure that adequate energy is supplied in order to meet developmental challenges increase energy security and mitigate climate change and the Western Cape Infrastructure Framework (WCIF, 2013) initiative to promote the development of renewable energy plants in the Province. The development proposal addresses renewable energy on a micro-level by providing a renewable energy structure that is far smaller and will consequently have a smaller development footprint and visual impact, compared to larger renewable energy structures. The value of the proposal lies in its potential to have a positive cumulative impact on a national level. It is consequently argued that the development proposal is aligned and in support of the MSDF.

## 8. OTHER APPLICABLE LEGISLATION & GUIDELINES

### 8.1. Constitution of SA - Chapter 2 of the Constitution is the Bill of Rights

The Bill of Rights is a cornerstone of democracy in SA. It enshrines the rights of all people in our country and affirms the democratic values of human dignity, equality, and freedom. Section 2 (24) *Environment* affirms the right of every person to (a) an environment that is not harmful to their health or well-being; and (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that; (i) prevent pollution and ecological degradation; (ii) promote conservation; and (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development. The proposal supports the rights of Section 2 (24) of the Bill of Rights by supporting reducing the impacts of a carbon-based economy and greenhouse gasses to promote a transition to a low-carbon, sustainable energy future, which delivers clean sources of energy to urban consumers and mitigates the effects of climate change.

### 8.2. Electricity Regulation Act (ACT 4 of 2006) & Integrated Resources Plan (IRP, 2019)

The Integrated Resource Plan for Electricity (IRP) provides SA's long-term plan for electricity generation to ensure the security of electricity supply, minimise the cost of that supply, limit water usage and reduce greenhouse gas (GHG) emissions while allowing for policy adjustment in support of broader socio-economic developmental imperatives. The IRP, 2019, calls for 37 696 MW of new and committed capacity to be added between 2019 and 2030 from a diverse mix of energy sources and technologies as aging coal plants are decommissioned and the country transitions to a larger share of renewable energy. By 2030, the electricity generation mix is set to comprise 33 364 MW (42.6%) coal, 17 742 MW (22.7%) wind, 8 288 MW (10.6%) solar photovoltaic (PV), 6 830 MW (8.7%) gas or diesel, 5 000 MW (6.4%) energy storage, 4 600 MW (5.9%) hydro, 1 860 MW (2.4%) nuclear and 600 MW (0.8%) concentrating solar power (CSP). Furthermore, a short-term gap at least 2 000 MW is to be filled between 2019 and 2022, thereby raising new capacity requirements, while distributed or embedded generation for own use is positioned to add 4 000 MW between 2023 and 2030. In May 2020, NERSA concurred with a determination for the procurement of various technology solutions to close the 2 000 MW gap (between 2019 and 2022), while another determination is undergoing public consultation and awaiting concurrence by NERSA.

Accordingly, it is clear that there is a shortage of alternative energy-producing facilities. While the proposal will not contribute to the generation of electricity that will be fed into the grid, it will facilitate the adaption of EVs without placing further strain on the already over-burdened electric network. Without such facilities, it is difficult to envisage a large-scale market adaption to EVs due to inconsistent electricity provision and limited availability.



### 8.3. National Development Plan 2030 (NDP, 2012)

The National Development Plan (National Planning Commission, 2012) sets out six interlinked priorities (National Planning Commission, 2012 - P. 29):

- Uniting all South Africans around a common programme to achieve prosperity and equity;
- Promoting active citizenry to strengthen development, democracy and accountability;
- Bringing about faster economic growth, higher investment and greater labour absorption;
- Focusing on key capabilities of people and the state;
- Building a capable and developmental state; and
- Encouraging strong leadership throughout society to work together to solve problems.

Transforming the SA economy is a challenging, long-term project. The NDP proposes to enhance human capital, productive capacity, and infrastructure to raise exports, which will increase resources for investment and reduce reliance on capital inflows. Higher investment, supported by better public infrastructure and skills, will enable the economy to grow faster and become more productive. Rising employment and productivity will lead to improved incomes and living standards and less inequality. Shifting the economy towards more investment and lower consumption is thus necessary for long-term economic prosperity (P. 42). The proposed facility contributes to achieving this goal by providing infrastructure that supports the adaption of EVs which contributes to reducing the carbon footprint of SA.

### 8.4. Provincial Spatial Development Framework (PSDF)

The Western Cape Provincial Spatial Development Framework, Provincial Government of the Western Cape (2014), refers to the importance of a coherent framework for the province's urban and rural areas that gives spatial expression to the National and Provincial development agendas. The Spatial Development Plan proposed several spatial policies, including policy R4 which relates to "Recycle and recover waste, deliver clean sources of energy to urban consumers, shift from private to public transport, and adapt to and mitigate against climate change". Specific objectives related to energy include pursuing energy diversification and energy efficiency for the Western Cape to transition to a low carbon, sustainable energy future, and delink economic growth from energy use. Furthermore, emergent Independent Power Producers (IPPs) and sustainable energy producers (wind, solar, biomass and waste conversion initiatives) should be supported in suitable rural locations. In short, The Western Cape's energy is primarily drawn from the national grid which is dominated by coal-based power stations and the goal is to develop the renewable energy sector. The proposal supports the objectives of the PSDF by proposing a land use that contributes to the transition to a low-carbon, sustainable energy future, which delivers clean sources of energy to urban consumers and mitigates the effects of climate change.

### 8.5 Western Cape Land Use Planning Guidelines for Rural Areas, March 2019

The following table contains extracts from the Rural Development Guidelines which have specific bearing on the proposed development, and our response thereon.

Rural Development Guidelines	Motivation / Justification
Good quality and carefully sited development should be encouraged and located as far as possible in existing settlements (page 35)	The scarcity of suitable, developable land in and around the surrounding towns presents a considerable challenge in identifying appropriate locations for the proposed development. Given this limited availability, it is essential to explore alternative options outside urban boundaries. Additionally, the efficiency of a solar array is heavily dependent on optimal site conditions; placing it within a



	<p>town setting could reduce operational efficiency and would likely impact the town's residents more significantly.</p> <p>As outlined in Section 5, "Why not within the Urban Area or on Roofs." Placing the proposed development within an urban area would disrupt the town's character and constrain future expansion or development possibilities. Locating this facility in a rural context, by contrast, minimises its impact on urban aesthetics and preserves space for the town's long-term growth.</p>
All development in rural areas should be in keeping and in scale with its location, and sensitive to the character of the rural landscape and local distinctiveness (page 35)	<p>The principle that all development in rural areas should be in keeping with its location and sensitive to the character of the rural landscape and local distinctiveness is paramount in guiding sustainable development practices. Clustering of developments in rural areas can indeed contribute to the formation of nodal areas.</p> <p>The placement of the proposed development is situated between Beaufort West and De Rust, adjacent to an existing farm shop on agricultural land with low agricultural capabilities. This proposed development provides a valuable amenity for visitors and the placement could be considered as a form of clustering due to being proposed adjacent to the existing farm shop. When done thoughtfully and in harmony with the rural landscape, such clustering can contribute to the vitality of rural areas while preserving the agricultural landscape.</p>
The cumulative effect of all ancillary and non-agricultural land uses should not detract from the rural character of the landscape and the primary agricultural activities (page 35)	<p>By strategically integrating ancillary amenities like a tourist facility, a solar array and accompanied charging station, the landowner can diversify revenue streams and bolster the financial sustainability of the existing agricultural operation. This new income can directly be reinvested into supporting and enhancing existing agricultural land uses, such as improving infrastructure, implementing sustainable farming practices, or expanding agricultural production.</p> <p>Furthermore, when done thoughtfully and in harmony with the rural landscape, the clustering of ancillary activities can contribute to the vitality of rural areas while preserving the agricultural and possible cultural heritage of the area. By ensuring that these activities complement rather than overshadow primary agricultural activities, the landowner can maintain the rural character of the landscape while capitalising on new financial opportunities.</p> <p>While it is important to avoid detracting from the rural character of the landscape and primary agricultural activities, the strategic integration of ancillary amenities like tourist facilities accompanied by charging stations can provide additional financial benefits to the landowner. This new financial gain can directly contribute to supporting and enhancing existing agricultural land uses on the property, reinforcing the symbiotic relationship between rural development and agricultural sustainability.</p>



<p>Rural activities must have a focus on sustainability and be in harmony with the surrounding agricultural landscape</p>	<p>Firstly, the proposed tourist facility will help with the promotion of tourism within the area, where several surrounding existing activities could be introduced and exposed by means of pamphlets. The charging station promotes sustainable transportation by providing a convenient and environmentally friendly option for electric vehicle owners. This reduces reliance on fossil fuels and lower carbon emissions, aligning with broader sustainability goals.</p> <p>Additionally, the tourist facility enhances the overall visitor experience to the charging station, attracting environmentally conscious consumers who value sustainable practices. This not only supports the economic viability of the farm, tourist facility and charging station, but also fosters a culture of sustainability within the local community.</p> <p>The proposed charging station embodies the principle of sustainability and harmony with the agricultural landscape by promoting renewable energy use, reducing carbon emissions, and enhancing visitor experience. By leveraging the off-grid infrastructure and embracing innovative solutions, the landowner and developer demonstrates a proactive approach to sustainable rural development that benefits both the environment and the local economy.</p>
<p>Agricultural resources should be protected for increased agricultural production</p>	<p>It is well known that the agricultural sector is significantly negatively impacted by loadshedding. For instance, the poultry industry incurs millions in cost for backup power to maintain air conditioning, while the fruit industry suffers heavy losses due to inadequate electricity for irrigation and storage purposes. Similarly, the wine industry faces substantial losses in managing their cellars due to loadshedding. This pattern of disruption extends throughout the entire agricultural sector.</p> <p>Any initiative that supports the national grid, whether directly or indirectly, should be wholeheartedly supported. The temporary use of agricultural land for electricity generation purposes is strongly endorsed by the agricultural sector, as it helps mitigate the adverse effects of loadshedding and promotes overall stability in agricultural production.</p> <p>The proposed development, particularly the integration of a tourist facility accompanied by a charging station alongside existing agricultural activities, will have a greater impact in the long run by protecting agricultural resources for increased agricultural production.</p> <p>Firstly, by diversifying the income streams of the property through the proposed development, the landowner can generate additional revenue without compromising the</p>



	<p>agricultural land's integrity. This additional financial support can be reinvested into agricultural infrastructure, equipment, and sustainable farming practices, ultimately leading to increased agricultural productivity.</p> <p>Moreover, the presence of the charging station can attract more visitors to the area, including tourists and local residents, who may also enjoy the tourist facility and other agricultural offerings. This possible slight increased foot traffic can provide opportunities for agritourism activities in the surrounding areas, further boosting the agricultural sector's visibility and economic viability.</p> <p>Furthermore, the charging station's and accompanying PV Array's integration with the existing farm shop and into the existing agricultural landscape demonstrates a harmonious relationship between rural development and agricultural preservation. By showcasing innovative solutions that complement rather than compete with agricultural activities, the proposed development reinforces the importance of protecting agricultural resources for long-term sustainability.</p>
Place-bound businesses (businesses ancillary to agriculture or serving rural needs) include farm stalls and farm shops, restaurants, and venue facilities (e.g. conferences and weddings) (page 56)	<p>The proposed development aligns with the concept of place-bound businesses, which are ancillary to the agriculture or serve rural needs. By integrating the proposed development near the existing farm shop, N12 National Route, the development enhances the overall appeal and functionality of the rural area.</p> <p>The proposed development provides an essential service that meets the needs of both the locals and the visitors, supporting sustainable transportation practices and addressing the growing demand for electric vehicle infrastructure in rural areas. this amenity enhances the accessibility and attractiveness of the area, contributing to the success of other place-bound businesses situated in the close vicinity.</p> <p>By attracting more visitors to the area, the proposed development stimulates the economic activity and supports the viability of local businesses such as farm stalls, shops and restaurants. The increased foot traffic creates opportunities for these businesses to thrive and expand their offerings, further enriching the rural experience for residents and visitors alike.</p>
Non-Place-bound businesses (businesses not ancillary to agriculture or serving rural needs), should be located within urban areas and should only be considered in the rural area when exceptional cases and locational factors warrant such a land use. The obligation is on the applicant to illustrate why the land use cannot be accommodated in the urban area. Examples	<p>Please refer to the point above, motivating why the proposed development could be considered as a place-bound business.</p>



include a Petrol station, hardware store, truck stop, transport contractors, wellness centres, frail care facilities and animal feed factory (page 41 & 57)	
With respect to infrastructure. Where locations inside urban areas are impractical, agricultural areas peripheral to settlements are the preferred alternative (page 62)	The Western Cape Rural Guidelines states that where proposed bulk infrastructure installations are planned to serve the broader community, as is the case, due to extensive space required, it could be supported outside urban areas. (page 62)
Where possible, installations should be located on previously disturbed terrain, or land of low biodiversity or agricultural value and should not interfere with, or impact negatively on existing or planned production areas, as well as agricultural infrastructure.	While the proposed development is proposed on agricultural land, it is important to note that, the portion of agricultural land <b>(0.036% of The Property)</b> where the proposed development is proposed on, are considered to be low agricultural potential land. The development adheres to the principle of minimising interference with existing agricultural activities and infrastructure. By selecting suitable sites and implementing mitigation measures, the installation can be integrated sensitively into the landscape while still meeting the demand for sustainable transportation infrastructure. It is also important to note that due to substantial costs for transporting of electricity energy, it is most efficient to situate the generating facility adjacent to the charging stations.

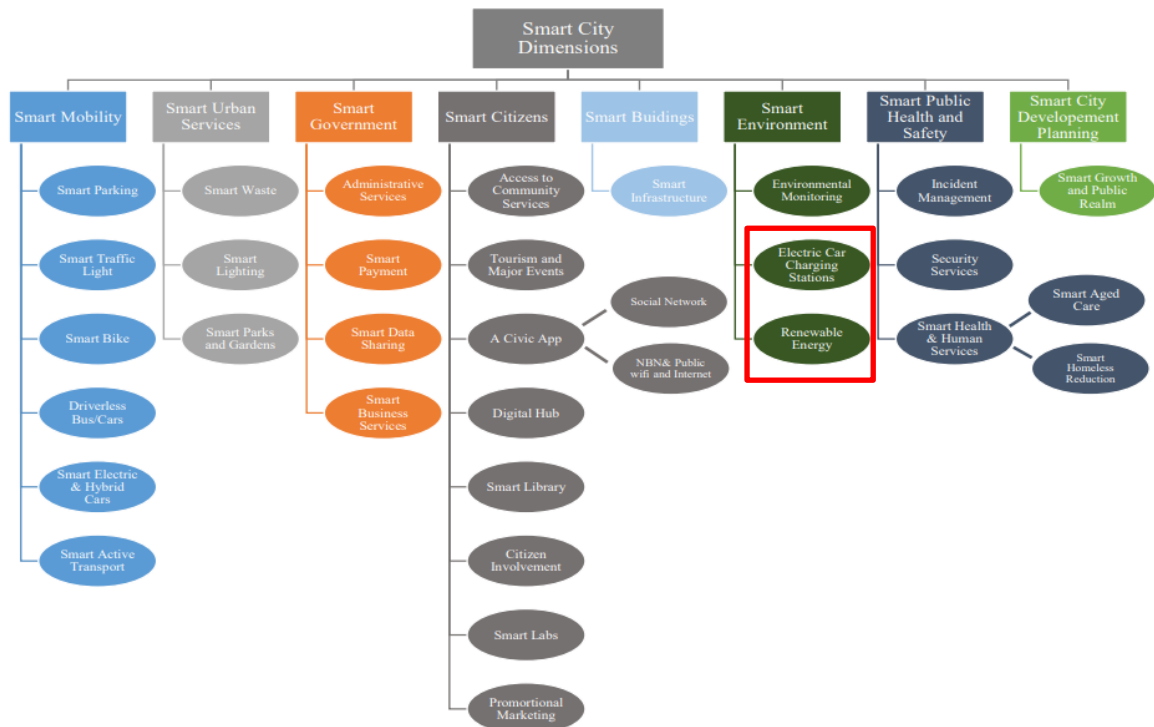
## 8.6 SALGA Smart City Development Maturity Framework

The SA Local Government Association (SALGA) has compiled a development framework to provide clear guidance to local municipalities for developing smart cities.

*“A smart city is built on technology but focused on outcomes. It aims at increasing citizens’ quality of life and improving the efficiency and quality of the services provided by local government entities and businesses. There are several definitions used to conceptualise a “smart city.” The working definition used in this document is: “city that effectively integrates the physical, spatial, digital and human worlds to deliver a sustainable, prosperous and inclusive future for its citizens”.*

A smart city has multiple dimensions consisting of smart mobility, urban services, government, citizens, buildings, environment, health & safety and city development planning. The proposal satisfies two categories listed under the “Smart Environment” classification which relates to “Electric Car Charging Stations” and “Renewable Energy”. The smart environment concept covers the incorporation of innovative measures to protect and manage natural resources. The proposal supports the development and implementation of such innovative technologies that will contribute to reducing carbon emissions and provide supporting infrastructure that allows for large-scale market adoption of EVs.





## 9. PRINCIPLES OF LAND USE PLANNING

In accordance with Article 42 of the SPLUMA, a Municipal Planning Tribunal must be guided by the development principles as set out in Chapter 2 when considering an application. In terms of section 6 (1), the general principles set out in Chapter 2 apply to all organs of state and other authorities responsible for the implementation of legislation governing the use and development of land. The following principles apply in terms of Section 7 to spatial planning, land development and land use management, namely: Spatial Justice, Spatial Sustainability, Efficiency, Spatial Resilience, and Good Administration.

In accordance with Section 59 (2) of LUPA, a municipality considering a land-use application should take into account, among other things, the principles referred to in Chapter VI. Pursuant to Rule 58, the Land Use Planning Principles set out in Chapter VI apply to all organs of state responsible for implementing legislation that governs land use planning and development. These principles correspond with those of SPLUMA namely: Spatial Justice, Spatial Sustainability, Efficiency, Spatial Resilience and Good Administration.

**Spatial Justice:** The proposed development is consistent with the provincial goals to generate renewable energy in order to pursue sustainable energy initiatives. The application will not result in the exclusion of any groups. The proposed facility will create job opportunities both during the construction phase and while operational, while concurrently subsidizing the landowners of the properties' income stream.

**Spatial Sustainability:** The proposed solar photovoltaic facility aims to use the most efficient method (which is cost-effective and utilises the least space) to generate sustainable energy. The proposal supports a transition to a low-carbon, sustainable energy future, which delivers clean sources of energy to urban consumers, and mitigates the effects of climate change without threatening any ecological resources. The application will not result in extensive loss of agricultural land with high potential, due to the small extent that will be used to accommodate the proposed facility. The development will be self-sustaining, making use of electricity generated by the facility. Water and waste-related infrastructure will be provided and maintained by the developer. These services will not be similar to those provided for



residential occupancy as the facility will be remotely operated with inspections and occupancy only recurring from time to time. The facility will promote long-term financial sustainability for the property.

**Spatial Efficiency:** Natural resources will be used and less pressure will be on non-renewable resources. The proposal will result in the efficient use of land by capitalising on the opportunity created by the unique climate, without threatening the prosperity of the larger agricultural landscape.

**Spatial resilience:** The proposed development can easily be decommissioned and demolished allowing for the reinstatement of farming activities.

**Principles of Good Administration:** The application will be taken through the Public Participation Process and all relevant departments will be notified to comment. The decision-making process will be guided by statutory land use planning systems.

## 10. CONCLUSION

The proposed development contributes to the goals of the White Paper on Renewable Energy. Renewable energy provides an environmentally friendly alternative to energy generation and can contribute to the restriction of pollution and global warming. The application can be seen positively in the light of the following:

- The facility will increase electricity capacity to contribute to the alleviation of SA's energy crisis;
- The facility will meet the demand for diversified energy sources;
- Ensure the future of sustainable energy use;
- Provide local employment opportunities;
- Reduce CO<sub>2</sub>-emissions and the nation's carbon footprint;
- The proposed development is supported by the MSDF;
- The proposed development supports spatial sustainability in terms of SPLUMA;
- The proposed development is supported by the Provincial Spatial Development Framework (PSDF) which guides sustainable future development in the province;
- The proposed development is supported by the National Development Plan 2030 (NDP);
- The proposed development is considered to be in alignment with the Western Cape Rural Development Guidelines;
- The proposal has an array of socio-economic benefits including;
  - ❖ **Increased energy security:** The current energy crisis in SA emphasizes the important role that renewable energy can play to generate electricity.
  - ❖ **Reduced pollution levels:** The emissions of carbon dioxide by-products generated from burning fossil fuels to generate power have a very harmful impact on human health and contribute to the deterioration of ecosystems. The generation of electricity will not result in any emissions.
  - ❖ **Acceptability to the community:** Energy generation through wind and solar has a number of benefits to the community such as reduced pollution, improved human and ecosystem health, generation of jobs in the short term, and no contribution to factors that cause climate change.
- The site has specific circumstances that make it ideal for the development proposal. These factors include the proximity of the N12 which is a prominent corridor that makes the site highly accessible

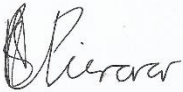


Consent Use	<b>Farm:</b>	Farm 432	<b>RD:</b>	Beaufort West
<b>Ref no:</b> BW/13565/RP	<b>By:</b>	RP	<b>Edit Date:</b>	19-Feb-25
Page 32 / 32				

and provides exposure for the facility.

- The properties will be utilised for multiple purposes, agriculture, tourism, and renewable energy infrastructure, maximising the development potential.

It is, therefore, clear that in terms of the above, the application can be supported. For all the above reasons, the application is strongly recommended by CK Rumboll & Partners and requests that Council consider it positively.




---

Roeben Pienaar  
 Pr. Pln A/3045/2021  
 CK RUMBOLL & PARTNERS



# MAPS & DIAGRAMS

**Figure 1: Locality Map**

**Figure 2: Site Development Plan**

**Figure 3: 3D Representations**




## **Figure 1: Locality Map**



## Locality Map: Farm no 432, Beaufort West RD



### Legend

 Farm Portions

**Map Center:** Lon: 22°32'40.9"E  
Lat: 32°28'43"S

**Scale:** 1:190,000

**Date created:** 2024/06/03



**Western Cape  
Government**  
**FOR YOU**



## **Figure 2: Site Development Plan**







### **Figure 3: 3D Representations**





















SUPPORT: 0800 777 434 / 011 617 4400

CHARGER 03  
SITE CODE: C-N012-01



Scan this QR code to download the CHARGE app

See Volvo Public charging network

LR 07 CN GP





















everlectric  
Powering Your Journey

100% Electric Vehicle

No Fuel Tank

500A  
CHARGE  
www.charge.co.za

LX 83 WW GP

LT 11 TP GP

MAX HEIGHT 3m

Thank you for helping us drive  
toward a net-zero future!

CHARGE

FEEDBACK SUPPORT

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500A









10:59

4G

Search

1.69

kWh

R5

Amount

A

Charger

70%

Sessions

Account















# FARM FLAIR













# CHARGE Wolmaransstad



*The first in our national network of 120 solar-powered,  
off-grid, ultra-fast charging stations*





**ANNEXURE A:**  
**The CHARGE Project – Development Concept**



# ZERO CARBON CHARGE (PTY)LTD



## Development Concept



[www.charge.co.za](http://www.charge.co.za)

The information contained in these documents is confidential, privileged and only for the information of the intended recipient and may not be used, published or redistributed without the prior written consent of Zero Carbon Charge (Pty) Ltd.





## Introduction to Zero Carbon Charge

---

Zero Carbon Charge (CHARGE) is at the forefront of revolutionizing sustainable transportation infrastructure in South Africa. Our mission is to establish a nationwide network of ultra-fast chargers exclusively powered by renewable energy sources, particularly solar power. **Our goal is to decrease carbon emissions and prepare South Africa for the inevitable transition to electric vehicles (EVs).**

Our solution involves producing and storing renewable energy at the point of sale, thereby eliminating pressure on the grid and ensuring a reliable, sustainable energy source for EVs.

Each site will have a Solar Photovoltaic System, generating clean electricity for powering the charging stations and other facilities. The charging stations will be equipped with the latest technology for convenient and fast charging. Each site will also have a rest area and refreshment facility, restrooms and parking area.

## The CHARGE Project Importance

---

The CHARGE project represents a paradigm shift in South Africa's approach to transportation infrastructure and energy consumption by spearheading the transition to a zero-carbon mobility economy. Through strategic investments in renewable energy and innovative charging solutions, we are paving the way for a more sustainable future, characterized by cleaner air, reduced emissions, and enhanced energy security. **The CHARGE project is not just about building charging stations; it's about catalysing a fundamental shift towards greener, more resilient transportation systems that benefit both present and future generations.**

## Safeguarding the Environment

---

**Our approach to minimizing environmental impact encompasses various innovative strategies.**

- By generating power locally through Solar Photovoltaic Systems (PV), we not only reduce reliance on traditional power infrastructure but also **minimize visual pollution by eliminating the need for extensive power pylons.**
- Refreshment facilities are designed to comply with the appropriate energy-efficiency requirements.
- Our **commitment to responsible water usage** is evident through the implementation of grey water treatment systems for on-site vegetation irrigation. We will make use of water harvesting methods where possible and water will be purified on-site for all refreshment facilities built by CHARGE.
- We also have traffic engineering consultants on the team advising us on safe access, relevant regulations, and **minimising the impact on traffic flow.**

## Local Economic Impact

---

Zero Carbon Charge is committed to driving local economic development and empowerment. Through our long-term lease agreements with landowners, we establish a symbiotic relationship that benefits both the community and the environment by involving the community in the long-term energy value chain. Revenue generated on the property directly **contributes to the local economy and creates permanent jobs.**





Moreover, our farm stalls (refreshment facilities) serve as platforms for promoting local produce and products, injecting capital into the community and fostering a sense of pride and ownership. We will also engage local contract service providers for security, electrical, and plumbing services.

- Our off-grid EV Charging Stations will develop the EV ecosystem, not only fostering existing jobs and careers, but also creating new opportunities for future career development.
- We allocate 1% of on-site turnover from electricity generation and sale to local social investment, promoting skills development and empowering the local community.
- Supporting black landowners through traditional leadership: we will be working closely with traditional and royal leadership to support our site procurement, making a concerted effort to include black landowners as beneficiaries of the EV charging revolution in South Africa. This will also support previously disadvantaged communities and landowners to be included, rather than only focusing on landowners that are traditionally privileged.

## National Impact

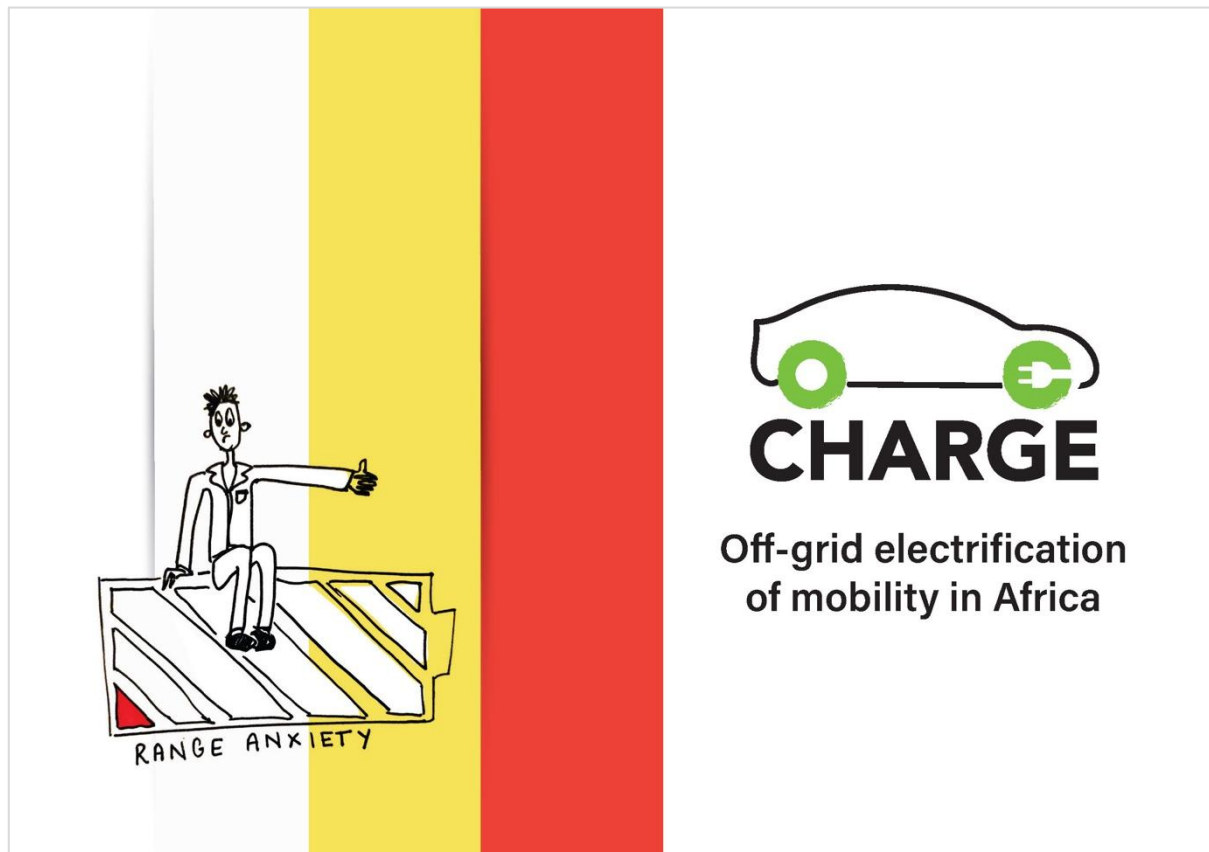
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**The impact of Zero Carbon Charge extends far beyond individual communities, contributing to a larger national agenda of energy independence and sustainability. Establishing a national network of ultra-fast charging stations acts as a catalyst for the uptake of electric vehicles, promoting sustainable mobility in congruence with the Spatial Planning and Land Use Management Act (SPLUMA).**

- By utilizing locally generated electricity, we alleviate pressure on the national grid and reduce reliance on foreign energy sources.
- Our network of ultra-fast charging stations not only accelerates the adoption of EVs but also supports South Africa's commitment to reducing greenhouse gas emissions and mitigating climate change.
- By promoting sustainable mobility and energy localization, we play a pivotal role in shaping the future of transportation infrastructure and fostering a greener, more resilient economy for all South Africans.



## The CHARGE brochure



Introducing South Africa's first off-grid national charging network for electric vehicles – powered by 100% renewable energy



### UNIQUE SOLUTION

TARGETTING RURAL  
AREAS, HIGHWAYS  
AND MAJOR ROUTES

#### OFF-GRID

100% Grid independent – with no loadshedding or future growth restrictions.

#### NATIONAL

A charging station every 150km on all national and major routes.

#### ULTRA-FAST

Charging an EV to 80% in about 20 minutes with high power chargers.

#### 100% RENEWABLE ENERGY

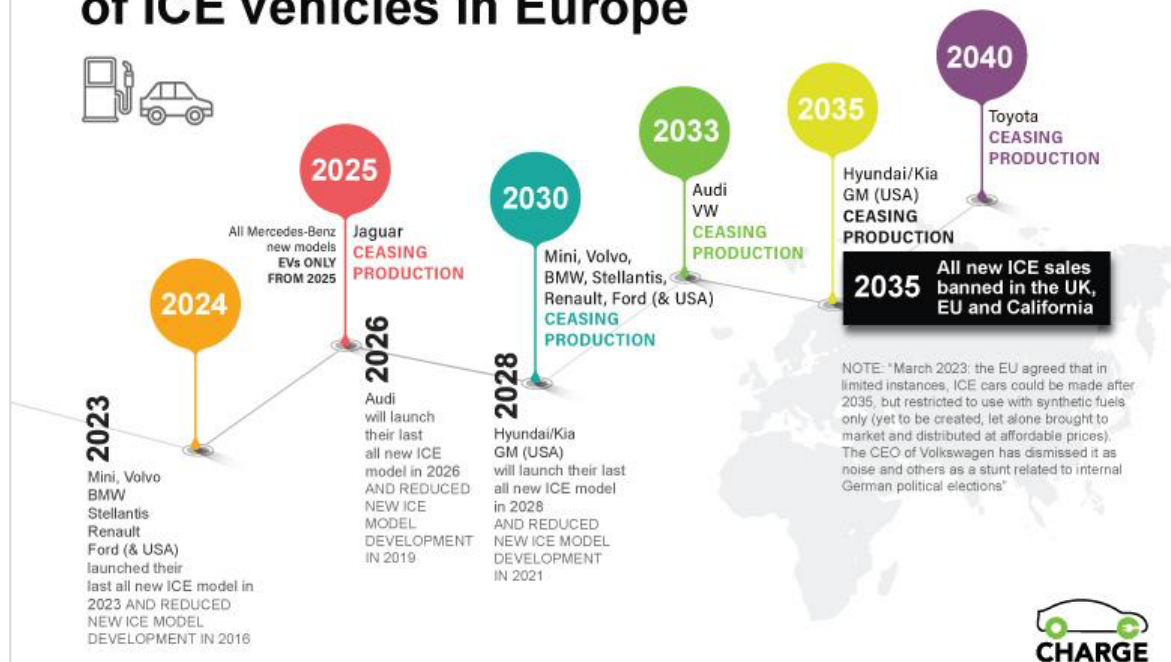
On-site power generation at each charging location.

#### CUSTOMER CENTRIC

User friendly app, easy payment options, fast WiFi, restrooms, shop.



## Manufacturers ceasing production of ICE vehicles in Europe



## SHIFT TO ELECTRIC VEHICLES IS INEVITABLE

The transition to electric vehicles in South Africa is not merely a possibility but an inevitability, marking a pivotal moment in the history of transportation.

The SA motor industry is part of a giant integrated global supply chain. As the global chain pivots to EVs, South Africa's market will increasingly shift to EVs along with the markets of its major suppliers.

**1-in-4 new cars sold globally were electric in 2023.**



Having only a 0.5% share in the international car market, SA is inevitably bound to embrace the shift towards electric vehicles.



## Global EV uptake

### 2023

A total of 14,2 million new Battery Electric Vehicles (BEV) and Plug-in Hybrids (PHEV) sold

### GLOBAL CAR MARKET

2020: EV = 5% market share  
2023: EV = 19% market share

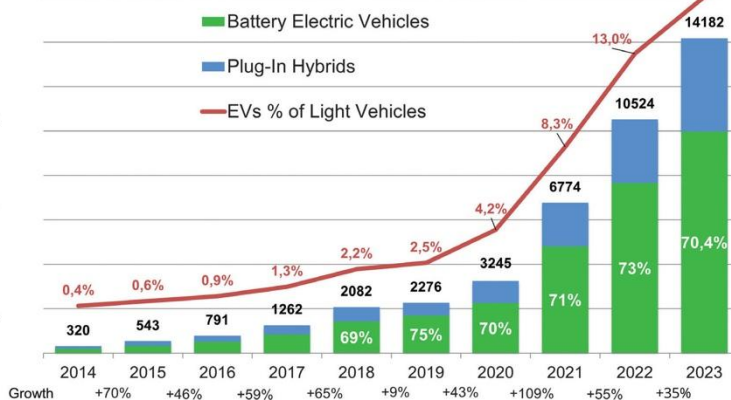
5 months of 2023 witnessed new all-time highs for EV sales, Market share increases were consistent throughout the year.

Investors have also maintained confidence in EVs, with the stocks of EV-related companies consistently outperforming traditional carmakers since 2019

### GLOBAL BEV & PHEV SALES

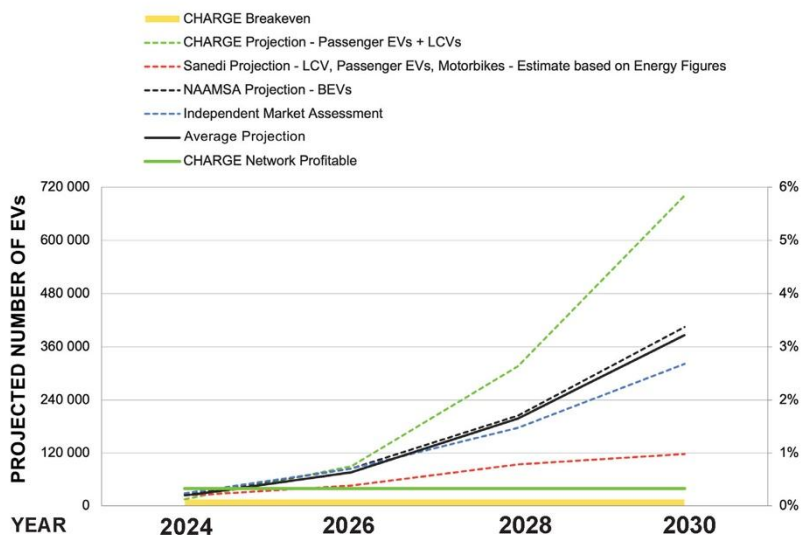
('000s)

EV VOLUMES



SOURCE: EVvolumes.com

## EV uptake projections for South Africa



'NAAMSA' National Association of Automobile Manufacturers of South Africa

'SANEDI' South African National Energy Development Institute

'PHEV' Plug-in hybrid electric vehicle

'LCV' Light commercial vehicle



## 'ENERGY CRISIS'

**In South Africa grid powered EV charging presents fundamental problems**

### 1. CARBON FOOTPRINT

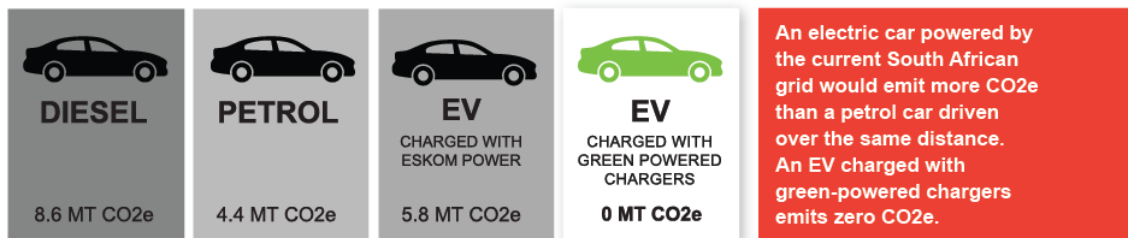
EVs are only as green as the power supply.

### 2. UNRELIABLE SUPPLY

Eskom cannot for the foreseeable future be trusted to supply reliable stable power.

### 3. SHORTAGE OF SUPPLY

When the EV uptake escalate Eskom will not be able to supply sufficient power.



Over average distance driven per year: 25 000 km (18 000 miles)

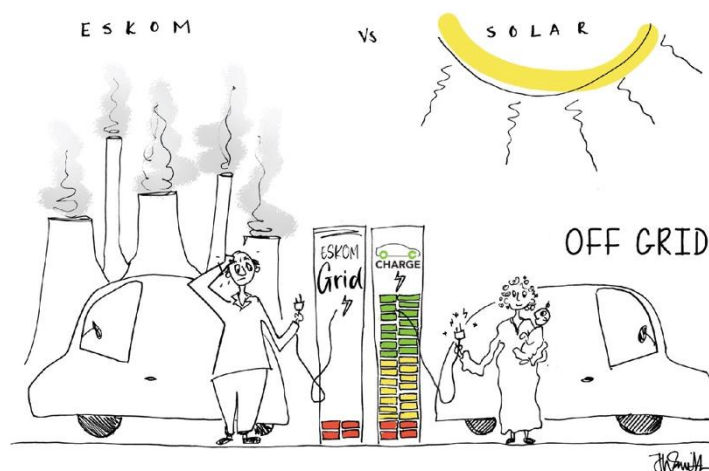
## ENVIRONMENTAL IMPACT

Zero Carbon Charge is projected to produce **17 million + carbon credits** over the next twenty years.

Each EV recharged with Zero Carbon Charge green chargers will save on average 5.8 tons of CO<sub>2</sub>e per year.

We project that by 2032 there will be 1,4 million EVs on SA roads.

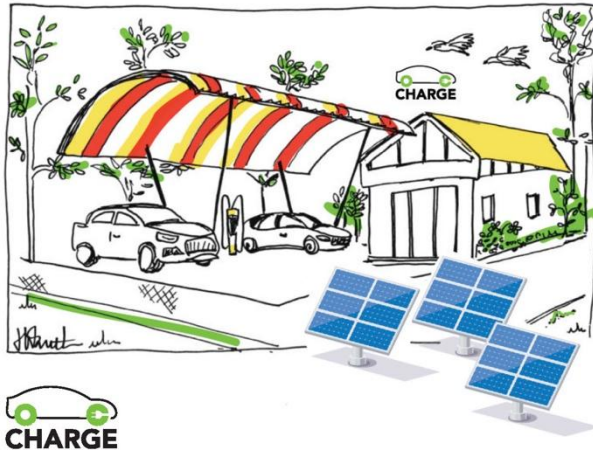
That would directly save 9,1 million tons of CO<sub>2</sub>e per year.





## The CHARGE Network

120 OFF-GRID CHARGING STATIONS FOR  
PASSENGER & COMMERCIAL VEHICLES UP TO 8 TONNES

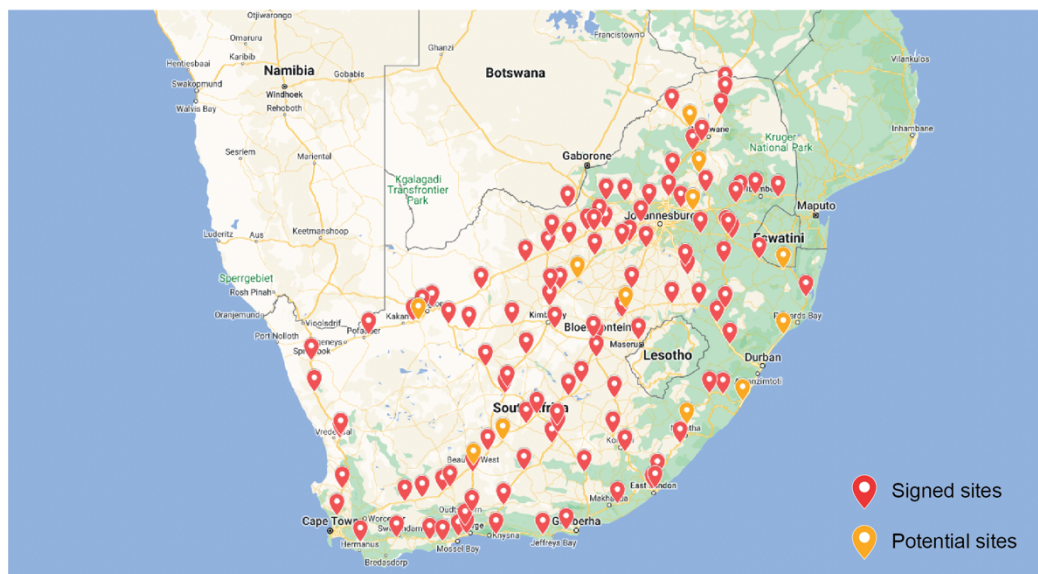


## AT EACH CHARGING LOCATION

- 1 EV Charging Station
- 2 On-site power generation system – 100% renewable energy
- 3 Farm Stall  
Parking Area  
Restroom facilities  
Botanical garden

## MAP: 120+ SITES IN DEVELOPMENT

OFF-GRID CHARGING STATIONS FOR PASSENGER  
& COMMERCIAL VEHICLES UP TO 8 TONNES





## **IMPACT ON SOUTH AFRICA**

### **ENERGY LOCALISATION**

Reduced reliance on foreign energy sources.

### **SOCIO-ECONOMIC IMPACT**

Preservation of foreign exchange through decreased crude oil imports.

Creation of permanent jobs.

Boost to the local economy.

Significant contribution to convenience spending during vehicle charging.

Improved energy efficiency and reliability.

### **ENVIRONMENTAL IMPACT**

Minimizing carbon footprint.

Contribution to climate mitigation efforts.

Improvement in air quality and respiratory health for all South Africans.

### **HUMAN RESOURCE DEVELOPMENT**

Investment in community development and opportunities for underprivileged students.



## **ALLIANCES FOR CLIMATE ACTION SOUTH AFRICA**

### **ZERO CARBON CHARGE**

has joined the Alliance for Climate Action South Africa.

We are committed to playing our part  
in achieving a zero-carbon future by 2050.







## GET INVOLVED



PARTNER  
WITH US



INVEST



LEARN  
MORE



NEWSLETTER  
SIGN UP



### ZERO CARBON CHARGE (PTY) LTD

Reg Nr: 2022/232376/07  
Enterprise Type: Private Company  
Location: South Africa  
Date founded: Nov 2021

#### CONTACT

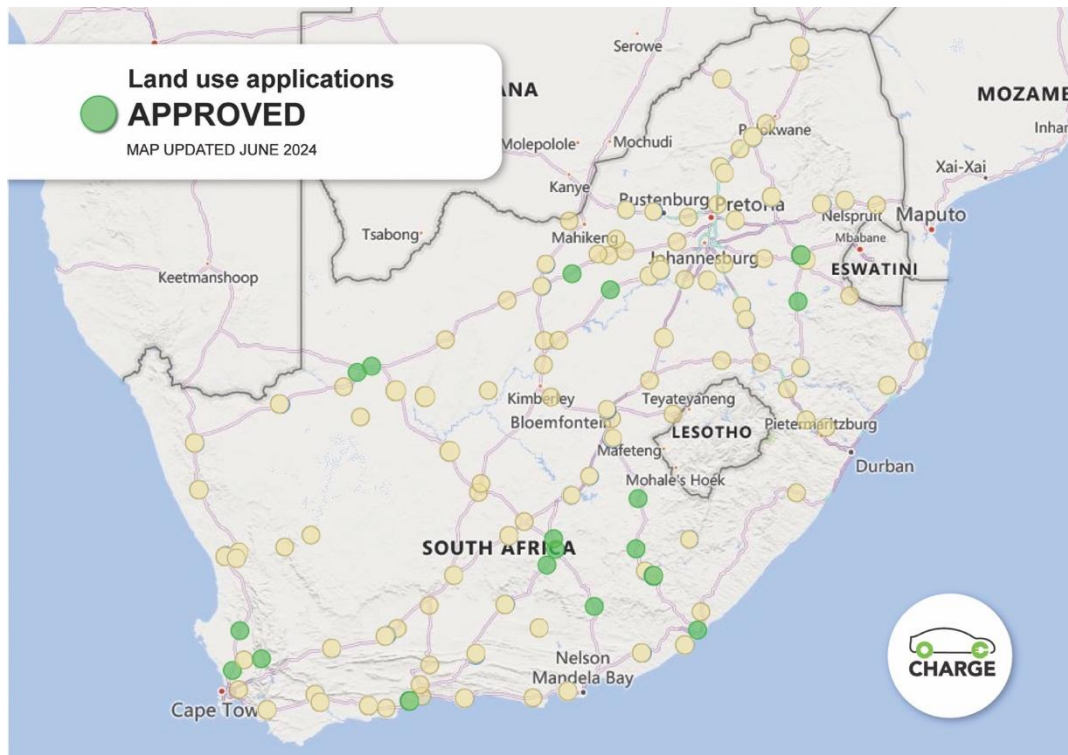
info@charge.co.za  
MOBILE: +27 71 607 6122  
[www.charge.co.za](http://www.charge.co.za)





## MAP: Progress in various municipalities and provinces

MAP: Zero Carbon Charge Land use Applications already approved in **5 provinces**







## **ANNEXURE B:**

### **Municipal Application Form**





**BEAUFORT-WES(T)  
MUNISIPALITEIT // MUNICIPALITY**

**LAND USE PLANNING APPLICATION FORM**

(Section 15 of the By-law on Municipal Land Use Planning for Beaufort West Municipality)

**KINDLY NOTE:** Please complete this form using BLOCK capitals and ticking the appropriate boxes.

**PART A: APPLICANT DETAILS**

First name(s)	<b>Roeben</b>				
Surname	<b>Pienaar</b>				
South African Council for Planners (SACPLAN) registration number (if applicable)	<b>A/3045/2021</b>				
Company name (if applicable)	<b>CK RUMBOLL &amp; PARTNERS</b>				
Postal Address	<b>P.O. BOX 211</b>				
	<b>MALMESBURY</b>	Postal Code	<b>7299</b>		
Email	<a href="mailto:planning9@rumboll.co.za">planning9@rumboll.co.za</a>				
Tel	<b>022 482 1845</b>	Fax		Cell	<b>071 889 6051</b>

**PART B: REGISTERED OWNER(S) DETAILS** (If different from applicant)

Registered owner(s)	<b>QUICKSTEP 479 PTY LTD</b>				
Physical address	<b>Boeteka Farm</b>				
	<b>Beaufort West</b>	Postal code	<b>6390</b>		
E-mail					
Tel		Fax		Cell	

**PART C: PROPERTY DETAILS** (in accordance with title deed)

Property description [Number(s) of Erf/Erven/Portion(	<b>FARM NO 432, BEAUFORT WEST</b>
--	-----------------------------------



s) or Farm(s), allotment area.]											
Physical Address	<b>BOETEKA FARM STALL, N12, BEAUFORT WEST</b>										
GPS Coordinates	<b>32°30'09.6"S 22°33'43.8"E</b>				Town/City		<b>BEAUFORT WEST</b>				
Current Zoning	<b>AGRICULTURAL ZONE I</b>		Extent		<b>2577.4276 ha</b>		Are there existing buildings?		<b>Y</b>	N	
Applicable Zoning Scheme	<b>BEAUFORT WEST MUNICIPAL STANDARD ZONING SCHEME BY-LAW (2020)</b>										
Current Land Use	<b>Agriculture &amp; farmstall</b>										
Title Deed number and date	T		<b>49756/2018</b>								
Any restrictive conditions?	Y	<b>N</b>	If Yes, list condition(s)								
Are the restrictive conditions in favour of a third party(ies)?	Y	<b>N</b>	If Yes, list the party(ies)								
Is the property encumbered by a bond?	<b>Y</b>	N	If Yes, list bondholder(s)		<b>First National Bank</b>						
Any existing unauthorized buildings and/or land use on the subject property(ies)?					Y	<b>N</b>	If yes, is this application to legalize the building / land use?			Y	<b>N</b>
Are there any pending court case(s) / order(s) relating to the subject property(ies)?					Y	<b>N</b>	Are there any land claim(s) registered on the subject property(ies)?			Y	<b>N</b>

**PART D: PRE-APPLICATION CONSULTATION**

Has there been any pre-application consultation?		Y	<b>N</b>	If Yes, complete the information below and attach the minutes of the pre-application consultation.							
Official's name		Reference Number				Date of consultation					

**PART E: LAND USE PLANNING APPLICATIONS IN TERMS OF SECTION 15 OF THE BY-LAW ON MUNICIPAL LAND USE PLANNING FOR BEAUFORT WEST MUNICIPALITY AND APPLICATION FEES PAYABLE**

Tick	Section	Type of application	Cost
√	<b>2(a)</b>	a rezoning of land;	R
√	<b>2(b)</b>	a permanent departure from the development parameters of the zoning scheme;	R
√	<b>2(c)</b>	a departure granted on a temporary basis to utilise land for a purpose not permitted in terms of the primary rights of the zoning applicable to the land;	R
√	<b>2(d)</b>	a subdivision of land that is not exempted in terms of section 24, including the registration of a servitude or lease agreement;	R
√	<b>2(e)</b>	a consolidation of land that is not exempted in terms of section 24;	R
√	<b>2(f)</b>	a removal, suspension or amendment of restrictive conditions in respect of a land unit;	R



✓	2(g)	a permission required in terms of the zoning scheme;	R
✓	2(h)	an amendment, deletion or imposition of conditions in respect of an existing approval;	R
✓	2(i)	an extension of the validity period of an approval;	R
✓	2(j)	an approval of an overlay zone as contemplated in the zoning scheme;	R
✓	2(k)	an amendment or cancellation of an approved subdivision plan or part thereof, including a general plan or diagram;	R
✓	2(l)	a permission required in terms of a condition of approval;	R
✓	2(m)	a determination of a zoning;	R
✓	2(n)	a closure of a public place or part thereof;	R
✓	2(o)	<b>a consent use contemplated in the zoning scheme;</b>	<b>R</b>
✓	2(p)	an occasional use of land;	R
✓	2(q)	to disestablish a home owner's association;	R
✓	2(r)	to rectify a failure by a home owner's association to meet its obligations in respect of the control over or maintenance of services;	R
✓	2(s)	a permission required for the reconstruction of an existing building that constitutes a non-conforming use that is destroyed or damaged to the extent that it is necessary to demolish a substantial part of the building.	R

**TOTAL A:** **R**

**PRESCRIBED NOTICE AND FEES\*\*** (for completion and use by official)

Tick	Notification of application in media	Type of application	Cost
✓	<b>SERVING OF NOTICES PUBLICATION OF NOTICES</b>	Delivering by hand; registered post; data messages	R
✓		Local Newspaper(s); Provincial Gazette; site notice; Municipality's website	
✓	<b>ADDITIONAL PUBLICATION OF NOTICES</b>	Site notice, public meeting, local radio station, Municipality's website, letters of consent or objection	R
✓	<b>NOTICE OF DECISION</b>	Provincial Gazette	R
✓	<b>INTEGRATED PROCEDURES</b>	T.B.C	R

**TOTAL B:** **R**

**TOTAL APPLICATION FEES\***  
**(TOTAL A + B)** **R**

\* Application fees that are paid to the Municipality are non-refundable and proof of payment of the application fees must accompany an application.

\*\* The applicant is liable for the cost of publishing and serving notice of an application.

**BANKING DETAILS**

Name:

Bank:

Branch no.:

Account no.:

**Payment reference:**

(if applicable) .....

**PART F: DETAILS OF PROPOSAL**

**Brief description of proposed development / intent of application:**



A **Consent Use** in accordance with Section 15 (2) (o) of the Beaufort West Municipal Land Use Planning By-Law in order to apply for a Tourist facility allowing the accommodation of the current use of a restaurant on The Property, accompanied by an EV charging station as an ancillary use to the Tourist Facility.

A **Consent use** in accordance with Section 15 (2) (o) of the Beaufort West Municipal Land Use Planning By-Law in order to permit a Renewable Energy Structure on a portion ( $\pm 8250\text{m}^2$ ) of The Property, currently zoned Agricultural Zone I.

**PART G: ATTACHMENTS AND SUPPORTING INFORMATION AND DOCUMENTATION FOR LAND USE PLANNING APPLICATION [section 15(2)(a) to (s) of the By-Law on Municipal Land Use Planning for Beaufort West Municipality]**

**Complete the following checklist and attach all the information and documentation relevant to the proposal. Failure to submit all information and documentation required will result in the application being deemed incomplete. It will not be considered complete until all required information and documentation have been submitted.**

Information and documentation required in terms of section 38(1) of said legislation

<b>Y</b>	N	Power of attorney / Owner's consent if applicant is not owner	<b>Y</b>	N	Bondholder's consent (if applicable)
<b>Y</b>	N	Resolution or other proof that applicant is authorised to act on behalf of a juristic person	<b>Y</b>	N	Proof of registered ownership or any other relevant right held in the land concerned
<b>Y</b>	N	Written motivation	<b>Y</b>	N	S.G. diagram / General plan extract
<b>Y</b>	N	Locality plan	<b>Y</b>	N	Site development plan or conceptual layout plan
Y	<b>N</b>	Proposed subdivision plan	Y	<b>N</b>	Proof of agreement or permission for required servitude
Y	N	Proof of payment of application fees	<b>Y</b>	N	Full copy of the title deed
Y	<b>N</b>	Conveyancer's certificate	Y	N	Minutes of pre-application consultation meeting (if applicable)

Supporting information and documentation:

Y	N	<b>N/A</b>	Consolidation plan	<b>Y</b>	N	N/A	Land use plan / Zoning plan
Y	N	<b>N/A</b>	Street name and numbering plan	Y	<b>N</b>	N/A	1 : 50 / 1:100 Flood line determination (plan / report)
Y	<b>N</b>	N/A	Landscaping / Tree plan	Y	N	<b>N/A</b>	Home Owners' Association consent
Y	<b>N</b>	N/A	Abutting owner's consent	Y	<b>N</b>	N/A	Services Report or indication of all municipal services / registered servitudes
Y	<b>N</b>	N/A	Copy of Environmental Impact Assessment (EIA) / Heritage Impact Assessment (HIA) / Traffic Impact Assessment (TIA) / Traffic Impact Statement (TIS) /				



			Major Hazard Impact Assessment (MHIA) / Environmental Authorisation (EA) / Record of Decision (ROD) (strikethrough irrelevant)				
Y	N	N/A	Copy of original approval and conditions of approval	Y	N	N/A	Proof of failure of Home owner's association
Y	N	N/A	Proof of lawful use right	Y	N	N/A	Any additional documents or information required as listed in the pre-application consultation form / minutes
Y	N	N/A	Required number of documentation copies	Y	N	N/A	Other (specify)

#### PART H: AUTHORISATION(S) IN TERMS OF OTHER LEGISLATION

Y	N/A	National Heritage Resources Act, 1999 (Act 25 of 1999)		Y	N/A	Specific Environmental Management Act(s) (SEMA) (e.g. Environmental Conservation Act, 1989 (Act 73 of 1989), National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004), National Environmental Integrated Coastal Management Act, 2008 (Act 24 of 2008), National Environmental Management: Waste Act, 2008 (Act 59 of 2008), National Water Act, 1998 (Act 36 of 1998) (strikethrough irrelevant)
Y	N/A	National Environmental Management Act, 1998 (Act 107 of 1998)				
Y	N/A	Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970)				
Y	N/A	Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013)(SPLUMA)				
Y	N/A	Occupational Health and Safety Act, 1993 (Act 85 of 1993): Major Hazard Installations Regulations				
Y	N/A	Land Use Planning Act, 2014 (Act 3 of 2014) (LUPA)		Y	N/A	Other (specify)
Y	N	If required, has application for EIA / HIA / TIA / TIS / MHIA approval been made? If yes, attach documents / plans / proof of submission etc.				
Y	N	If required, do you want to follow an integrated application procedure in terms of section 44(1) of the By-Law on Municipal Land Use Planning for Beaufort West Municipality? If yes, please attach motivation.				

#### SECTION I: DECLARATION

I hereby wish to confirm the following :

1. That the information contained in this application form and accompanying documentation is complete and correct.
2. I'm aware that it is an offense in terms of section 86(1)(e) to supply particulars, information or answers knowing the particulars, information or answers to be false, incorrect or misleading or not believing them to be correct.
3. I am properly authorized to make this application on behalf of the owner and (where applicable) that a copy of the relevant power of attorney or consent are attached hereto.
4. Where an agent is appointed to submit this application on the owner's behalf, it is accepted that correspondence from and notifications by the Municipality in terms of the by-law will be sent only to the agent and that the owner will regularly consult with the agent in this regard.



5. That this submission includes all necessary land use planning applications required to enable the development proposed herein.
6. I confirm that the relevant title deed(s) have been read and that there are no restrictive title deed restrictions, which impact on this application, or alternatively an application for removal/suspension or amendment forms part of this submission.
7. I am aware that development charges to the Municipality in respect of the provision and installation of external engineering services are payable by the applicant as a result of the proposed development.

Applicant's signature:



Date:

**19/02/2025**

Full name:

**Roeben Pienaar (CK RUMBOLL & PARTNERS)**

Professional capacity:

**PROFESSIONAL PLANNER**

SACPLAN registration number:

**A/3045/2021****FOR OFFICE USE ONLY**

Date received:

\_\_\_\_\_

Received by:

\_\_\_\_\_

Municipal Stamp

**ANNEXURES**

The following Annexures are attached for your information, only if applicable:

**Please do not submit these Annexures with the application form.**

Annexure A: Minimum requirements matrix

Annexure B: Land use planning application submission and protocol

Annexure C: Land use planning application workflow









## **ANNEXURE C:**

### **Property Details**



# Deeds Office Property

BEAUFORT WEST RD, BEAUFORT WEST RD, 432, 0, CAPE TOWN

Lexis® WinDeed



This report is compiled exclusively from the very latest data directly supplied to WinDeed by the Deeds Office.

Any personal information obtained from this search will only be used as per the Terms and Conditions agreed to and in accordance with applicable data protection laws including the Protection of Personal Information Act, 2013 (POPI), and shall not be used for marketing purposes.

**\*\* ASTERISKS INDICATE THE INFORMATION IS ENRICHED FROM THE WINDEED DATABASE.**

## SEARCH CRITERIA

Search Date	2024/11/19 12:15	Farm Number	432
Reference	-	Registration Division	BEAUFORT WEST RD
Report Print Date	2024/11/19 12:16	Portion Number	-
Farm Name	-	Search Source	Deeds Office
Deeds Office	Cape Town		

## PROPERTY INFORMATION

Property Type	FARM	Diagram Deed Number	T54166/2008
Farm Name	BEAUFORT WEST RD	Local Authority	KOUP DC
Farm Number	432	Province	WESTERN CAPE
Registration Division	BEAUFORT WEST RD	Extent	2577.4276H
Portion Number	0	LPI Code	C00900000000043200000
Previous Description	-	Co-ordinates (Lat/Long)**	-32.494782 / 22.543755
Suburb / Town**	13KM NORTH OF KWA-MANDLENKOSI		

## OWNER INFORMATION (1)

QUICKSTEP 479 PTY LTD		Owner 1 of 1	
Company Type**	COMPANY	Document	T49756/2018
Registration Number	201749754207	Microfilm / Scanned Date	-
Name	QUICKSTEP 479 PTY LTD	Purchase Price (R)	20 300 000
Multiple Owners**	NO	Purchase Date	2018/03/09
Multiple Properties**	NO	Registration Date	2018/10/29
Share (%)	-		

### DISCLAIMER

This report contains information provided to LNRM by content providers and LNRM cannot control the accuracy of the data nor the timely accessibility. LNRM will not be held liable for any claims based on reliance of the search information provided. This report is subject to the terms and conditions of LexisNexis Risk Management Agreement. LexisNexis Risk Management (Pty) Ltd is a registered credit bureau (NCRCB26).



**ENDORSEMENTS (3)**

#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	B26641/2024	FIRSTRAND BANK LTD	13 600 000	-
2	CONSOLIDATE FROM	REG DIV BEAUFORT WEST RD ,NAME LOMBARDS KRAAL ,NO 330 ,PRTN 13	-	-
3	CONSOLIDATE FROM	REG DIV BEAUFORT WEST RD ,NAME BOETEKKA ,NO 319 ,PRTN 4	-	-

**HISTORIC DOCUMENTS (2)**

#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	B23800/2018	-	-	-
2	T54166/2008	VIVIER TRUST	CCT	-

**DISCLAIMER**

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Phum)

Pack 5 of 29 Oct 2018

E7134 NO PROCESSING ALLOWED ON INACTIVE PERSONS.  
DRD14500 PRODUCTION DEEDS REGISTRATION SYSTEM MODE: PC DRD145\*0  
OCT 30, 2018 MAINTAIN TRANSFERS - DOTS 09:23 AM  
\*OFFICE: 08 CAPE TOWN USER: DRS08262

TITLE NUMBER..... T49756/2018  
\*ACTION..... M (A,M,D) SALE OF EXECUTION: N (Y/N)  
\*BUYER..... QUICKSTEP 479 PTY LTD  
ID NUMBER..... 280306586107 SHARE... PARTNER... N (Y/N)  
REGISTRATION DATE: 1029 2018 (MMDD YYYY) \*MULTIPLE OWNERS/PROP... (A/P/O)  
\*PROPERTY TYPE..... F FARM SHARE TOTAL.....  
PORTION..... TO PORTION: OF PORTION:   
FARM..... 319 TO FARM...  
\*REGISTRATION DIV.: BEAUFORT WEST RD  
EXTENT..... 2605.2134 \*MEASUREMENT... H  
EXTENDING TITLE... T4872/1944 SG PLAN NUMBER:   
LOCAL AUTHORITY...

\* DIRECT COMMAND:   
ENTR=CONFIRM, F1=HELP, F2=RETRN, F3=QUIT, F5=FLIP, F6=PREF, F9=LINK/UNLIN, F10=LEFT  
F12=MAIN



## A. VIR AKTEBESORGER SE GEBRUIK / FOR CONVEYANCER'S USE:

(a) Gelyktydiges met ander registrasiekantore / deeltitels: Simult with other registries / sectional titles:

Kode / Code	Firma / Firm	Eiendom / Property	Kantoor / Office
1			
2			
3			
4			

(b) Kliënt afskrifte van aktes permanent in Aktekantoor gelasseer:  
Client copies of deed filed permanently in Deeds Office:

Aard en nommer van akte Nature and number of deed	Kode Code	Parawe van ondersoekers Initials of examiners
	T.R.	

(c) Notas / notes:

## B. VIR AKTEKANTOOR GEBRUIK / FOR DEEDS OFFICE USE:

Opmerkings Remarks	Paraaf Initials
(1) Dorp goedgekeur (geproklameer) Township approved (proclaimed)	
(2) Begiftigingserwe Endowment erven	
(3) Begiftiging Endowment	
(4) Voorwaardes Conditions	
(5) Mikro Micro	
(6) Algemene plan General plan	
(7) Titel akte Title deed	
(8) Verbanne teen dorpsitel Bonds against township title	
(9) Datum nagesien Date checked	

Kantoor instruksies / Office instructions:

Seksie / Section:

SYMINGTON &  
DE KOK  
KAAPSTAD

1082

TEL: 913 3137

SYMINGTON DE KOK  
BOX 1082  
TEL. 021-913 3137  
CEL. 082 4144 347  
janine@symok.co.za

(Kort beskrywing van eiendom (slegs para. 1 in Akte) / (Brief description of property (only para. 1 in Deed))

P315 BWS

## UITVOERING - EXECUTION

## A. VIR AKTEKANTOOR GEBRUIK / FOR DEEDS OFFICE USE:

(a) Datum van indiening / Date of lodgement:

Not on R

(b)

Uitsig / View	Ondersoekers / Examiners	Kamers Rooms	Skakeling / Linking	Verwerp / Reject	Passer / Pass
1	U.SIKHONZA	1221			
2	B. VENTER				
3	M. HANSEN 1124		S 1		

A. VIR AKTEBESORGER SE GEBRUIK /  
FOR CONVEYANCER'S USE:Aard van Akte byv.: Transport, Verband, ens.  
Nature of Deed e.g.: Transfer, Bond, etc.

T 000049756 / 2018

Verw. No/ Ref. No.:

FGU 1386

Skakeling / linking

S 1

## GELYKTYDIGE / SIMULS

Kode Code	Name van Partye / Names of Parties	Firma No. Firm No.	No. in stel/batch	Titelaktes ens. binne Titles etc. within
1	T. Venter	100	1	
2	B. Venter	100	2	T. Venter
3	B. Venter	100	3	T. Venter
4	B. Venter	100	4	T. Venter
5	B. Venter	100	5	T. Venter
6	B. Venter	100	6	T. Venter
7	B. Venter	100	7	T. Venter
8	B. Venter	100	8	T. Venter
9	B. Venter	100	9	T. Venter
10				
11				

080006839157

Registrasie versoek deur:  
Registration requested by:Datum:  
Date:



CRAWFORDS  
Donkinstraat 36  
BEAUFORT-WES  
6970  
Docex 1, BEAUFORT-WES

Opgestel deur my,

TRANSPORTBESORGER  
ANTON GEORG VORSTER

Fee enforcement		Office fee
Amount		
Purchase price/Voetkoop	R 20 300 000,00	R 2 218,00
Mortgage capital/Aankoop	R .....	4590,00
Reason for exemption	Exempt i.t.o.	
Cat.....	section.....	Act.....

Para 1, 2, 4, 5 and 6

VERBIND		MORTGAGED	
R 11 000 000,00			
000023800 / 2018		REGISTRATEUR/REGISTRAR	
29 OCT 2018			

T 000049756 / 2018

## AKTE VAN TRANSPORT

HIERMEE WORD BEKEND GEMAAK

DAT

JANINE FOUCHÉ

voor my die REGISTRATEUR VAN AKTES verskyn het te KAAPSTAD, die genoemde Komparant synde behoorlik daartoe gemagtig deur 'n Volmag aan hom/haar verleen deur

VIVIERS TRUST

Registrasienuommer IT1844/2005

gedateer 28 Mei 2018

en geteken te BEAUFORT-WES

DATA / CAPTURE
30 OCT 2018
PHUMELELA MNAMATA

DATA / VERIFY
30 OCT 2018
PENELOPE NGOGOWANA

CRAWFORDS



EN genoemde Komparant het verklaar dat die gesegde **VIVIERS TRUST** die ondergemelde eiendom op **09 MAART 2018** waarlik en wettiglik verkoop het en dat hy/sy in sy/haar voornoemde hoedanigheid hierby seeder en transporteer aan en ten gunste van:

**QUICKSTEP 479 PROPRIETARY LIMITED**  
**Registrasienommer 2017/497542/07**

hulle opvolgers in amp of regsverkrygendes in volkome en vrye eiendom:

1.

**GEDEELTE 6 (BOETEK) VAN DIE PLAAS BOETEK NR 319**  
**In die Munisipaliteit en Afdeling van BEAUFORT-WES**  
**PROVINSIE WES-KAAP**

**GROOT: 2154,5792 (TWEË DUISEND EEN HONDERD VIER EN VYFTIG**  
**KOMMA VYF SEWE NEGE TWEË) Hektaar**

OORSPRONKLIK OORGEDRA kragtens Transportakte Nr T4977/1938 met 'n kaart wat daarop betrekking het en gehou kragtens Transportakte Nr. T61762/2006.

**A. ONDERHEWIG** aan die voorwaarde waarna verwys word in Transportakte Nummer 4977/1938.

**B. ....**

**C. ONDERHEWIG VERDER** soos genoem in Grondbrief Nr 104/1949 aan die volgende voorwaarde voorgeskryf deur Artikel 9 van die Wet Nr 45 van 1937, soos vervang deur Artikel 3 van die Wet Nr 42 van 1944 en gewysig deur Artikel 4 van die Wet Nr 23 van 1948, naamlik:-

"Geen verdeling van die hiermee toegekende grond of van enige gedeelte daarvan of onverdeelde aandeel daarin, mag bewerkstellig word nie sonder die skriftelike toestemming van die Minister van Lande, verleen op aanbeveling van die landraad op die voorwaardes wat die Minister wenslik ag om op te stel; en hierdie voorwaarde word in elke daaropvolgende oordrag van die hiermee toegekende grond of enige gedeelte daarvan of onverdeelde aandeel daarin, opgeneem."

2.

**GEDEELTE 7 (GEDEELTE VAN GEDEELTE 1) VAN DIE PLAAS BOETEK NR 319**  
**In die Munisipaliteit en Afdeling van BEAUFORT-WES**  
**PROVINSIE WES-KAAP**

**GROOT: 1070,6650 (EEN DUISEND EN SEWENTIG KOMMA SES SES VYF NUL) Hektaar**

OORSPRONKLIK OORGEDRA kragtens Transportakte Nr T4072/1944 met Kaart Nr 4919/43 wat daarop betrekking het en gehou kragtens Transportakte nr T61762/2006



- A. **ONDERHEWIG** aan die voorwaardes waarna verwys word in Transportakte nr 4072/1944.

3.) **RESTANT GEDEELTE 1 VAN DIE PLAAS BOETEKA NR 319**  
In die Munisipaliteit en Afdeling van BEAUFORT-WES  
PROVINSIE WES-KAAP

**GROOT: 1383,9216 (EEN DUISEND DRIE HONDERD DRIE EN TAGTIG KOMMA NEGE TWEE EEN SES) Hektaar**

OORSPRONKLIK OORGEDRA kragtens Transportakte Nr T182/1871 gedateer 17 Februarie 1871 met 'n Kaart wat daarop betrekking het en gehou kragtens Transportakte Nr T61762/2006.

- A. **ONDERHEWIG** aan die voorwaardes waarna verwys word in Transporakte Nr T6169/1908.
- B. **GEREGTIG** op die voordeel van die volgende voorwaarde genoem in Transportakte Nr T1396/1927, naamlik:

"Dat gesegde Pieter Jacobus Muller en sy opvolgers as eienaar van bogemelde restant van Boeteka geregtig sal wees op 'n vrye suiping in die rivier op Boeteka A getranspoteer ten faveure van Stephanus Andries Muller op hierdie dag No. 1395; by die woonhuis gemerk "Homestead" op die kaart van Boeteka A. "Hulle sal ook geregtig wees op 'n vrye toegang of trek vir hulself en hul vee naar die Rivier oor Boeteka A vir hierdie doel. "Sodanig toegang of trek sal in die korste en reguitste rigtinge tussen die bakens L en h op die kaart van Boeteka A moet gebruik word."

- C. **ONDERHEWIG VERDER** aan en **GEREGTIG** op die voordeel van die volgende spesiale voorwaardes genoem in Transportakte Nommer 1396/1972 naamlik:

"Dat al die tuinwater waarop die restant Boeteka getranspoteer onder Transportakte gedateer 3de September 1908, No.6169, groot 4329 morge 466 vierkante roede ten faveure Komparants Prinsipaal geregtig mag wees in twee dele verdeel sal word naamlik, gesegde Stephanus Andries Muller, en sy opvolgers as eienaar van Boeteka A sal geregtig wees op een-helfte daarvan en gesegde Pieter Jacobus Muller en sy opvolgers as eienaar van bogemelde restant sal geregtig wees op die ander helfte. Hierdie water kom uit in die rivier op die lyn tussen gesegde Boeteka A en bogemelde restant by die Baken H op die kaart van Boeteka A."

4.) **RESTANT VAN DIE PLAAS BOETEKA NR 319**  
In die Munisipaliteit en Afdeling van BEAUFORT-WES  
PROVINSIE WES-KAAP

**GROOT: 2605;2134 (TWEDE DUISEND SES HONDERD EN VYF KOMMA TWEE EEN DRIE VIER) Hektaar**

OORSPRONKLIK OORGEDRA kragtens 'n Grondbrief gedateer 1 November 1838 (Beaufort Wes Erfpagte Boekdeel 3 Nr 4) met 'n Kaart wat daarop betrekking het en gehou kragtens Transportakte Nr T61762/2006.

- A. **ONDERHEWIG** aan die voorwaardes waarna verwys word in Transporakte Nr T4977/1938.

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B. ....

- C. **ONDERHEWIG VERDER** soos genoem in Grondbrief Nr. 104/1949 aan die voorwaarde voorgeskryf deur Artikel 9 van Wet Nr 45 van 1937, soos vervang deur Artikel 3 van Wet Nr 42 van 1944 en gewysig deur Artikel 4 van Wet Nr 23 van 1948, naamlik:

"Geen Verdeling van die hiermee toegekende grond of van enige gedeelte daarvan of onverdeelte aandeel daarin, mag bewerkstellig word nie sonder die skriftelike toestemming van die Minister van Lande, verleen op aanbeveling van die landraad op die voorwaardes wat die Minister wenslik ag om te stel; en hierdie voorwaarde word in elke daaropvolgende oordrag van die hiermee toegekende grond of enige gedeelte daarvan of onverdeelte aandeel daarin, opgeneem."

✓ 5.

**GEDEELTE 5 ('N GEDEELTE VAN GEDEELTE 2) VAN DIE PLAAS LOMBARDS KRAAL NR 330**  
**In die Munisipaliteit en Afdeling van BEAUFORT-WES**  
**PROVINSIE WES-KAAP**

**GROOT: 956,3172 (NEGE HONDERD SES EN VYFTIG KOMMA DRIE EEN SEWE TWEE) Hektaar**

**AANVANKLIK** oorgedra kragtens Verdelingstransport Nr. T20974/1953 met Kaart Nr. 5022/53 wat daarop betrekking het en gehou kragtens Transportakte Nr. T43776/2008

- A. **ONDERHEWIG** aan die voorwaardes waarna verwys word in Transportakte Nr T2928/1911.
- B. **ONDERHEWIG VERDER** aan die terme van 'n endossement gedateer 15 Augustus 1968 op gesegde Verdelingstransport Nr. T20974/1953, wat as volg lees:-

**"ENDOSSEMENT KRAGTENS ARTIKEL 31(6) VAN WET 47 VAN 1937 (SOOS GEWYSIG)**

'n Gedeelte van die eiendom hierin vermeld groot 0.311 mge is onteien deur die Administrateur van die Kaap kragtens Art 130 Ord 15/52 saamgelees met Art 2(3) Ord 3/66. Vide onteieningskennisgewing Nr. RN17/1004d.d. 107065 geliasseer as onteienings caveat 1256/65 planne No. 12 geliasseer hiermee."

- C. **ONDERHEWIG VERDER** aan die terme van 'n endossement gedateer 11 Junie 1986 op gesegde Verdelingstransport Nr. T20974/1953, wat as volg lees:-

**"Kragtens Notariële Akte van Serwituut Nr. K502/86 S gedateer 24-10-1985 is**

- 1) Die serwituut waarna verwys word in endossement gedateer 30/5/77 t.g.v. Evkom (Nr K469/77S) nou gekanselleer.
- 2) Die binnegemelde eiendom is onderhewig aan die regte en onderhewig aan die reg ten gunste van Evkom om elektrisiteit daaroor te lei, tesame met bykomende regte en onderhewig aan voorwaardes, soos vollediger sal blyk uit die gesegde Akte, afskrif waarvan hieraan geheg is."



- D. **ONDERHEWIG VERDER** aan die terme van 'n endossement gedateer 20 Junie 1990 op gesegde Verdelingstransport Nr. T20974/1953, wat as volg lees:-

"Kragtens Notariële Akte Nr. K502/90 gedateer 6 Junie 1990 en hede geregistreer is die roete van kraglynserwituut waarna verwys word in endossement ged 11/6/86 nou bepaal.

Soos meer volledig sal blyk uit gesegde Not. Akte."

6. **DIE PLAAS NR 432**  
In die Munisipaliteit en Afdeling van BEAUFORT-WES  
PROVINSIE WES-KAAP

**GROOT: 2577,4276 (TWEË DUISEND VYF HONDERD SEWE EN SEWENTIG KOMMA VIER TWEË SEWE SES) Hektaar**

**AANVANKLIK GEREГИSTREER** en steeds gehou kragtens sertifikaat van verenigde Titel Nr. 54166/2008 met Kaart LG Nr. 1610/2008 wat daarop betrekking het.

- I. **WAT BETREF** die figuur A B C D E F G H J K a R op Kaart LG Nr. 1610/2008:

A. **WAT BETREF** die figuur q e a soos aangedui op Kaart LG Nr. 1608/2008:

1. **ONDERHEWIG** aan die voorwaardes waarna verwys word in Transportakte Nr. T9077/1907.
2. **ONDERHEWIG VERDER** aan die serwituutaantekening gedateer 25 Maart 1963 aangeteken op Transportakte Nr. T3073/1957, welke aangetekening soos volg lees:-

"Endossement kragtens Artikel 31(6) van Wet Nr. 47 van 1937 (soos gewysig)

Gedeeltes van die eiendom hierin vermeld, Paras, 2, 3 en 4 soos hieronder uiteengeesit onteien deur die Provinsiale Administrasie van die Kaap kragtens Art. 130 van Ord. 15/1952 saamgelees met Artikels 2 en 3 Ord. 3/1936, vide onteieneienings caveat 83/65, planne in tweevoud gelisasseer hiermee.

Van para 4 plus-minus 0,9537 hektaar."

- B. **WAT BETREF** die figuur R A B C D E F G H J K L a op Kaart LG Nr. 1610/2008, uitgesluit die figuur q e a op Kaart LG Nr. 1608/2008:

1. **ONDERHEWIG** aan die voorwaardes waarna verwys word in Transportakte Nr. T4453/1937.
2. **ONDERHEWIG VERDER** aan die serwituut verwysing gedateer 25 Maart 1963 aangebring op Transportakte Nr. T3073/1957, naamlik:-

"Endossement kragtens Artikel 31(6) van Wet Nr. 47 van 1937 (soos gewysig)

Gedeeltes van die eiendom hierin vermeld, Paras 2, 3 en 4 soos hieronder uiteengesit is onteien deur die Provinsiale Administrasie van die



Kaap kragtens Art. 130 van Ord. 15/1952 staan, vide onteieningskennisgewing Nr. RN 17/828 – 7-10-10-64 geliasseer as onteienings caveat 83/65, van para 2 ongeveer 14,5798 hektaar, van para 3 ongeveer 18,9175 hektaar, van para 4 ongeveer 0,9537 hektaar.”

3. **ONDERHEWIG VERDER** aan die endossement gedateer 27 Mei 1987 aangebring op Transportakte nr. T2375/1982, naamlik:-

“Kragtens Notariële Akte Nr. K963/1992S, is die binnevermelde eiendom onderhewig aan die reg ten gunste van EVKOM om eletrisiteit daaroor te lei, tesame met bykomende regte, en onderhewig aan voorwaardes, soos vollediger sal blyk uit die gesegde akte, afskrif waarvan hieraan geheg is.”

(soos nou aangedui deur die lyne b c d e n e f g op Kaart LG Nr. 1610/2008)

- II. WAT BETREF die figuur Q R a L M N P op Kaart LG Nr. 1610/2008;

ONDERHEWIG aan die voorwaardes waarna verwys word in Transportakte Nr. T4691/1921.

- III. WAT betref die geheel van die eiendom:

ONDERHEWIG aan die volgende voorwaardes opgelê ingevolge Artikel 11 van die Wet op Adverteer langs en Toe bou van Paaie (Wet 21 van 1940), soos uiteengesit in Transportakte Nr. T54165/08.

1. geen addisionele toegange tot Grootpad 33 Seksie 5 geskep word sonder die goedkeuring van hierdie kantoor nie.
2. die bepalings van Artikel 17(1)(a) en (b) van Ordonnansie 19 van 1976 van toepassing bly op alle gedeeltes.
3. geen advertensie tekens vertoon word waar dit sigbaar is vanaf Grootpad 33 Seksie 5 nie.



Kaap kragtens Art. 130 van Ord. 15/1952 staan, vide onteieningskennisgewing Nr. RN 17/828 – 7-10-10-64 geliasseer as onteienings caveat 83/65, van para 2 ongeveer 14,5798 hektaar, van para 3 ongeveer 18,9175 hektaar, van para 4 ongeveer 0,9537 hektaar.”

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“Kragtens Notariële Akte Nr. K963/1992S, is die binnevermelde eiendom onderhewig aan die reg ten gunste van EVKOM om elektrisiteit daaroor te lei, tesame met bykomende regte, en onderhewig aan voorwaardes, soos vollediger sal blyk uit die gesegde akte, afskrif waarvan hieraan geheg is.”

(soos nou aangedui deur die lyne b c d e n e f g op Kaart LG Nr. 1610/2008)

- II. WAT BETREF die figuur Q R a L M N P op Kaart LG Nr. 1610/2008;

ONDERHEWIG aan die voorwaardes waarna verwys word in Transportakte Nr. T4691/1921.

- III. WAT betref die geheel van die eiendom:

ONDERHEWIG aan die volgende voorwaardes opgelê ingevolge Artikel 11 van die Wet op Adverteer langs en Toebov van Paaie (Wet 21 van 1940), soos uiteengesit in Transportakte Nr. T54165/08.

1. geen addisionele toegange tot Grootpad 33 Seksie 5 geskep word sonder die goedkeuring van hierdie kantoor nie.
2. die bepalings van Artikel 17(1)(a) en (b) van Ordonnansie 19 van 1976 van toepassing bly op alle gedeeltes.
3. geen advertensie tekens vertoon word waar dit sigbaar is vanaf Grootpad 33 Seksie 5 nie.



WESHALWE die Komparant afstand doen van al die regte, titel en belang wat die gesegde **VIVIERS TRUST** voorheen op genoemde eiendom gehad het en gevolglik ook erken dat hy geheel en al van die besit daarvan onthef en nie meer daartoe geregtig is nie, en dat, kragtens hierdie akte, bogenoemde **QUICKSTEP 479 PROPRIETARY LIMITED**, hulle opvolgers in amp of regsverkrygendes tans en voortaan daartoe geregtig is, ooreenkomstig plaaslike gebruik, behoudens die regte van die Staat en erken hy ten slotte dat die koopprys van die eiendom wat hiermee getranspoteer word die bedrag van **R20 300 000.00 (TWINTIG MILJOEN DRIE HONDERD DUISEND RAND)** is.

TEN BEWYSE WAARVAN EK, die genoemde Registrateur van Aktes, tesame met die Komparant hierdie Akte onderteken en dit met die Ampseël bekragtig het.

ALDUS GEDOEN EN VERLY op die kantoor van die REGISTRATEUR VAN AKTES te **KAAPSTAD** op

**29 OCT 2018**

In my teenwoordigheid

q.q. Handtekening van komparant

Registrateur van Aktes



CRAWFORDS  
Donkinstraat 36  
BEAUFORT-WES  
6970  
Docex 1, BEAUFORT-WES

Opgestel deur my,  
  
TRANSPORTBESORGER  
ANTON GEORG VORSTER

## PROKURASIE OM TRANSPORT TE GEE

Ek, die ondergetekende,

**VIVIERS TRUST**  
Registrasienommer IT1844/2005

Hierin verteenwoordig deur JAN ABRAHAM VIVIERS in sy hoedanigheid as Trustee van die VIVIERS TRUST Registrasienommer IT1844/2005 en behoorlik daartoe gemagtig kragtens resoluë van die Trustees en behoorlik daartoe gemagtig kragtens Magtigingsbrief uitgereik deur die Meester van die Hooggeregshof te Kaapstad op 30 Augustus 2007.

nomineer en stel hiermee:

**JANINE FOUCHE**

aan, met mag van substitusie, om ons wettige gevolmagtigde en verteenwoordiger te wees, om vir en namens ons voor die Registrateur van Aktes te KAAPSTAD, te verskyn en daar namens ons aan:

**QUICKSTEP 479 PROPRIETARY LIMITED**  
Registrasienommer 2017/497542/07

transport te gee van:

1. GEDEELTE 6 (BOETEK) VAN DIE PLAAS BOETEK) NR 319  
In die Munisipaliteit en Afdeling van BEAUFORT-WES  
PROVINSIE WES-KAAP

GROOT: 2154,5792 (TWEË DUISEND EËN HONDERD VIER EN VYFTIG  
KOMMA VYF SEWE NEGE TWEË) Hektaar

GEHOÛ kragtens Transportakte ten gunste van die Verkoper Nr. T61762/2006

CRAWFORDS



2. GEDEELTE 7(GEDEELTE VAN GEDEELTE 1) VAN DIE PLAAS BOETEKA  
NR 319  
In die Munisipaliteit en Afdeling van BEAUFORT-WES  
PROVINSIE WES-KAAP

GROOT: 1070,6650 (EEN DUISEND EN SEWENTIG KOMMA SES SES VYF  
NUL) Hektaar

GEHOU kragtens Transportakte ten gunste van die **Verkoper Nr. T61762/2006**

3. RESTANT GEDEELTE 1 VAN DIE PLAAS BOETEKA NR 319  
In die Munisipaliteit en Afdeling van BEAUFORT-WES  
PROVINSIE WES-KAAP

GROOT: 1383,9216 (EEN DUISEND DRIE HONDERD DRIE EN TAGTIG  
KOMMA NEGE TWEE EEN SES) Hektaar

GEHOU kragtens Transportakte ten gunste van die **Verkoper Nr. T61762/2006**

4. RESTANT VAN DIE PLAAS BOETEKA NR 319  
In die Munisipaliteit en Afdeling van BEAUFORT-WES  
PROVINSIE WES-KAAP

GROOT: 2605,2134 (TWEE DUISEND SES HONDERD EN VYF KOMMA TWEE  
EEN DRIE VIER) Hektaar

GEHOU kragtens Transportakte ten gunste van die **Verkoper Nr. T61762/2006** ✓

5. GEDEELTE 5 ('N GEDEELTE VAN GEDEELTE 2) VAN DIE PLAAS LOMBARDS  
KRAAL NR 330  
In die Munisipaliteit en Afdeling van BEAUFORT-WES  
PROVINSIE WES-KAAP

GROOT: 956,3172 (NEGE HONDERD SES EN VYFTIG KOMMA DRIE EEN  
SEWE TWEE) Hektaar

GEHOU kragtens Transportakte ten gunste van die **Verkoper Nr. T43776/2008** ✓

6. DIE PLAAS NR 432  
In die Munisipaliteit en Afdeling van BEAUFORT-WES  
PROVINSIE WES-KAAP

GROOT: 2577,4276 (TWEE DUISEND VYF HONDERD SEWE EN SEWENTIG  
KOMMA VIER TWEE SEWE SES) Hektaar

*Sertifikaat van Verenigde Titel*  
GEHOU kragtens Transportakte ten gunste van die **Verkoper Nr. T054166/2008** ✓



en deur ons kragtens **Privaat Ooreenkoms** aan hulle op **09 MAART 2018**, verkoop vir die bedrag van

**R20 300 000.00 (TWINTIG MILJOEN DRIE HONDERD DUISEND RAND);**


en om in die algemeen alles te doen wat ook al nodig mag wees ten einde aan die voormelde doeleindes uitvoering te gee, net so volledig en doeltreffend as wat ons dit self kon doen as ons persoonlik teenwoordig was en handelend daarin opgetree het; en ons bekragtig, veroorloof en bevestig alles wat ons genoemde prokureur ook al wettiglik kragtens hierdie Volmag doen of laat doen, en belowe en kom ooreen om dit te bekragtig, te veroorloof en te bevestig.


Geteken te BEAUFORT-WES.

op 28 MEI 2018 in die teenwoordigheid van die ondergetekende getuies

As Getuies

1.  \_\_\_\_\_

  
\_\_\_\_\_  
J VIVIERS

2.  \_\_\_\_\_







2

**Transfer Duty** 2018-10-18  
**Declaration**

**TDREP**

**Reference Details**

Transfer Duty Reference Number: TDE02A71CB

**Details**

**Details of Seller / Transferor / Time Share Company**

Surname / Registered Name VIVIERS TRUST

Full Name

Company / CC / Trust Reg No. IT18442005

Marital Status

**Details of Purchaser / Transferee**

Full Name

Surname / Registered Name QUICKSTEP 479 PROPRIETARY LIMITED

Company / CC / Trust Reg No. 201749754207

Marital Notes if applicable

**Details of the Property**

Date of Transaction/Acquisition (CCYYMMDD)

2018-03-09

Total Fair Value

R

20300000.00

Total Consideration

R

20300000.00

**Calculation of Duty and Penalty / Interest**

Transfer Duty Payable  
on Natural Person

R

0.00

**Property Description**

- 1 GEDEELTE 8 (BOETEKA) VAN DIE PLAAS BOETEKA NR 319 IN DIE MUNISIPALITEIT EN AFDELING BEAUFORT WES PROVINSIE WES-KAAP GROOT: 2154,5792(TWEE DUISEND EEN HONDERD VIER EN VYFTIG KOMMA VYF SEWE NEGE TWEE)HEKTAAR
- 2 GEDEELTE 7 (GEDEELTE VAN GEDEELTE 1) VAN DIE PLAAS BOETEKA NR 319 IN DIE MUNISIPALITEIT EN AFDELING BEAUFORT WES PROVINSIE WES-KAAP GROOT: 1070,8850 (EEN DUISEND EN SEWENTIG KOMMA SES SES VYF NUL) HEKTAAR
- 3 RESTANT GEDEELTE 1 VAN DIE PLAAS BOETEKA NR 319 IN DIE MUNISIPALITEIT EN AFDELING BEAUFORT WES PROVINSIE WES-KAAP GROOT: 1383,9218(EEN DUISEND DRIE HONDERD DRIE EN TAGTIG KOMMA NEGE TWEE EEN SES)HEKTAAR
- 4 RESTANT VAN DIE PLAAS BOETEKA NR 319 IN DIE MUNISIPALITEIT EN AFDELING BEAUFORT WES PROVINSIE WES-KAAP GROOT: 2605,2134(TWEE DUISEND SES HONDERD EN VYF KOMMA TWEE EEN DRIE VIER)HEKTAAR
- 5 GEDEELTE 5 (N GEDEELTE VAN GEDEELTE 2) VAN DIE PLAAS LOMBARDO'S KRAAL NR 330 IN DIE MUNISIPALITEIT EN AFDELING VAN BEAUFORT WES PROVINSIE WES-KAAP GROOT:956,3172(NEGE VYF SES KOMMA DRIE EEN SEWE TWEE) HEKTAAR
- 6 DIE PLAAS NR 432 IN DIE MUNISIPALITEIT EN AFDELING BEAUFORT WES PROVINSIE WES-KAAP GROOT: 2577,4276(TWEE DUISEND VYF HONDERD SEWE EN SEWENTIG KOMMA VIER TWEE SEWE SES) HEKTAAR

**Exemption Certificate**

**Exemption Certificate Details**

Transfer Duty Reference No. TDE02A71CB

Exempt in terms of Section 9 of the  
Transfer Duty Act

OTHER

Exemptions allowed by another Act SECTION 9(15A)

**Declaration by Conveyancer / Attorney**

I certify that this is a true copy of the transfer duty declaration / receipt / exemption certificate drawn from the SARS eFiling site, which will be retained by me for 5 years from the date of registration of transfer.

XXXXXXXXXXXXXXXXXXXX  
XXXXXXXXXXXXXXXXXXXX  
XXXXXXXXXXXXXXXXXXXX

Please ensure you sign over  
the 2 lines of 'X's above

2a1c103c2fa1f7a9c302c5  
ee598f52a5da7f2b45

Date  
(CCYYMMDD)

20180727

For enquires go to  
www.sars.gov.za or call  
0800 00 SARS (7277)



2013-10-19

## **MUNISIPALITEIT VAN BEAUFORT-WES**

### **MAGTIGING VIR REGISTRASIE VAN OORDRAG VAN ONROERENDE GOED**

Hiermee word gesertifiseer dat alle bedrae verskuldig in verband met die gespesifiseerde eiendom vir munisipale dienstegelede, bobelastings op gelde, eiendomsbelasting en ander munisipale belasting, heffings en aksyns gedurende die twee jaar wat die datum van aansoek voorafgaan ten volle betaal is.

Magtiging word hierby verleen ingevolge Artikel 18 (e) van die Wet op Plaaslike Regering, Munisipale Stelsels, 2000 (Wet 32 van 2000) vir die registrasie van die eiendom hierna gedoen: die oordrag van die eiendom hierin beskryf

#### **KLARINGSERTIFIKAAT**

Magtiging word hierby verleen ingevolge Artikel 18 (e) van die Wet op Plaaslike Regering, Munisipale Stelsels, 2000 (Wet 32 van 2000) vir die registrasie van die eiendom hierna gedoen: die oordrag van die eiendom hierin beskryf

**MUNISIPALE BESTUURDER** Direkteur: Finansiële Dienste

**DATUM**

Hierdie sertifikaat verstryk (2) maande vanaf datum van uitreiking.

Die uitreikingsdatum is dus

#### **VOLLEDIGE TITELBESKRYWING:**

##### **1. GEDEELTE 6 (BOETEK) VAN DIE PLAAS BOETEK NR 319**

In die Munisipaliteit en Afdeling van BEAUFORT-WES  
PROVINSIE WES-KAAP

GROOT: 2154,5792 (TWEË DUISEND EEN HONDERD VIER EN VYFTIG  
KOMMA VYF SEWE NEGE TWEË) Hektaar

GEHOU kragtens Transportakte ten gunste van die Verkoper Nr.  
T61752/2006

##### **2. GEDEELTE 7(GEDEELTE VAN GEDEELTE 1) VAN DIE PLAAS BOETEK NR 319**

In die Munisipaliteit en Afdeling van BEAUFORT-WES  
PROVINSIE WES-KAAP

GROOT: 1070,6650 (EEN DUISEND EN SEWENTIG KOMMA SES SES  
VYF NUL) Hektaar

GEHOU kragtens Transportakte ten gunste van die Verkoper Nr.  
T61762/2006





**3. RESTANT GEDEELTE 1 VAN DIE PLAAS BOETEKAR NR 319**

In die Munisipaliteit en Afdeling van BEAUFORT-WES  
PROVINSIE WES-KAAP

GROOT: 1383,9216 (EEN DUISEND DRIE HONDERD DRIE EN TAGTIG  
KOMMA NEGE TWEE EEN SES) Hektaar

GEHOU kragtens Transportakte ten gunste van die **Verkoper Nr.**  
**T61762/2006**

**4. RESTANT VAN DIE PLAAS BOETEKAR NR 319**

In die Munisipaliteit en Afdeling van BEAUFORT-WES  
PROVINSIE WES-KAAP

GROOT: 2605,2134 (TWEE DUISEND SES HONDERD EN VYF KOMMA  
TWEE EEN DRIE VIER) Hektaar

GEHOU kragtens Transportakte ten gunste van die **Verkoper Nr.**  
**T61762/2006**

**5. GEDEELTE 5 ('N GEDEELTE VAN GEDEELTE 2) VAN DIE PLAAS  
LOMBARDS KRAAL NR 330**

In die Munisipaliteit en Afdeling van BEAUFORT-WES  
PROVINSIE WES-KAAP

GROOT: 956,3172 (NEGE HONDERD SES EN VYFTIG KOMMA DRIE  
EEN SEWE TWEE) Hektaar

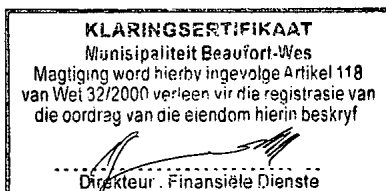
GEHOU kragtens Transportakte ten gunste van die **Verkoper Nr.**  
**T43776/2008**

**6. DIE PLAAS NR 432**

In die Munisipaliteit en Afdeling van BEAUFORT-WES  
PROVINSIE WES-KAAP

GROOT: 2577,4276 (TWEE DUISEND VYF HONDERD SEWE EN  
SEWENTIG KOMMA VIER TWEE SEWE SES) Hektaar

GEHOU kragtens Transportakte ten gunste van die **Verkoper Nr.**  
**T054166/2008**





**HANDTEKENING VAN AANVRAER:**

MUNICIPALITY / MUNICIPALITY  
Inkomstehangtoer  
09 OCT 2018  
Revenue Office  
BEAUFORT-WES / WEST



Ek sertifiseer dat die transportgewer se korrekte registrasienommer IT1844/2005 op belastinguitklaringsertifikaat moet lees. Munisipaliteit is reeds dienoreenkomstig in kennis gestel. Passeer asseblief! Baie dankie!

JANINE FOUCHE  
TRANSPORTBESORGER



5

PROD DEEDS REGISTRATION SYSTEM - CAPE TOWN  
PREPARED BY : DRS08262 - MNAMATA PHUMELELA ANTONIO

DATE : 20181016 TIME : 11:31:41.3 PAGE : 1

TRACK NUMBER : 80066839157

BLACK-BOOKING ENQUIRY ON NAME - VIVIERS TRUST  
ID NUMBER - 184A/2005  
BIRTH DATE - 0  
MARITAL STATUS -  
MAIDEN NAME -  
TYPE OF PERSON - TRUST

PERSON HAS NO CONTRACTS/INTERDICTIONS

\*\* PLEASE NOTE: THE INFORMATION APPEARING ON THIS PRINTOUT IS FURNISHED FOR PURPOSES OF INFORMATION ONLY.  
FOR MORE DETAILED INFORMATION, PLEASE REFER TO THE REGISTERED SOURCE DOCUMENTS.

\*\*\* END OF REPORT \*\*\*

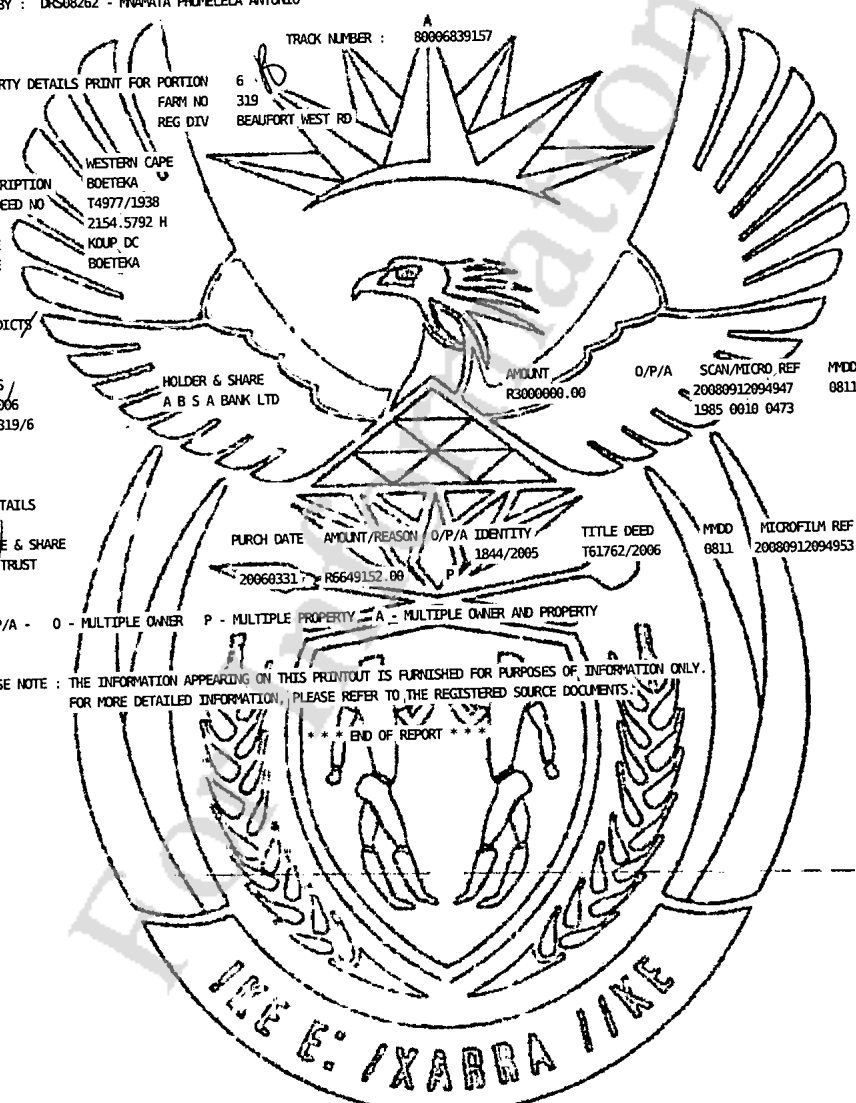




6

PROD DEEDS REGISTRATION SYSTEM - CAPE TOWN  
PREPARED BY : DRS08262 - MNUMATA PHUMELELA ANTONIO

DATE : 20181016 TIME : 11:31:59.8 PAGE : 1



TRACK NUMBER : 80066839157

PROPERTY DETAILS PRINT FOR PORTION 6  
FARM NO 319  
REG DIV BEAUFORT WEST RD

PROVINCE WESTERN CAPE  
PREV DESCRIPTION BOETEKA  
DIAGRAM DEED NO T4977/1938  
EXTENT 2154.5792 H  
CLEARANCE KQUP, DC  
FARM NAME BOETEKA

NO INTERDICTS

DOCUMENTS /  
B82297/2006  
FARM BF 319/6

HOLDER & SHARE  
A B S A BANK LTD

AMOUNT  
R3000000.00

O/P/A SCAN/MICRO\_REF MMD  
20080912094947 0811  
1985 0010 0473

OWNER DETAILS

FULL NAME & SHARE  
VIVIER/TRUST

PURCH DATE AMOUNT/REASON O/P/A IDENTITY TITLE DEED MMD MICROFILM REF  
20060331 R6649152.00 P 1844/2005 T61762/2006 0811 20080912094953

\* O/P/A - 0 - MULTIPLE OWNER P - MULTIPLE PROPERTY A - MULTIPLE OWNER AND PROPERTY

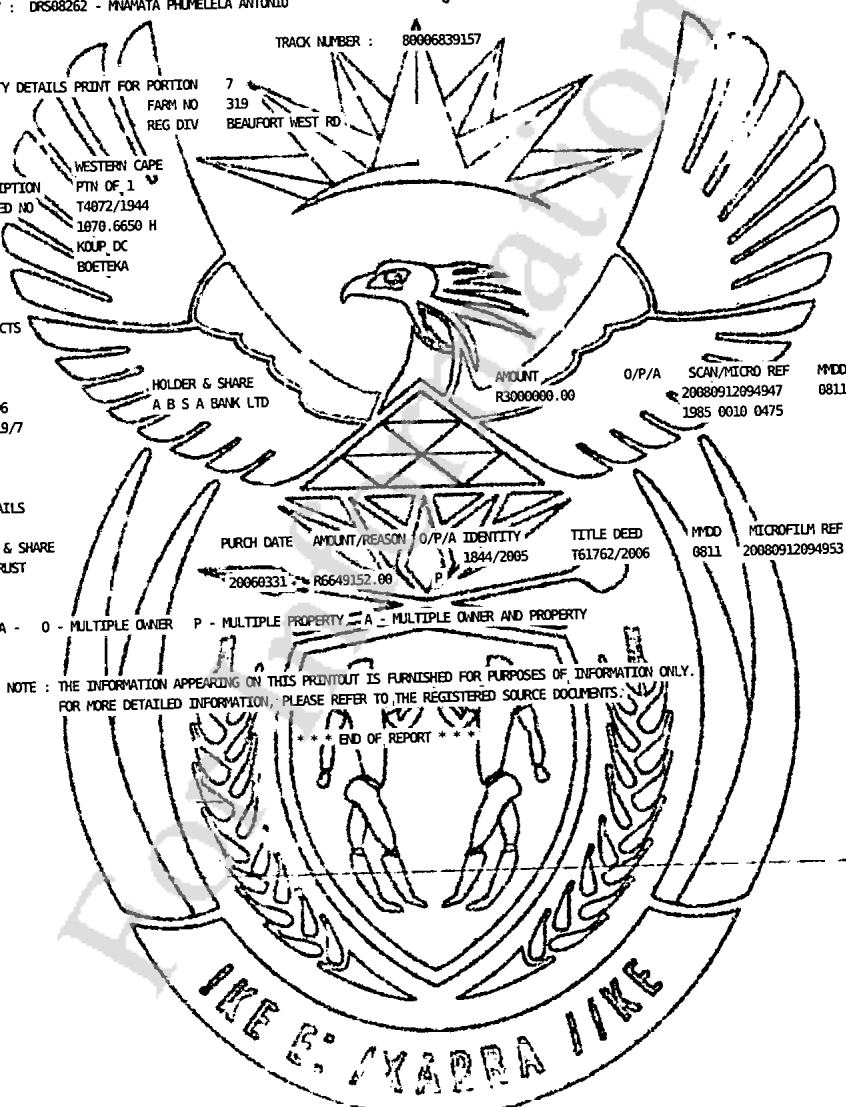
\*\* PLEASE NOTE : THE INFORMATION APPEARING ON THIS PRINTOUT IS FURNISHED FOR PURPOSES OF INFORMATION ONLY.  
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\*\*\* END OF REPORT \*\*\*

IKE: /XABRA /IKE



7



TRACK NUMBER : 88006839157

PROPERTY DETAILS PRINT FOR PORTION 7  
FARM NO 319  
REG DIV BEAUFORT WEST RD

PROVINCE WESTERN CAPE  
PREV DESCRIPTION PTIN OF 1  
DIAGRAM DEED NO T4872/1944  
EXTENT 1870.6650 H  
CLEARANCE KQUP, DC  
FARM NAME BOETKA

NO INTERDICTS

DOCUMENTS  
882297/2006  
FARM BF 319/7

HOLDER & SHARE  
A B S A BANK LTD

AMOUNT  
R3000000.00

O/P/A  
SCAN/MICRO REF  
20080912094947  
1985 0010 0475

MYDD  
0811

OWNER DETAILS

FULL NAME & SHARE  
VIVIERS TRUST

PURCH DATE	AMOUNT/REASON	O/P/A	IDENTITY	TITLE DEED	MYDD	MICROFILM REF
20060331	R6649152.00	P	1844/2005	T61762/2006	0811	20080912094953

\* O/P/A - 0 - MULTIPLE OWNER P - MULTIPLE PROPERTY A - MULTIPLE OWNER AND PROPERTY

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\*\*\* END OF REPORT \*\*\*

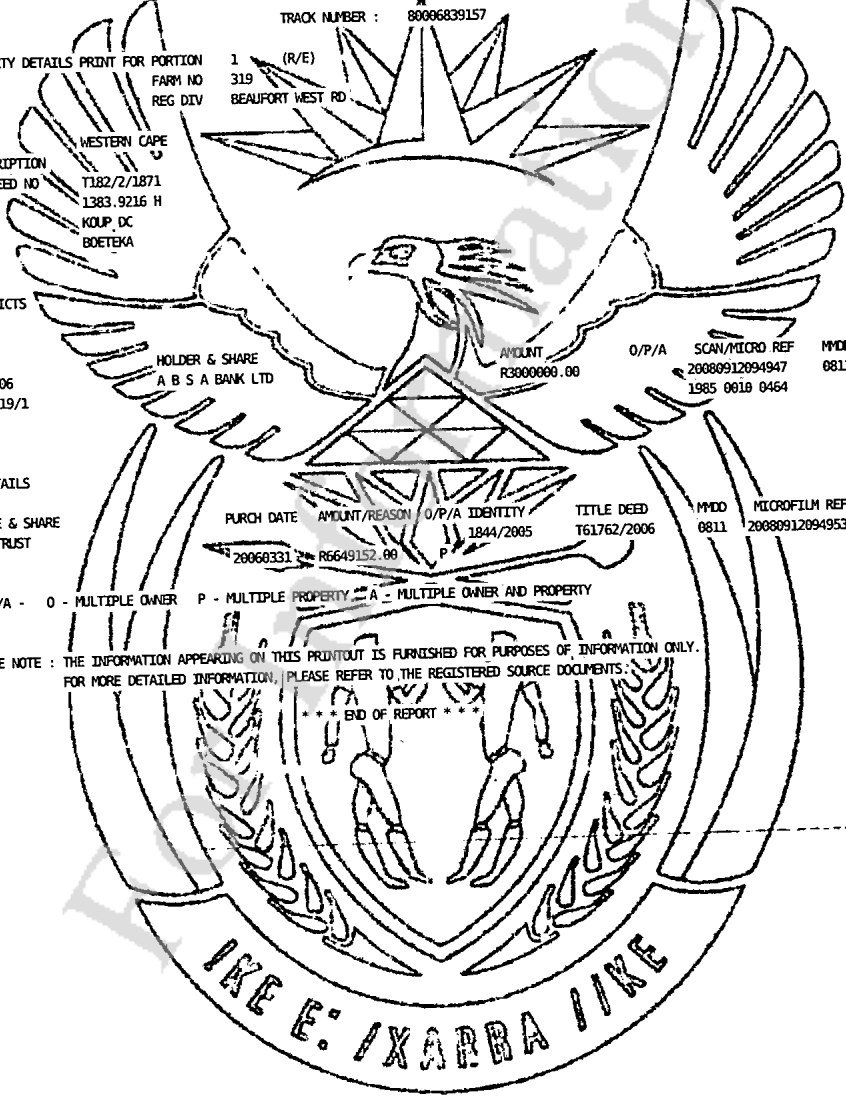
IKHE E: AYARRA IKHE



8

PROD DEEDS REGISTRATION SYSTEM - CAPE TOWN  
PREPARED BY : DRS08262 - MNAMATA PHUMELELA ANTONIO

DATE : 20181016 TIME : 11:32:17.0 PAGE : 1



TRACK NUMBER : 8006839157

PROPERTY DETAILS PRINT FOR PORTION 1 (R/E)  
FARM NO 319  
REG DIV BEAUFORT WEST RD

PROVINCE WESTERN CAPE  
PREV DESCRIPTION T182/2/1871  
DIAGRAM DEED NO 1383.9216 H  
EXTENT KQUP, DC  
CLEARANCE BOETKA  
FARM NAME

NO INTERDICTS

DOCUMENTS 882297/2006  
FARM BF 319/1

HOLDER & SHARE A B S A BANK LTD

AMOUNT R3000000.00

O/P/A SCAN/MICRO REF MMD 0811  
20080912094947  
1985 0010 0464

OWNER DETAILS

FULL NAME & SHARE VIVIERS TRUST

PURCH DATE 20060331 AMOUNT/REASON R6649152.00 O/P/A IDENTITY 1844/2005 TITLE DEED T61762/2006 MMD 0811 MICROFILM REF 20080912094953

\* O/P/A - 0 - MULTIPLE OWNER P - MULTIPLE PROPERTY A - MULTIPLE OWNER AND PROPERTY

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\*\*\* END OF REPORT \*\*\*

IKE E: /XARBA IKE



9

PROD DEEDS REGISTRATION SYSTEM - CAPE TOWN  
PREPARED BY : DRS08262 - MNUMATA PHUMELELA ANTONIO

DATE : 20181016 TIME : 11:32:24.5 PAGE : 1

TRACK NUMBER : 80006839157

PROPERTY DETAILS PRINT FOR PORTION 0 (R/E)  
FARM NO 319  
REG DIV BEAUFORT WEST RD

Bo

PROVINCE WESTERN CAPE  
PREV DESCRIPTION  
DIAGRAM DEED NO T4872/1944  
EXTENT 2605.2134 H  
CLEARANCE KOUJ DC  
FARM NAME BOETEGA

NO INTERDICTS

DOCUMENTS	HOLDER & SHARE	AMOUNT	O/P/A	SCAN/MICRO REF	MMD
882297/2006	A B S A BANK LTD	R3000000.00		20880912094947	0811
FARM BF 319				1985 0010 0461	
PTNS BF RD 319/1-7					

OWNER DETAILS

FULL NAME & SHARE	PURCH DATE	AMOUNT/REASON	O/P/A	IDENTITY	TITLE DEED	MMD	MICROFILM REF
VIVIERS TRUST	20060331	R6649152.00		1844/2005	T61762/2006	0811	20880912094953
				P			

\* O/P/A - O - MULTIPLE OWNER P - MULTIPLE PROPERTY A - MULTIPLE OWNER AND PROPERTY

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\*\*\* END OF REPORT \*\*\*



10

P

PROD DEEDS REGISTRATION SYSTEM - CAPE TOWN  
PREPARED BY : DRS08262 - MAMATA PHUMELELA ANTONIO

DATE : 20181016 TIME : 11:32:33.5 PAGE : 1

PROPERTY DETAILS PRINT FOR PORTION 5  
FARM NO 330  
REG DIV BEAUFORT WEST RD

PROVINCE WESTERN CAPE  
PREV DESCRIPTION PTN OF 2  
DIAGRAM DEED NO T20974/1953  
EXTENT 956.3172 H  
CLEARANCE KOUJ DC  
FARM NAME LOMBARDS KRAAL

NO INTERDICTS

DOCUMENTS  
K502/1990S  
FARM BF 330/5

OWNER DETAILS  
FULL NAME & SHARE  
VIVIERS TRUST

TRACK NUMBER : 80006839157

AMOUNT

O/P/A SCAN/MICRO REF MYDD  
1990 0928 1117  
1985 0010 0584

PURCH DATE AMOUNT/REASON O/P/A IDENTITY TITLE DEED MYDD MICROFILM REF  
20080328 R115000.00 1844/2005 T43776/2008 0630 20080722114724

\* O/P/A - 0 - MULTIPLE OWNER P - MULTIPLE PROPERTY A - MULTIPLE OWNER AND PROPERTY

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\*\*\* END OF REPORT \*\*\*

IKHE: XABEN IKHE



11

TRACK NUMBER : 80066839157

PROPERTY DETAILS PRINT FOR PORTION 0  
FARM NO 432  
REG DIV BEAUFORT WEST RD

PROVINCE WESTERN CAPE  
PREV DESCRIPTION  
DIAGRAM DEED NO TS4166/2008  
EXTENT 2577.4276 H  
CLEARANCE KOUJ, DC  
FARM NAME BEAUFORT WEST RD

ORIGIN PROPERTY  
CONSOLIDATE FROM REG DIV BEAUFORT WEST RD , FARM NAME BEAUFORT WEST RD , FARM NO 330 , PRTN 13  
CONSOLIDATE FROM REG DIV BEAUFORT WEST RD , FARM NAME , FARM NO 319 , PRTN 4

NO INTERDICTIONS

NO DOCUMENTS

OWNER DETAILS

FULL NAME & SHARE  
VIVIER TRUST

PURCH DATE AMOUNT/REASON O/P/A IDENTITY TITLE DEED  
1844/2005 TS4166/2008

MMD MICROFILM REF  
0814 29080912093404

CCT

\* O/P/A - 0 - MULTIPLE OWNER P - MULTIPLE PROPERTY A - MULTIPLE OWNER AND PROPERTY

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\*\*\* END OF REPORT \*\*\*

IKHE: /XARBA IKHE



Komponente

1. Die figuur A B C D E F G H J K a R stel voor Gedeelte 13 van Lombards Kraal Nr 330, sien Kaart Nr 1609/2008 geheg aan Transport Akte Nr 2008. 54165
2. Die figuur Q R a L M N P stel voor Gedeelte 4 van Boeteka Nr 319, sien Kaart Nr A4210/1925 geheg aan Transport Akte Nr 1925.265.12484

L.G. No

1610/2008

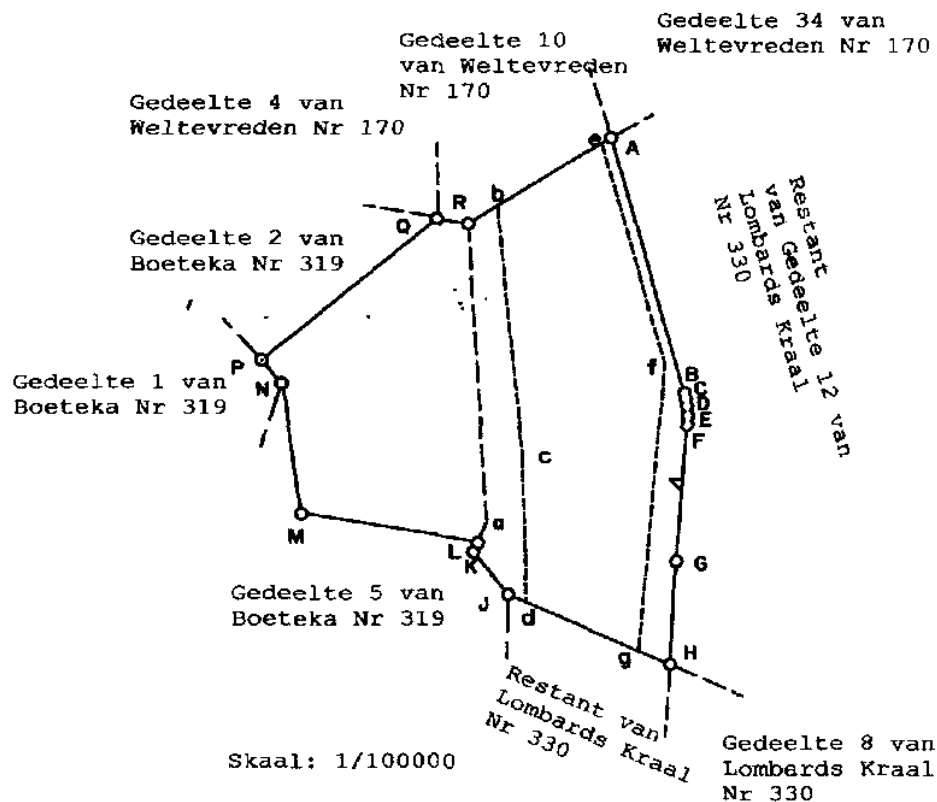
Gedeegeur

Landmeter-generaal

2008.05.19

Serwitunt Nota

Die lyne bcd, efg stel voor die hartlyn van 'n Serwitunt van Elektriese Kragleiding wat 'n wydte van 23,5 meter aan albei kante van lyn bcd en 15,5 meter aan albei kante van lyn efg soos aangetoon, sien Kaart Nr 4607-1991 geheg aan K963/92



Die figuur A B C D E F G H J K L M N P Q R  
stel voor 2577,4276 Hektaar grond, synde  
Die Plaas Nr 432  
en bestaan uit komponente 1 en 2 bo genoem

gelee in Beaufort-Wes Munisipaliteit en Administratiewe Distrik  
BEAUFORT-WES Provinsie Wes-Kaap

Saamgestel in Maart 2008  
deur my

W M VAN DEN HEEVER  
PROFESSIONELE LANDMETER  
PLS 0633

Hierdie kaart is geheg  
aan

No. T 54166/2008  
Gedateer

t.g.v.

Registrateur van Aktes

Die oorspronklike  
kaarte is soos  
bo genoem

Leer No Bft W 330

M.S. No Saamgestel

Komp CL-4 (4583)  
CL-6 (4590)

S



# CK RUMBOLL & VENNOTE / PARTNERS



PROFESIONELE LANDMETERS ~ ENGINEERING AND MINE SURVEYORS ~ STAD- EN STREEKSBEPLANNERS ~ SECTIONAL TITLE CONSULTANTS

---

## POWER OF ATTORNEY

I, Stephanus Joubert Roux, the undersigned Director of ZERO CARBON CHARGE (PTY) LTD, hereby authorize Messrs CK RUMBOLL AND PARTNERS to act on my behalf in submitting any necessary applications or documentation in terms of the Municipal Land Use Planning Regulations or any other applicable legislation, aiming to secure the necessary land use rights for the development of a Renewable Energy Facility, Charging Station, Farm Stall/Tourist Facility, and/or Truck Stop on **Farm No. 432, Beaufort West Registration Division**.

Signed at Vredendal on this 12th day of January 2025

A handwritten signature in black ink, appearing to be 'SJR'.

---

### VENNOTE / PARTNERS:

IHJ Rumboll PRL (SA), BSc (Sury), M.I.P.L.S. and AP Steyl PrL (SA), BSc (Sury), M.I.P.L.S.

---

ADDRESS/ ADRES: [reception@rumboll.co.za](mailto:reception@rumboll.co.za) / PO Box 211 / Rainierstr 16, Malmesbury, 7299  
MALMESBURY (T) 022 482 1845 (F) 022 487 1661 VREDENBURG (T) 022 719 1014

---



# COMPANY RESOLUTION

## ZERO CARBON CHARGE (PTY) LTD


### Minutes of a meeting of the Directors of ZERO CARBON CHARGE (PTY) LTD

PASSED AT Mica ON THIS 05 DAY OF December 2022.

#### RESOLVED THAT:

1. Stephanus Joubert Roux [DIRECTOR NAME], in his capacity as Director, makes Application to the authorities as may be deemed necessary for **any application that may be required for the development of a Renewable Energy Facility, Charging Station, Farm Stall and/or Truck Stop** in terms of the Spatial Planning & Land Use Management Act (Act 16 of 2013) (SPLUMA), Act 70 of 1970 or other applicable legislation and sign the application on behalf of the Company. In addition, make any other necessary submissions and presentations in relation to the above mentioned matter.
2. Stephanus Joubert Roux [DIRECTOR NAME], in his capacity as Director, is hereby authorised to sign any documents which may be deemed necessary to give effect to this resolution.

#### SIGNATURES:

- |    |  |  |
|----|--|--|
| 1. | <br>_____<br>Director | <u>Stephanus Joubert Roux</u><br>_____<br>Name (printed) |
| 2. | _____<br>Director  | _____<br>Name (printed)                                  |
| 3. | _____<br>Director  | _____<br>Name (printed)                                  |



**AANHANGSEL "C"**

**SPEZIALE VOLMAG**

**QUICKSTEP 479 PTY LTD**

ID/REG Nr/Nr: **201749754207**

Verteenwoordiger: **Jan Abraham Viviers (5108105085084)**

Eienaar van die volgende eiendom(me):-

Beskrywing	Titelakte	Grootte
Plaas 432, Beaufort West	T49756/2018	2577.4276H

Verleen hiermee volmag aan **ZERO CARBON CHARGE (EDMS) BPK (Reg Nr: 2022/232376/07)**, of sy verteenwoordiger, met reg van assumpisie, sessie en delegasie, om 'n aansoek(e) voor te berei en in te dien in terme van die Wet op Onderverdeling van Landbougrond, Wet 70 van 1970, Munisipale bywette met betrekking tot die Munisipale Grondbeplanningswet, enige provinsiale Grondbeplanningswet, ten einde bovermelde eiendom te onderverdeel en/of te hersoneer, en/of 'n vergunningsaansoek te doen en/of 'n afwykingsaansoek te doen en/of sodanige stadsbeplanningsprosedure uit te voer, ten einde die eiendom, of 'n gedeelte van die eiendom vir die volgende doeleindes te benut:-

Hernubare energie, herlaai van voertuie en/of toerusting, kleinhandel, netwerk installasies, voertuig deurgange en/of voertuig parkering en/of alle gebruike wat hiermee verband hou.

en in die algemeen, ten einde voorafgaande doeleindes uit te voer, te doen of te laat doen al wat nodig is, net so volmaak en doeltreffend asof ek self teenwoordig was en hierin gehandel het, en bekragtig hiermee alles wat genoemde gevolmagtigde, of sy agent, uit krag hiervan wettiglik doen of laat doen.

Onderteken deur my op 20/11 2023 te Beaufort West.

\*

  
**HANDTEKENING**

**Jan Abraham Viviers (5108105085084)**

**DRUKSKRIF: VOLLE NAAM**





# **RESOLUSIE**

**MAATSKAPPY/BK/TRUST**

A handwritten signature in black ink, located in the bottom right corner of the page. The signature is stylized, with a large, looped initial 'R' or 'B' followed by a cursive 'h'.



## RESOLUSIE GENEEM OP 'N VERGADERING VAN DIE TRUSTEES/LEDE/DIREKTEURE VAN

QUICKSTEP 479 PTY LTD

(MAATSKAPPY/BK/TRUST) (Reg Nr: 201749754207)

("die Trust/BK/Maatskappy")

GEHOU TE Beaufort West

OP 20/11/2023

## DAAR WORD BESLUIT DAT:

- Die Trust/Maatskappy/BK 'n opsie sal verleen aan **Zero Carbon Charge (Edms) Bpk** (Reg Nr: 2022/232376/07), op die terme en voorwaardes soos vermeld in die betrokke Ooreenkoms, ten opsigte van die eiendom bekend as:-  
Farm 432, Beaufort West RD
- Dat **Jan Abraham Viviers** (Identiteitsnommer: 5108105085084) gemagtig word om enige dokumente, insluitende 'n koopkontrak, huurkontrak, opsie(s), transportprokurasie, besluite en ander verwante dokumente namens die Trust/BK/Maatskappy te onderteken ten einde uiting aan hierdie Besluit te gee.

GESERTIFISEER AS 'N WARE UITTREKSEL

\*

HANDTEKENING

Jan Abraham Viviers

VOLLE NAAM

HANDTEKENING

VOLLE NAAM

HANDTEKENING

Joanie Viviers Russouw

VOLLE NAAM

HANDTEKENING

VOLLE NAAM



**FNB BUSINESS BANKING**  
132 High Street  
Oudtshoorn 6620  
Email: GvanLoggerenberg@fnb.co.za  
Web: www.fnb.co.za  
Tel: 087 336 0279  
Cell: 079 898 5706



27 November 2024

The Director  
QUICKSTEP 479 (PTY) LTD  
FARM BOETEKA  
BEAUFORT WEST  
6970

Email: info@boeteka.co.za

Dear Sir/Madam

**BONDHOLDERS CONSENT: QUICKSTEP 479 PTY LTD  
PROPERTY: FARM NO 432, BEAUFORT WEST**

We, FirstRand Bank Limited (Reg. No. 1929/001225/06), acting through its First National Bank division (the "Bank") provide this letter to you to confirm the following:

- 1 The Bank, as mortgagee in terms of Bond no: B26641/2024, hereby provide our consent to the proposed installation of an electric passenger vehicle charging station and erection of a farm stall.
- 2 The Bank's consent contained in this letter should not be misconstrued as a waiver of any of the Bank's rights and/or preference as mortgagee under bond no: Bond no: B26641/2024;


We trust that you will find above in order.

Yours sincerely

Signed at Oudtshoorn on this the 27<sup>th</sup> day of November 2024.

For and on behalf of  
**FirstRand Bank Limited**

  
Name:  
Capacity: **Relationship Manager**  
Who warrants authority

  
ADELE VAN DER MERWE

Name:  
Capacity: **Credit Manager**  
Who warrants authority





## **ANNEXURE D:**

### **Supporting Studies, Reports and Letters of Support**





**BEAUFORT-WES(T)  
MUNISIPALITEIT // MUNICIPALITY**

**LAND USE PLANNING PRE-APPLICATION CONSULTATION FORM**

**KINDLY NOTE:**

*Pre-application consultation is an advisory session and does not in any way pre-empt the outcome of any future application which may be submitted to the Municipality.*

**PART A: PARTICULARS**

Reference number: \_\_\_\_\_

Purpose of consultation: **To discuss the application of a renewable energy structure (solar) and charging station for electric vehicles.**

Brief proposal: **Rezoning and Consent Use to establish a service trade (charging area for electric vehicles) and a renewable energy structure.**

Property(ies) description: **Farm no 432, Beaufort West Division.**

Date: **13 March 2024.**

Attendees:

	Name & Surname	Organisation	Contact Number	E-mail
Official	Christopher Wright	Beaufort West Municipality	023 414 8102	<a href="mailto:christopher@beaufortwestmun.co.za">christopher@beaufortwestmun.co.za</a>
Pre-applicant	Roeben Pienaar	CK Rumboll & Partners	022 482 1845	<a href="mailto:planning9@rumboll.co.za">planning9@rumboll.co.za</a>
	Nical Grobbelaar	CHARGE	078 841 2716	<a href="mailto:Nical@charge.co.za">Nical@charge.co.za</a>




List documents provided for discussion at meeting:

*(Include document reference, document/plan dates and plan numbers where possible and attach to this form)*

**The complete land use application has been made available for this consultation which includes; a motivational report, company resolutions and powers of attorney, municipal application form, title deed and property diagrams, locality map, site development plan, and rezoning plan.**

Has pre-application consultation been undertaken for a land development application in terms of section 53 of the Western Cape Land Use Planning Act, 2014 (Act 3 of 2014) (LUPA) and regulation 10 of the Western Cape Land Use Planning Regulations, 2015 (LUP regulations)?

*(If yes, request a copy of the minutes)*

YES	<b><u>NO</u></b>
-----	------------------

Comprehensive overview of proposal:

**The application includes the proposed rezoning of a portion (±242m<sup>2</sup>) of Farm no 432, Beaufort West Division, from Agricultural Zone I to Business Zone II to permit a Service Trade (Charging Area for Electric Vehicles) on the property. Application is also made for the consent use to permit a renewable energy structure (solar PV panels and associated infrastructure) on a portion (±8250m<sup>2</sup>) of the property zoned as Agricultural Zone I.**

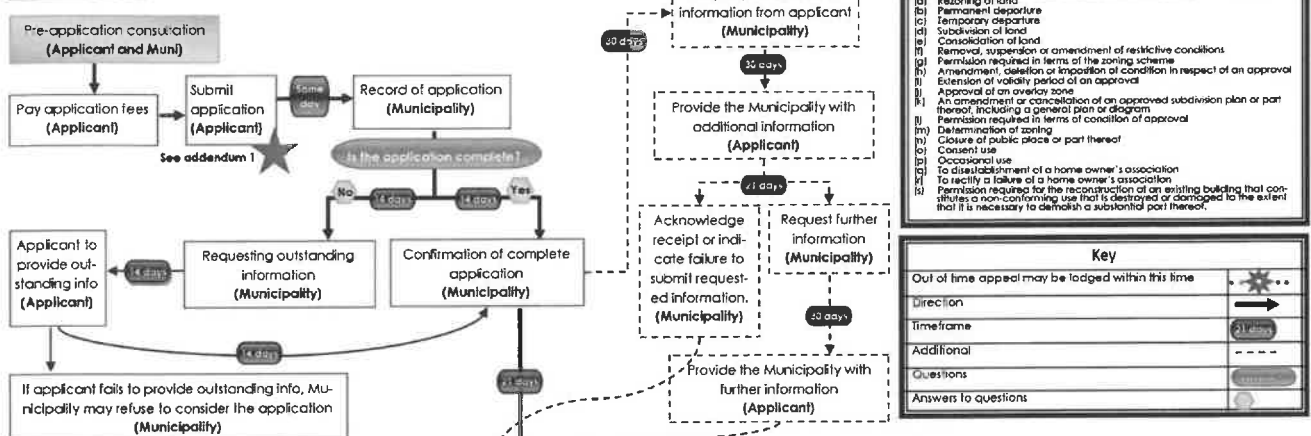
**This renewable energy structure will be used to generate electricity to charge electric vehicles. A new parking area will be provided near the existing "Boeteka Farm Stall" and this parking area will include infrastructure for charging electric cars. The charging area will allow for charging 6 cars simultaneously (4 covered and 2 uncovered). Cars will charge between 30mins - 1 hour and customers will be able to spend this time at the farm stall while they wait.**



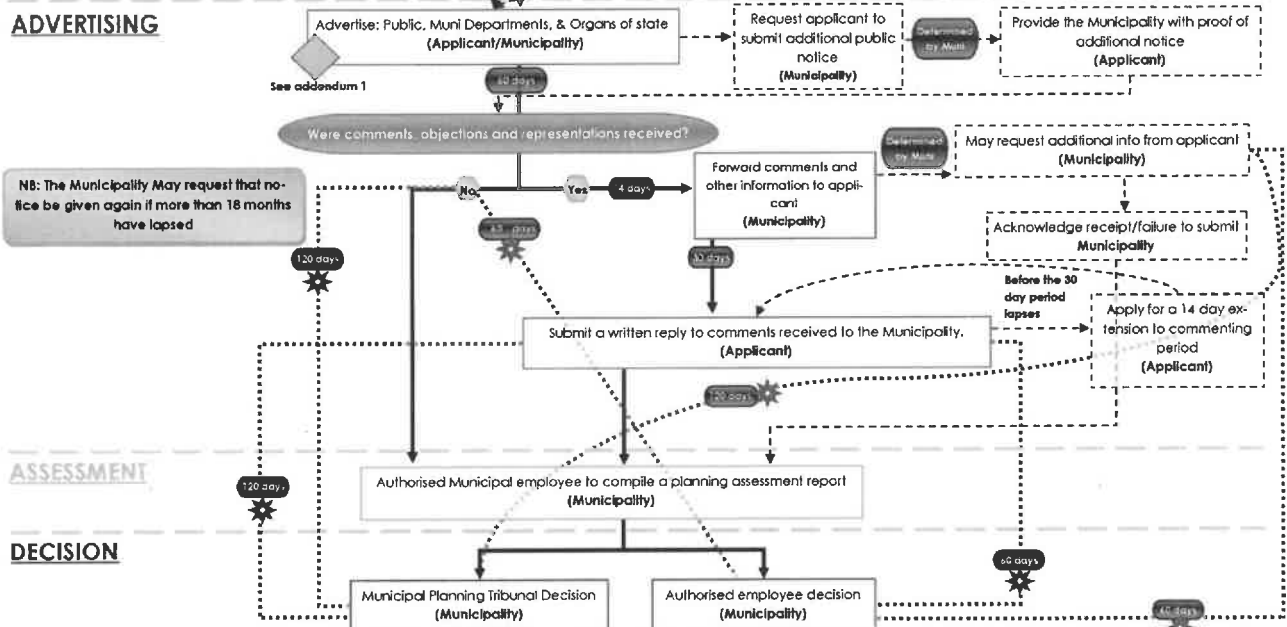
## PART B: APPLICATION PROCESS

### Draft By-Law on Municipal Land Use Planning (Workflow)

#### SUBMISSION

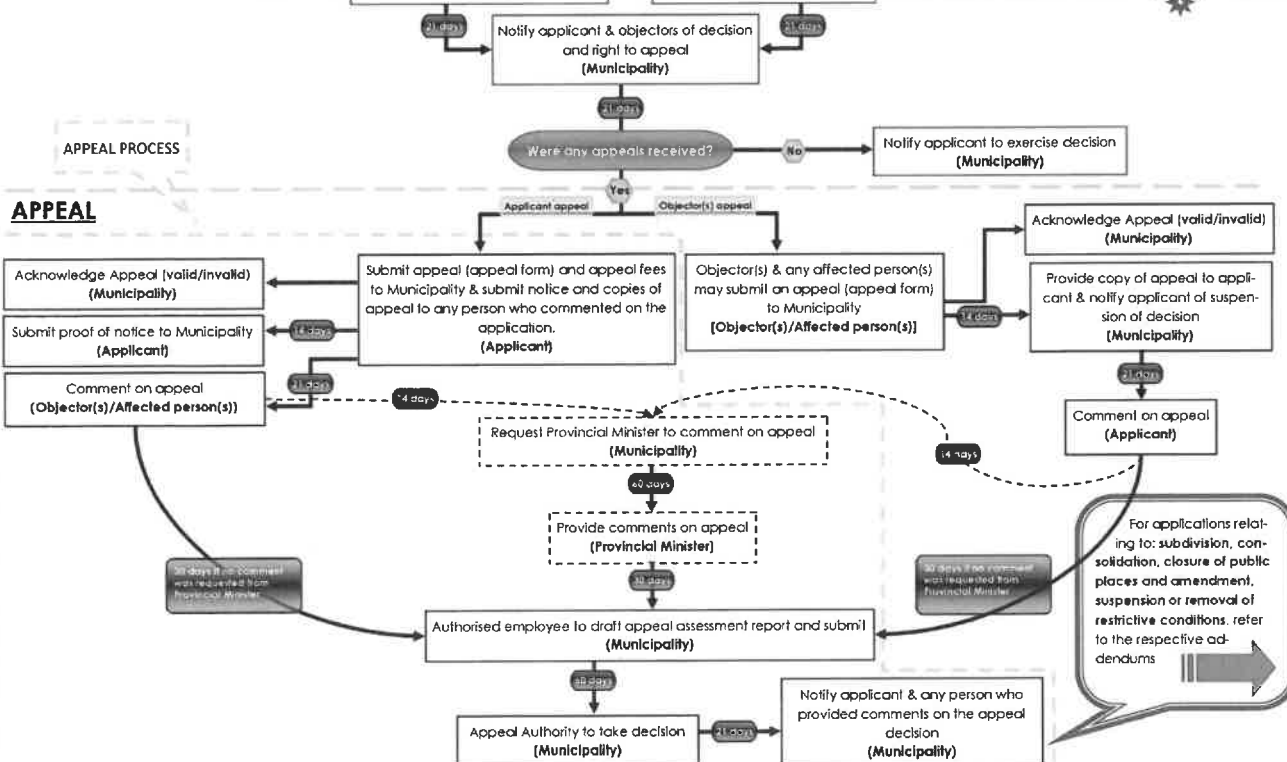


#### ADVERTISING



#### ASSESSMENT

#### DECISION



#### APPEAL



## PART C: QUESTIONNAIRES

### SECTION A: DETERMINATION OF APPLICATION TYPES, PRESCRIBED NOTICE AND FEES

Tick if relevant	What land use planning applications are required in terms of section 15 of the By-Law on Municipal Land Use Planning for Beaufort West Municipality	Application fees payable
√	2(a) a rezoning of land;	R
√	2(b) a permanent departure from the development parameters of the zoning scheme;	R
√	2(c) a departure granted on a temporary basis to utilise land for a purpose not permitted in terms of the primary rights of the zoning applicable to the land;	R
√	2(d) a subdivision of land that is not exempted in terms of section 24, including the registration of a servitude or lease agreement;	R
√	2(e) a consolidation of land that is not exempted in terms of section 24;	R
√	2(f) a removal, suspension or amendment of restrictive conditions in respect of a land unit;	R
√	2(g) a permission required in terms of the zoning scheme;	R
√	2(h) an amendment, deletion or imposition of conditions in respect of an existing approval;	R
√	2(i) an extension of the validity period of an approval;	R
√	2(j) an approval of an overlay zone as contemplated in the zoning scheme;	R
√	2(k) an amendment or cancellation of an approved subdivision plan or part thereof, including a general plan or diagram;	R
√	2(l) a permission required in terms of a condition of approval;	R
√	2(m) a determination of a zoning;	R
√	2(n) a closure of a public place or part thereof;	R
√	2(o) <b>a consent use contemplated in the zoning scheme;</b>	Y2. R 819.10
√	2(p) an occasional use of land;	R
√	2(q) to disestablish a home owner's association;	R
√	2(r) to rectify a failure by a home owner's association to meet its obligations in respect of the control over or maintenance of services;	R
√	2(s) a permission required for the reconstruction of an existing building that constitutes a non-conforming use that is destroyed or damaged to the extent that it is necessary to demolish a substantial part of the building.	R



Tick if relevant		What prescribed notice will be required?	Advertising fees payable
Y	N	Serving of notices (i.e Delivering by hand; registered post; data messages) Publication of notices (i.e Local Newspaper(s); <i>Provincial Gazette</i> ; <i>site notice</i> ; <i>Municipality's website</i> )	R 3 285.41
Y	N	Additional publication of notices (i.e Site notice, public meeting, local radio station, Municipality's website, letters of consent or objection)	R
Y	N	Notice of decision (i.e Provincial Gazette)	R
Y	N	Integrated procedures	R
<b>TOTAL APPLICATION FEE*:</b>			<b>R 4 923.61</b>

**KINDLY NOTE:** \* Application fees are estimated on the information discussed and are subject to change with submission of the formal application.

Application fees that are paid to the Municipality are non-refundable and proof of payment of the application fees must accompany an application.

The applicant is liable for the cost of publishing and serving notice of an application.

### **SECTION B:**

#### **PROVISIONS IN TERMS OF THE RELEVANT PLANNING LEGISLATION / POLICIES / GUIDELINES**

QUESTIONS REGARDING PLANNING POLICY CONTEXT	YES	NO	TO BE DETERMINED	COMMENT
Is any municipal integrated development plan, spatial development framework(s), structure plans, by-laws or any other municipal policies or guidelines applicable? If yes, is the proposal in line with the aforementioned documentation/plans?	X			
Any applicable restrictive condition(s) prohibiting the proposal? If yes, is/are the condition(s) in favour of a third party(ies)? [List condition numbers and third party(ies)]		X		
Any other Municipal by-law that may be relevant to application? (If yes, specify)		X		
<b>Zoning Scheme By-law considerations:</b> What is the current zoning of the property? <b><u>Agricultural Zone I.</u></b> What is the proposed zoning of the property? <b><u>Split Zoning – Agricultural Zone I &amp; Business Zone II (±242m²).</u></b> Does the proposal fall within the provisions/parameters of the zoning scheme? <b><u>Yes.</u></b>				



Are additional applications required to deviate from the zoning scheme? (if yes, specify) <b>No.</b>	
---	--

QUESTIONS REGARDING OTHER PLANNING CONSIDERATIONS	YES	NO	TO BE DETERMINED	COMMENT
Is a development application affecting national interest in terms of section 52(3) of Spatial Planning Land Use Management Act, 2013 (Act 16 of 2013) (SPLUMA), required?		X		
Is the proposal in line with the national spatial development framework and national laws, regulations, other guidelines or documents?	X			
Is the proposal in line with the principles for land development, set out in the SPLUMA and the Western Cape Land Use Planning Act, 2014 (Act 3 of 2014)?	X			
Is the proposal in line with the provincial spatial development framework(s) and provincial laws, regulations, other policies, guidelines or documents?	X			
Is any district municipal integrated development plan, spatial development framework, other policies, guidelines or documents relevant?		X		

### **SECTION C:**

#### **CONSENT / COMMENT REQUIRED FROM OTHER ORGANS OF STATE**

QUESTIONS REGARDING CONSENT / COMMENT REQUIRED	YES	NO	TO BE DETERMINED	OBTAIN APPROVAL / CONSENT / COMMENT FROM:
Is a land development application required in terms of section 53(2) of LUPA or section 10 of LUP Regulations?		X		Western Cape Provincial Department of Environmental Affairs & Development



				Planning (DEA&DP)
Is provincial comment on land use application(s) required in terms of section 45(1) of LUPA?		<b>X</b>		DEA&DP
Is/was the property(ies) utilised for agricultural purposes?	<b>X</b>			Western Cape Government Department of Agriculture
Will the proposal require approval in terms of Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970)?		<b>X</b>		National Department of Agriculture, Forestry and Fisheries (DAFF)
Will the proposal trigger a listed activity in terms of National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA)?			<b>X</b>	DEA&DP
Will the proposal require authorisation in terms of Specific Environmental Management Act(s) (SEMA)? (National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003) (NEM:PAA) / National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004) (NEM:BA) / National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004) (NEM:AQA) / National Environmental Management: Integrated Coastal Management Act, 2008 (Act 24 of 2008) (NEM:ICM) / National Environmental Management: Waste Act, 2008 (Act 59 of 2008) (NEM:WA) (strikethrough irrelevant)		<b>X</b>		National Department of Environmental Affairs (DEA) & DEA&DP
Will the proposal require authorisation in terms of the National Water Act, 1998 (Act 36 of 1998)?		<b>X</b>		National Department of Water & Sanitation (DWS)
Will the proposal trigger a listed activity in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?			<b>X</b>	South African Heritage Resources Agency (SAHRA) & Heritage



				Western Cape (HWC)
Will the proposal have an impact on any National or Provincial roads?	X			National Department of Transport / South Africa National Roads Agency Ltd. (SANRAL) & Western Cape Department of Transport and Public Works (DT&PW)
Will the proposal trigger a listed activity in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993): Major Hazard Installations Regulations		X		National Department of Labour (DL)
Will the proposal affect any Eskom owned land and/or servitudes?		X		Eskom
Will the proposal affect any Telkom owned land and/or servitudes?		X		Telkom SA Ltd.
Will the proposal affect any Transnet/Passenger Rail Agency of South Africa owned land and/or servitudes?		X		Transnet/PRASA
Is the property subject to a land / restitution claim(s)?		X		National Department of Rural Development & Land Reform
Will the proposal require comments from South African National Parks (SANParks) and/or CapeNature?		X		SANParks / CapeNature
Is the property subject to any existing mineral rights?		X		National Department of Mineral Resources
Does the proposal lead to densification to such an extent that the number of schools, healthcare facilities, libraries, safety services, etc. In the area may be impacted on? (strikethrough irrelevant)		X		Western Cape Government Departments of Cultural Affairs & Sport,



				Education, Social Development, Health and Community Safety
Does the proposal require any other authorisation(s) in terms of other applicable legislation that is not listed in the subject table?		X		If yes, specify

**SECTION D:**  
**SERVICE REQUIREMENTS**

DOES THE PROPOSAL REQUIRE THE FOLLOWING ADDITIONAL INFRASTRUCTURE / SERVICES?	YES	NO	TO BE DETERMINED	OBTAIN COMMENT FROM: (list internal department)
Electricity supply:		X		
Water supply:		X		
Sewerage and waste water:		X		
Stormwater:		X		
Road network:		X		
Telecommunication services:		X		
Other services required? Please specify.		X		
Development charges:		X		



**PART D: ATTACHMENTS AND SUPPORTING INFORMATION AND DOCUMENTATION FOR LAND USE PLANNING APPLICATION**

Information and documentation required in terms of section 38(1) of the By-Law on Municipal Land Use Planning for Beaufort West Municipality									
Completed and signed application form				Bondholder's consent (if applicable)					
Power of attorney / Owner's consent if applicant is not owner				Proof of registered ownership or any other relevant right held in the land concerned					
Resolution or other proof that applicant is authorised to act on behalf of a juristic person				S.G. diagram / General plan extract					
Written motivation				Site development plan or conceptual layout plan					
Locality plan				Proof of agreement or permission for required servitude					
Proposed subdivision plan				Full copy of the title deed					
Proof of payment of application fees				Minutes of pre-application consultation meeting (if applicable)					
Conveyancer's certificate									
<b>Supporting information and documentation:</b>									
Y	N	N/A	Consolidation plan	Y	N	N/A	Land use plan / Zoning plan		
Y	N	N/A	Street name and numbering plan	Y	N	N/A	1 : 50 / 1:100 Flood line determination (plan / report)		
Y	N	N/A	Landscaping / Tree plan	Y	N	N/A	Home Owners' Association consent		
Y	N	N/A	Abutting owner's consent	Y	N	N/A	Services Report or indication of all municipal services / registered servitudes		
Y	N	N/A	Copy of Environmental Impact Assessment (EIA) / Heritage Impact Assessment (HIA) / Traffic Impact Assessment (TIA) / Traffic Impact Statement (TIS) / Major Hazard Impact Assessment (MHIA) / Environmental Authorisation (EA) / Record of Decision (ROD) (strikethrough irrelevant)	Y	N	N/A	Proof of failure of Home owner's association		
Y	N	N/A	Copy of original approval and conditions of approval	Y	N	N/A	Any additional documents or information required as listed in the pre-application consultation form / minutes		
Y	N	N/A	Proof of lawful use right	Y	N	N/A	Other (specify)		
Y	N	N/A	Required number of documentation copies	Y	N	N/A			



## PART E: DISCUSSION

The proposal as submitted for the purpose of a rezoning of a portion of the remainder of the farm 432 is not supported.

The applicant is advised to change the application from a rezoning application to a consent use application for the purpose of a Tourist Facility to accommodate the current use of a restaurant. The applicant is also advised to include the EV Charging Station as an ancillary use to the Consent Use Application for a Tourist Facility.

The application for Consent Use for Renewable Energy Structure on land zoned as Agricultural Zone I is correct according to the Zoning Scheme By-Law.

The necessary Power of Attorney needs to be issued to the company completing the final application.

As a active bond is registered on the property the application must include the Bondholder's Consent.

All other outstanding information as listed in the minutes of the need to be attended to with the submission of the final application.

## PART F: SUMMARY / WAY FORWARD

Minutes of the pre-application meeting need to form part of the final application.


Proof of payment of application fees needs to form part of the final application

Final application to be submitted to Department Corporate, Beaufort West Municipality for the attention of Mr. P. Strumpher.

Application will be advertised for a period of 8 weeks for any objections and public participation.

The applicant has the right to appeal the outcome of the application

OFFICIAL:

  
(FULL NAME)

PRE-APPLICANT:

(FULL NAME)

SIGNED:



SIGNED:

DATE:

31 October 2024.

DATE:





# BEAUFORT-WES/BEAUFORT WEST/BHOBHOFOLO

Directorate: Infrastructure Services / Direktooraat: Infrastruktuur Dienste  
ICandelo: IiNkonzo zeZiseko zoPhuhliso

Rig asseblief alle korrespondensie aan die Munisipale Bestuurder/Kindly address all correspondence to the  
Municipal Manager/Yonke imbalelwano mayithunyelwe kuMlawuli kaMasipala

**Verwysing**

Reference 12/3/2; 12/4/4/2  
Isalathiso

**Navrae**

Enquiries C.B.Wright  
Imibuzo

**Datum**

Date 31 October 2024  
Uhmla

Privaatsak/Private Bag 582

Faks/Fax 023-4151373

Tel 023-4148194

E-pos / E-mail [admin@beaufortwestmun.co.za](mailto:admin@beaufortwestmun.co.za)

Donkinstraat 112 Donkin Street

BEAUFORT-WES

BEAUFORT WEST

BOBHOFULO

6970

## PRE-APPLICATION INPUT: RENEWABLE ENERGY STRUCTURE & CHARGING STATION: REMAINDER OF FARM No. 432 BEAUFORT WEST MUNICIPAL AREA

### 1. PURPOSE

- 1.1 Please note that the purpose of the pre-application input is to ensure that the draft application, as received, is correct and complete and not to assess the merit of the application.

### 2. APPLICATION

- 2.1. Application is made, on Farm No. 432, Beaufort West for:

- a) A **Rezoning** in accordance with Section 15 (2) (a) of the Beaufort West Municipal Land Use Planning By-Law from Agricultural Zone I to Business Zone II to permit a Service Trade on a portion ( $\pm 241.8\text{m}^2$ ) of Farm no 432, Beaufort West Division.
- b) A **Consent Use** in accordance with Section 15 (2) (o) of the Beaufort West Municipal Land Use Planning By-Law to permit a Renewable Energy Structure on a portion ( $\pm 8250\text{m}^2$ ) of Farm no 432, Beaufort West Division, currently zoned Agricultural Zone I.

- 2.2. The development proposal entails constructing a charging facility for electric cars which is powered by renewable energy. The "charging station" will consist of a set of charging bays with associated infrastructure to provide electrical power to electric vehicles. Each charging bay will be equipped with charging equipment.

- 2.3. Although there are currently no separate land use description and/or associated zoning within the Beaufort West Municipal Integrated Zoning Scheme By-Law for EV Charging Stations, the proposed Business Zone II spot zoning does not appear to be the most appropriate zoning.

- 2.4. As an alternative the applicant could consider to exclude the Rezoning to Business Zone II from the application and to apply for a Consent Use to permit a Tourist Facility to accommodate the current Restaurant and including an ancillary use for the purpose of an EV Charging Station.

The application for a Consent Use for the purpose of a Renewable Energy Structure on land currently zoned as Agricultural Zone I is deemed correct.



- 2.5. It should be noted if a long-term lease is intended over a portion of the subject property, the application should clearly identify and map the area(s) which will form part of the intended long-term lease and/or amend the application accordingly to include an application for Subdivision (for Lease Purposes). Should a long-term lease be intended on the entire farm and in accordance with its current registered boundaries, an application for subdivision (for lease purposes) is not required.
- 2.6. It should further be noted that approval for the consent use (if given) will not be a permanent right but will be given for the duration/life span of the facility. Any renewable energy structure and associated infrastructure that has reached the end of its productive life or has been abandoned, including buildings, cables, and surfaced areas, must be removed by the owner. A renewable energy structure is considered abandoned when the structure fails to continuously operate for more than two years.

### **3. LOCUS STANDI (AUHTORITY TO BRING APPLICATION)**

- 3.1. Although the included Power of Attorney illustrates authority provided by the owners of the property (Quickstep 479 (Pty) Ltd.) to Zero Carban Charge (Pty) Ltd., to bring an application on their property, the further company resolution (by Zero Carban Charge (Pty) Ltd.) and the authority extending to the applicant, viz. CK Rumboll & Partners does not specify to which property/ properties such authority extends. Subsequently locus standi is not established. This will need to be addressed before the application can be considered as complete, by the Municipality.
- 3.2. The provided Title Deed (T49756/2018) indicates an active bond (B23800/2018) to the value of R11 000 000 registered against the property. However, the application does not include a bondholder's consent. This will need to be addressed before the application can be considered as complete, by the municipality.

### **4. ACCESS & TRAFFIC IMPACT**

- 4.1. The application must include comment by South African National Roads Agency Ltd. (SANRAL), specifically confirming:
- a) whether the existing access, proposed to be used for the development, is a legally authorised access and meet the standards applied by SANRAL,
  - b) whether a traffic impact assessment will be required for purposes of considering the potential impact on traffic, the N12. Such a potential traffic impact assessment may also impact on access dimensioning, internal site circulation and parking requirements.
  - c) whether there are any development parameters or controls which SANRAL would request to be included as conditions of approval for this application.

### **5. ENVIRONMENTAL AUTHORISATION**

- 5.1. The Department of Environmental Affairs and Development Planning (Environmental Management Inspectorate) should be contacted to determine whether any component of the proposed development will constitute an activity listed in terms of GN No R.326, 327, 325 and 324 as amended 7 April 2017, as promulgated under Chapter 5 of the National Environmental Management Act, 1998 (Act No. 107 of 1998).



## **6. DEVELOPMENT PARAMETERS, SERVITUDES AND SITE DEVELOPMENT PLAN**

- 6.1. The application, including the site development plan should clearly illustrate compliance with all the development parameters relating to “renewable energy structure” as contained within Schedule 2 of the Beaufort West Municipal Standards Zoning Scheme By-law, 2020.
- 6.2. Although the Site Development Plan, included within the application, may be considered as a general illustration of the intended development, the municipality will only be in a position to determine the final elements which should be incorporated within the Site Development Plan (as contemplated in Section 23(2) of Beaufort West Municipal Standard Zoning Scheme By-Law, 2020), after its assessment of the application.
- 6.3. In terms of Section 23(5) of the Beaufort West Municipal Standard Zoning Scheme By-Law, 2020, the detailed Site development plan, complying with such measures as may be required by the municipality (ito. Section 23(2), will need to be submitted to- and approved by the municipality prior to commencement of any development on the relevant land unit.

## **7. MOTIVATION**

- 7.1. The following aspects will need to be addressed within the Motivational Memorandum:
  - a) Confirmation whether the current access point along the N12 is authorised and developed within any applicable standards.
  - b) Confirmation that the existing Farm Stall is an authorised land use.
  - c) Motivation of the need for the proposed charging facility within the specific location. This should include (as a minimum) reference to a) traffic volumes along the N12 route, b) Electrical Vehicle uptake and usage, c) a survey of the nearest available EV charging stations within the standard range of an EV, to the proposed project locality, d) why not other existing filling station (or associated area within Beaufort West could accommodate the proposed EV Charging stations and e) why the approximately 144km distance between Beaufort West & De Rust may be considered a distance which would exceed EV driving ranges and thus the need for an intermediate charging station between these two towns.
  - d) Detailed engineering calculations to justify the extent of land and placement of the solar panels to enable the municipality to make a more informed decision on the appropriateness of the land development area, currently proposed.
  - e) Addressing the standard and requirements stipulated within the Western Cape Land Use Planning Guidelines for Rural Areas, March 2019, and /or provide sufficient justification why the guideline does not apply, under the site-specific circumstance applicable in this case. Although the said Guidelines need to be addressed in its entirety (as it may apply to this case), the following key principles underpin the Rural Areas Guidelines, and are considered relevant to this application:
    - Good quality and carefully sited development should be encouraged and located as far as possible in existing settlements (page 35).
    - All development in rural areas should be in keeping and in scale with its location, and sensitive to the character of the rural landscape and local distinctiveness (page 35).



- The cumulative effect of all ancillary and non-agricultural land uses should not detract from the rural character of the landscape and the primary agricultural activities (page 35).
- Rural activities must have a focus on sustainability and be in harmony with the surrounding agricultural landscape.
- Agricultural resources should be protected for increased agricultural production.
- Place-bound businesses (businesses ancillary to agriculture or serving rural needs) include farm stalls and farm shops, restaurants, and venue facilities (e.g. conferences and weddings) (page 56).
- Non-place-bound businesses (businesses not ancillary to agriculture or serving rural needs), should be located within urban areas and should only be considered in the rural area when exceptional cases and locational factors warrant such a land use. The obligation is on the applicant to illustrate why the land use cannot be accommodated in the urban area. Examples include a petrol station, hardware store, truck stop, transport contractors, wellness centres, frail care facilities and animal feed factory (page 41 & 57)
- With respect to Infrastructure. Where locations inside urban areas are impractical, agricultural areas peripheral to settlements are the preferred alternative (page 62).
- Where possible, installations should be located on previously disturbed terrain, or land of low biodiversity or agricultural value and should not interfere with, or impact negatively on existing or planned production areas, as well as agricultural infrastructure.

## **8. PUBLIC PARTICIPATION**

8.1. During the public participation process comment must also be obtained/included from:

- a) Department of Agriculture: Western Cape
- b) Western Cape Department of Transport and Public Works (DT&PW),
- c) South African National Roads Agency Ltd. (SANRAL),
- d) Department of Environmental Affairs and Development Planning, and
- e) Commission on the Restitution of Land Rights.

### **The process of submitting a final application are:**

- A copy of the minutes / letter, proof of payment and all relevant information must be attached to the final application.
- The final application must be submitted to the Senior Manager: Administration:Mr. P.Strumpher.

### **Address:**

**Email: [petrus@beaufortwestmun.co.za](mailto:petrus@beaufortwestmun.co.za)  
Donkin Street 112  
Mid Town  
BEAUFORT WEST  
6970**



- The final application must be signed by the owner.
- When the final application is submitted, 2 hard copies as well as a complete electronic copy on CD are required.
- Application will then be advertised for a period of 8 weeks for any objections and for Public Participation.
- If there are any objections, the applicant can appeal.
- Applicant can then send his appeal application to the Municipal Manager.

**The costs for the application are as follows:**

• Consent Use Fee – Renewable Energy Structure	R 819.10
• Consent Use Fee – Tourist Facility	R 819.10
• Advertising costs for public participation	<u>R 3 285.41</u>
• The total cost for the application	<u><b>R 4 923.61</b></u>

**Beaufort - West Bank Details:**

Bank: Nedbank  
 Account Holder: Beaufort West Municipality  
 Account Number: 10742 80318  
 Account Type: Current Account  
 Branch Code: 198765  
 Reference: Erf 432

For your further attention.

  
**CHRISTOPHER WRIGHT**  
**AUTHORIZED OFFICIAL**  
 /mg

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# **ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)**

for the management of activities relating to the protection of the natural environment during the construction  
operation and decommissioning phases of the

## **ELECTRIC VEHICLE CHARGING STATION AND SOLAR PV FACILITY**



**2023**

Compiled by:



## EnviroAfrica cc

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## 1. INTRODUCTION

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The main purpose of this Environmental Management Programme (EMP) is to prevent avoidable damage and/or minimise or mitigate unavoidable environmental damage associated with any construction, maintenance, or decommissioning/ demolition work where there is a risk of environmental damage and to enhance positive benefits of the project.

Section 28(1) of National Environmental Management Act (Act no 107 of 1998) (NEMA) places an absolute Duty of Care and provides that every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent the pollution or degradation from occurring, or, if the harm to the environment is authorised by law or cannot be avoided or stopped, to reduce and rectify the pollution or degradation.

The EMP forms part of the contractual obligations to which all contractors/employees involved in construction, maintenance, or decommissioning / demolition work must be committed. It serves as a guideline and baseline information document for the construction and operational of the proposed project and aims to comply with Section 24N of NEMA.

This EMP:

- identifies project activities that could cause environmental damage (risks) and provides a summary of actions required;
- identifies persons responsible for ensuring compliance with the EMP and provides their contact information;
- provides standard procedures to avoid and/or minimise the identified negative environmental impacts and to enhance the positive impact of the project on the environment;
- provides site and project specific rules and actions required, including a site plan/s showing:
  - areas where construction, maintenance, or demolition work may be carried out;
  - areas where any material or waste may be stored;
  - allowed access routes, parking and turning areas for construction or construction related vehicles;
- forms a written record of procedures, responsibilities, requirements and rules for Contractor/s, their staff and any other person who must comply with the EMP;
- provides a monitoring and auditing programme to track and record compliance and identify and respond to any potential or actual negative environmental impacts; and
- provides a monitoring programme to record any mitigation measures that are implemented;

The EMP is partly prescriptive (identifying specific people or organisations to undertake specific tasks, in order to ensure that impacts on the environment are minimised), but it is also an open-ended document in that information gained during the construction activities and/or monitoring of procedures on site could lead to changes in the EMP.

This EMP was compiled by Clinton Geyser who has a MSc. Degree in Environmental Management. He has been working as an Environmental Assessment Practitioner since 2009 and is currently employed at EnviroAfrica cc.

Qualifications:

- BSc. Earth Sciences, Majors in Geology and Geography and Environmental Management (1998 – 2000) and;
- BSc. (hons): Geography and Environmental Management (2001) and;
- MSc. Geography and Environmental Management (2002), all from the University of Johannesburg.

Expertise:



Clinton Geyser has over twelve years' experience in the environmental management field as an Environmental Assessment Practitioner and as an Environmental Control Officer, having worked on a variety of projects in the Western, Eastern and Northern Cape, and Free State Provinces.

EAPASA Registration number: 2021/3287

### **1.1 PURPOSE**

The purpose of the EMP is to give direction and guidance to all responsible parties, which are in turn expected to co-operate closely to minimise or avoid unnecessary environmental impacts or delays. The ECO will ensure compliance with the EMP (and other Environmental issues) and will visit the site on a regular basis during the construction phase, with additional visits at the professional, project-linked, discretion of the ECO or relevant authority.

This EMP binds all contractors, sub-contractors and other persons working on the site to adhere to the terms and conditions of the EMP throughout the construction activities of the project and any other construction activities associated with the construction of the upgrade of the site.

Any other Site-Specific additional activities decided and agreed upon at the "On Site Start-Up Meeting" must be included to form part of the EMP.

### **1.2 SCOPE**

This EMP addresses the construction phase (CEMP), operational phase (OEMP) and the decommissioning phase, and all activities associated with the project. In addition it will deal with all the requirements of regulation 19 (4) of the EIA regulations (R. 982, 04 December 2014) as well as any additional specific information requested by the Department of Forestry, Fisheries and the Environment (DFFE) pertaining to some developments.

Compliance to this EMP (which serves as a basis for all the phases of the project) will be monitored by the Environmental Control Officer (ECO). The Construction Engineer/Project Managers, the Contracting Agent(s) and the Client will be responsible for the implementation of this Environmental Management Plan.

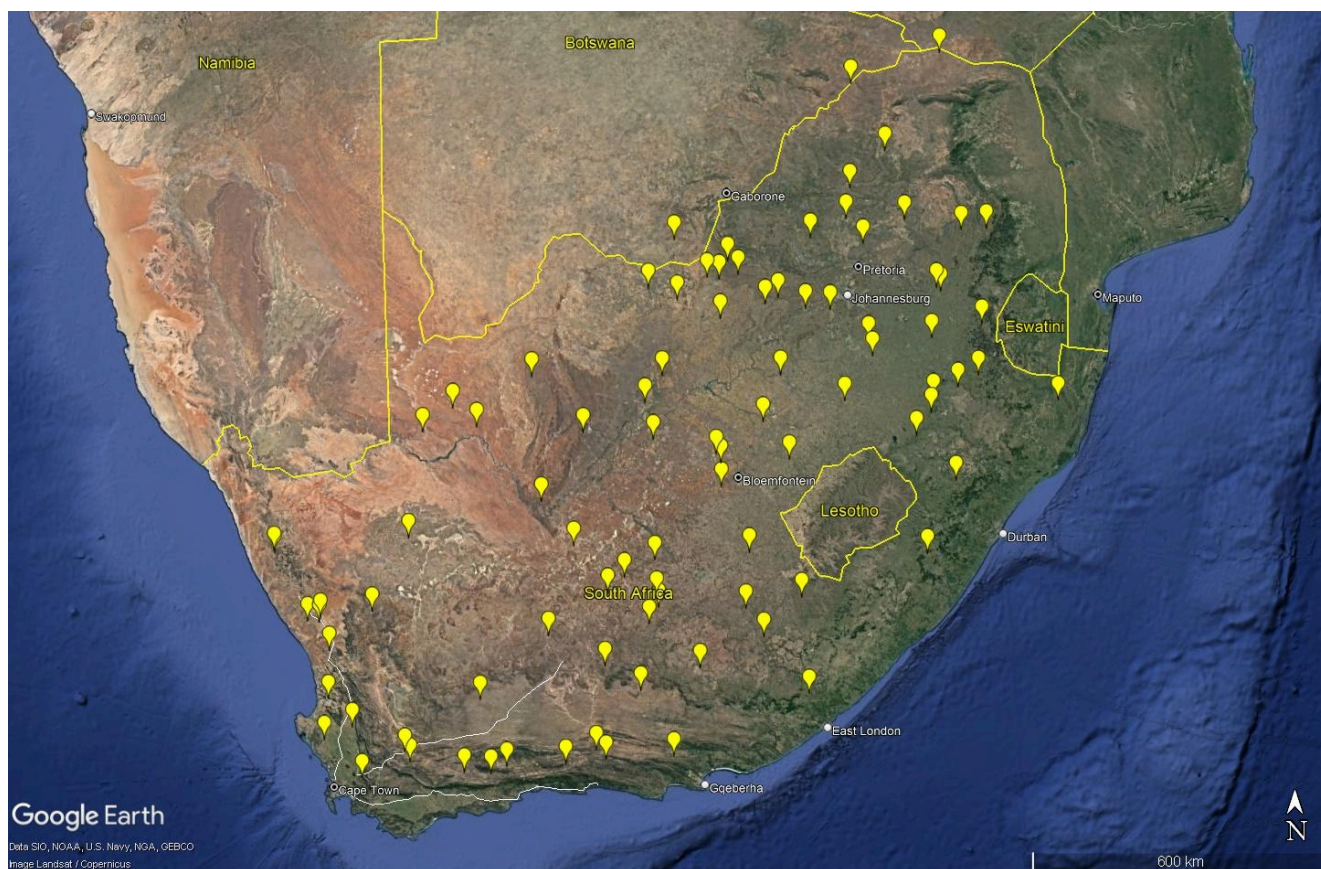
This EMP constitutes a generic EMP relevant to all Zero Carbon Charge car charging stations and associated solar PV plant and infrastructure. Each approved vehicle charging station within the Zero Carbon Charge network may require its own site-specific EMP and mitigation measures if required.

### **1.3 SITE LOCATION**

Zero Carbon Charge electric vehicle charging stations are proposed at regular intervals along major routes across the country.

Each site will have its own unique environmental characteristics, which will need to be taken into consideration for inclusion in any site-specific EMP and mitigation measures.





**Figure 1:** Google Earth image showing the current proposed Electric Vehicle charging station network (as of July 2023)

## **1.4 PROJECT DESCRIPTION**

Zero Carbon Charge (ZCC/Owner) are proposing a network of electric vehicle (EV) charging stations, located approximately every 150km along major routes across the country. Each charging station will be powered by an off-grid solar photovoltaic (PV) facility.

Each facility will include a farmstall with restrooms (existing or to be constructed), parking area and charging area. Photovoltaic cells will be used to charge the batteries. Each facility is no larger than 1ha in extent.

A Site Development Plan (SPP) will be developed for every site. This SDP will form the basis of construction and all critical information will be included on the SDP.

### **1.4.1 ACCESS**

Access will mainly be from secondary roads. Access from major routes will require approval from SANRAL or provincial roads authority.

## **1.5 THE RECEIVING ENVIRONMENT**

Each electric vehicle charging station and associated solar PV facility will have its own location and therefore its own unique environment, including, but not limited to, vegetation type, freshwater resources (rivers and wetlands), and/or heritage resources that will need to be considered during construction, operation and decommissioning of the facility.



If any specific environmental sensitivities or attributes are present on the site which require site specific impact management outcomes and impact management actions, not included in this generic EMP, to manage impacts, these specific impact management outcomes and impact management actions must be included in the site-specific EMP. These specific environmental attributes must be referenced spatially, and impact management outcomes and impact management actions must be provided.

### **1.6 ENVIRONMENTAL AUTHORISATION**

If a site required Environmental Authorisation in terms of the NEMA EIA Regulations, 2014, the Conditions of approval of the Environmental Authorisation (EA) and other relevant approvals/licences from other authorities will be included as Appendix 2 in the final EMP. The conditions of approval must be adhered to as part of the EMP.

EA (Environmental Authorisation) Conditions of Approval – Appendix 2.

In the Event of an EA not being required, an Applicability submission will be submitted to the department to verify that no listed activity is triggered, or special construction conditions may be applicable during construction.



## 2. DEFINITIONS AND ABBREVIATIONS:

### 2.1 DEFINITIONS

**Applicant:** The person or responsible person from an organization who applied for the proposed activity described in the Environmental Authorisation (if required).

**Audit (Site Completion):** Environmental Site Inspection and verification of construction activities to EMP

**Bund:** Enclosure under / around a storage facility to contain any spillage

**Batch plant:** a concrete or plaster mixing facility and associated equipment and materials.

**Construction:** means the period of the project during which the actual works are carried out, deemed to include site establishment, site preparation, the works, maintenance period and decommissioning.

**Construction phase:** The construction phase period of a cellular communications Construction site is defined as from the commencement of site establishment up to and including the practical site handover.

**Construction site:** means the area influenced and affected by the construction activities or under the control of the Contractor often referred to as “the Site”.

**Construction Supervisor:** The person responsible (appointed by the owner) to ensure that the construction is carried out to completion on time, within budget and that the Contractor fulfils his obligations in terms of the EMP.

**Contaminated water:** means water contaminated by the Contractor's activities, *e.g.* concrete water and runoff from plant/ personnel wash areas.

**Contractor:** the principal persons / company and all other sub-contractors involved in the construction of the project.

**Contractor's camp:** means the designated and suitably demarcated areas on the Site within which all site offices and staff facilities are situated and within which equipment will be stored, for instance, batching plant, crusher plant, sand washing plant, workshop, offices, rest areas, ablution areas, etc., whichever is applicable.

**Declaration of understanding:** Form that is signed by all contractors involved in the construction works of their understanding and acceptance of the EMP and site-specific additions to the EMP.

**Development site:** boundary and extent of development works and infrastructure.

**Environment:** means the surroundings within which humans exist and that are made up of:

- the land, water and atmosphere of the earth;
- micro-organisms, plant and animal life;
- any part of the combination of the above two bullets and the interrelationships between them;
- the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being

**Environmental Aspect:** Any element of any construction activity, product or services that can interact with the environment.

**Environmental Audit Report:** report done by the ECO and submitted by the Owner to the satisfaction of the Chief Directorate Environmental Affairs, within six months after construction has been completed and also after the site(s) has been rehabilitated.

**Environmental Control Officer:** The registered Environmental Scientist (*in terms of section 20(3) of the Natural Scientific Professions Act, 2003 (Act 27 of 2003)*) responsible for overseeing the environmental aspects of the Construction phase of the EMP.



**Environmental Completion Statement:** A report by the ECO to the relevant authorities stating completion of the project and compliance with the EMP and its conditions.

**Environmental Impact:** Any change to the environment, whether adverse or beneficial, wholly or partially resulting from any construction activity, product or services.

**Method statement:** A statement by the Contractor, describing the scope of intended construction works step-by-step, in order for the ECO and Construction Supervisor to understand the Contractors intentions and be able to comment on, so that they could assist with devising mitigating measures should it be necessary to avoid environmental impact.

**No-Go Area(s):** An area of such (environmental/aesthetical) importance that no person or activity are allowed within a designated boundary surrounding this area.

**Owner:** The owner, or dedicated person, responsible for the management of the facility

**Stop Works Order:** An order which can be issued either by the ECO or Construction Supervisor to the Contractor (or any sub-contractor) if serious environmental damage is about to happen or is happening as a result of construction activities. On receiving such an order the Contractor must immediately stop all activities (or planned activities) relevant to the specific issue until an environmentally friendly resolution has been approved by the ECO.

**Site:** The area and extent of the development works and infrastructure, including any areas off the main site on which works are to be carried out in order to allow the development to proceed successfully.

**SDP:** (Site Development Plan) A drawing indicating the position of components and restrictions on the construction of the site.

**Site meetings:** Periodic (weekly or monthly) meetings between the ECO, Construction Supervisor and Contractor to discuss construction activities that relate to the environment or any other environmental issues that might arise.

**Works:** The works to be executed in accordance with a contract.

**On-site start-up meeting:** a start-up meeting held on site, before any construction has begun to discuss EMP and determine site specific additions that will be included as the basis for the EMP.

**Potentially hazardous substance:** is a substance, which, in the reasonable opinion of the Engineer, can have a deleterious (detrimental) effect on the environment.

**Method statement:** is a written submission by the Contractor to the Engineer or relevant responsible person

**Reasonable:** means unless the context indicates otherwise, reasonable in the opinion of the Engineer/Project Leader after he has consulted with a person, not an employee of the client, suitably experienced in "environmental implementation plans" and "environmental management plans", both as defined in the Environmental Management Act (Act No 107, 1998).

**Solid waste:** means all solid waste, including construction debris, chemical waste, excess cement/concrete, wrapping materials, timber, tins and cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers).

**Precautionary principle:** means the basic principle, that when in doubt or having insufficient or unreliable information on which to base a decision, to then undertake actions that will have minimum risk.



## **2.2 ABBREVIATIONS**

CA	Competent Authority
CARA	Conservation of Agricultural Resources Act, 1983 (Act no. 43 of 1983)
CEMP	Construction phase Environmental Management Plan
DFFE	Department of Forestry, Fisheries and the Environment
ECO	Environmental Control Officer: - Must be a suitably qualified independent environmental consultant appointed to ensure compliance to the EMP
EMP	Environmental Management Plan or Programme
ESO	Environmental Site Officer - Must be a person with adequate environmental knowledge to understand and implement the EMP by conducting on site inspections determined by the ECO and the client.
ER	Engineers representative or Main contractors representative
EA	Environmental Authorisation (Record Of Decision) issued by relevant authority for the authorisation to commence construction under certain environmental compliances
MSDS	Material Safety Data Sheet(s)
NEMA	National Environmental Management Act, 1998 (Act no. 107 of 1998)
OEMP	Operational Environmental Management Plan
OSSM	On-site Start-up Meeting
PV	Photovoltaic
SAHRA	South African Heritage Resources Agency



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### 3. CONSTRUCTION PHASE EMP

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#### **3.1 STRUCTURE AND RESPONSIBILITY**

Implementation of the EMP and environmental control and management of the construction phase will be achieved through the responsibility structure set out below. The role players include the Owner (ZCC), the Construction Supervisor, the Environmental Control Officer and the Contractor. All role players must familiarize themselves with the prescriptions of the EMP.

##### **3.1.1 THE CLIENT / APPLICANT / OWNER**

Zero Carbon Charge (or the designated responsible person appointed by ZCC – further referred to as Owner) is responsible for:

- appointing a suitably experienced ECO, the Construction Supervisor and the Contractor for the duration of the construction contract, and
- ensuring that the Construction Supervisor and Contractor fulfil their obligations in terms of this EMP.

##### **3.1.2 THE CONSTRUCTION SUPERVISOR**

The Construction Supervisor is responsible to ensure that the construction is carried out to completion on time, within budget and that the Contractor fulfils his obligations in terms of the EMP. In addition, the Construction Supervisor and the ECO are expected to develop a close working relationship and to stay in contact with each other.

The responsibilities of the Construction Supervisor include:

- To issue site instructions to the Contractor.
- To serve as conduit for all communication between the ECO and the Contractor [The only exception is where the ECO or the Construction Supervisor needs to issue a “**STOP WORKS**” order on the contractor if serious environmental harm is about to happen or is happening as a result of construction activity. The “**STOP WORKS**” order must be confirmed by the other party as soon as reasonably possible].
- Discussing any problems that might lead to environmental damage with the ECO.
- When the ECO is not on site the Construction Supervisor will be responsible for the implementation of the EMP.

##### **3.1.3 THE CONTRACTOR**

The Contractor shall be responsible to:

- ensure that all sub-contractors, employees, suppliers, agents etc. are fully aware and adhere to the environmental conditions detailed in the EMP;
- liaise closely with the Construction Supervisor and the ECO;
- ensure that works on the site are conducted in an environmentally sensitive manner and in full accordance with the EMP;
- carry out instructions issued in the site instruction book;
- assist with solutions to environmental problems that may arise during the construction phase; and
- ensure that all “**No-Go**” areas are adequately fenced off.
- will report any deviation from the requirements of this EMP to the Principal Agent, and any pollution or environmental contaminant spill events.



- agrees to work stoppage and/or payment of penalties as required by this EMP and directed by the ECO/Construction Supervisor.
- agrees bear full costs for any work stoppage resulting from contravention of the requirements of this EMP, and/or the costs of remedying environmental damage resulting from their or their sub-contractors or employee's contravention of the requirements of this EMP.

NB: All contractors must sign the "Declaration of understanding" (Appendix 1 of this document) of this Environmental Management Plan before construction commences.

### **3.1.4 THE ENVIRONMENTAL CONTROL OFFICER (ECO)**

ECO will be responsible for overseeing the environmental aspects of the Construction phase and will work in close co-ordination with the Construction Supervisor.

#### **3.1.4.1 ECO qualifications**

The ECO must be independent and suitably qualified and must have a sound knowledge of the environment in which the activity will take place.

#### **3.1.4.2 ECO duties**

An ECO must be appointed for the duration of the construction phase (or as required by the EA). The ECO:

- will be primarily responsible for ensuring the implementation of the EMP and will perform regular site inspections/audits with the specific aim to ensure environmental conformance by the Contractor;
- to visit the site on a regular basis while construction is in progress Owner;
- will keep environmental records (including photographs) of the construction activities;
- must ensure that "No-Go" and "Open Space" areas are adequately protected and adhered to;
- must approve and be present during the demarcation of the necessary areas for storage of materials, ablutions, eating areas of contract workers etc;
- to conduct a start-up meeting before construction commences and will provide environmental training at the beginning of the project and will provide environmental awareness training throughout the life of the project;
- must be informed of site and technical meetings to be able to comment and report on environmental issues;
- will call for, and approve, method statements for construction activities that might pose an environmental impact and must ensure that method statements are approved before commencement of the work;
- must implement immediate mitigating action in the case of critical environmental impacts
- must deal with public complaints/queries regarding environmental issues;
- will record his findings and all environmental non-conformances in an environmental completion report (which will be forwarded to the Client and the Construction Supervisor);
- will conduct a closing down visit as soon as possible after completion of the Development;

#### **3.1.4.3 ECO Authority**

The ECO has the authority to stop works if there is a serious threat to or impact on, the environment as a direct cause of construction. However, this authority is limited only to emergency situations where immediate consultation with the Construction Supervisor is not possible.



- The ECO is to inform the client/owner and site representative of the reasons for the stoppage as soon as possible. A relevant reason should be supplied as soon as possible after stoppage of such works.
- Upon failure by the contractor or his employee to show adequate consideration to the environmental aspects of this contract i.e. wilful destruction of the environment, the ECO may recommend to the client/developer or site representative to have the contractor's representative or any employee(s) removed from the site or work suspended until the matter is remedied.
- No extension of time will be considered in the case of such suspensions and all costs will be borne by the contractor.

### **3.1.5 HEALTH AND SAFETY OFFICER:**

A Health and Safety (H&S) Officer for the project must be designated or appointed by the Contractor or Principal Agent, and his/her role is to support the successful implementation of the EMP through:

- Site evaluation on a regular basis.
- Identifying issues relating to day-to-day construction activities and that can have a detrimental effect on the environment.
- Subcontractor audits to ensure compliance.
- Assist in the direct implementation of the EMP.
- Ensure that the requirements of the EMP are communicated understood by personnel on site *via* induction sessions.
- Ensure that the contractors on site develop, implement and monitor the required H&S management functions.
- Evaluate the applicability and accuracy of the EMP and the method statements throughout the construction phase.
- Coordinate all statutory requirements including permit authorisation and license requirements.
- Conduct or have conducted a hazard analysis and take the necessary corrective action.
- Where it is not possible to remove any remaining hazards to inform employees thereof and what precautionary action is to be taken.
- Detail mitigation measures required to be taken, and the procedures for their implementation to the project manager.
- Representing H&S issues at the production meetings.
- Coordinate H&S training of personnel.
- Coordinating spill response personnel.
- The H&S officer shall inspect the integrity of the hazardous waste containers/bins/skips on a weekly basis.

#### **3.1.5.1 Health and Safety Officer qualifications**

The Health and Safety Officer must be independent and suitably qualified, with a sound knowledge of the Occupational Health & Safety Act (Act no. 85 of 1993) and must have experience of the implementation of the act with regards to the construction and environmental environments in which the activity will take place.

### **3.2 COMMENCEMENT OF WORKS**

The site project contractors must timeously receive a copy of the construction phase EMP (CEMP) and any other further additional information that pertains to site conditions/amendments or deviations from original site plan.

- This EMP must be included to form part of the Contractors site specification documentation.



- A copy of the EMP must be on site at all times and available for presentation to any authority requesting to see such document.

#### **NO WORK ON SITE MAY TAKE PLACE UNTIL:**

- The Declaration of Understanding/Environmental Contract is signed between the relevant parties.
- At least one week's written notice (or as specified in the EA) given to the Department before commencement of any construction activity (As per EA – if required).
- Start-Up Meeting has been held
- Site and No-Go areas have been identified **and demarcated**.
- Contractors are in possession of the EMP and other relevant documentation
- Contractors/Sub contractors have signed the Declaration of Understanding
- All mandatory site equipment is in place
- On Site Environmental Education & Awareness training session has taken place with all relevant construction personnel present.

NB: Work refers to: Camp Establishment, Earthmoving activities and any preliminary construction activities.

### **3.3 ISSUES OF CONCERN**

Any issues of concern that were identified must be addressed during the “Start-Up Meeting” and must be included in the On-Site Start-Up Report. Any other issues of concern identified by the ECO must also be addressed. Issues of Concern include but shall not be limited or restricted to the following:

- Site demarcation
- Demarcation and protection of any “no-go areas”.
- Establishment of temporary laydown areas.
- Waste management and disposal.
- Mandatory site equipment.
- Establishment of construction site compound.
- Above ground bulk fuel storage facilities;
- Ablution and Toilet Facilities.
- Refuse Management.
- Concrete works and batching plant facilities
- Soil erosion and sediment control.
- Firefighting equipment & emergency fire reaction plan.
- Rehabilitation

### **3.4 SITE SPECIFIC ARRANGEMENTS & CONSTRUCTION PROCEDURES**

Please note that all recommendations summarized in the Basic Assessment Report must be addressed and read as part of the site-specific arrangements & construction procedures which will include:

- General recommendations;
- Site specific mitigations;
- Conditions of approval of the Environmental Authorisation (if required).



### **3.4.1 ON-SITE START-UP MEETING**

The mandatory **Start-Up Meeting** must be conducted at least **14 days but not less than 5 working days** prior to commencement of any site/camp establishment, earthworks and/or construction activities and will relate to additional discussed information that must be complied with during the entire construction phase.

On-Site Start-Up Meeting points of discussion are:

- The Construction EMP and other relevant site documents
- Project to be discussed and all uncertainties are cleared
- Method statement/s to be discussed
- Road and construction area to be demarcated
- Materials stockpile and lay down areas to be demarcated
- Method of stockpiling to be discussed
- Firefighting procedures
- Mandatory firefighting equipment and fire preventative measures
- Solid waste removal intentions
- Placement, type and service of toilets to be agreed on
- Placement and type of rubbish bins and removal of rubbish to be agreed on
- Labour overnight camp (if required) to be demarcated and services agreed on
- Environmental Education and awareness training session to all contractors and onsite staff/labour.
- Location and establishment of concrete batching area.

### **3.4.2 START-UP MEETING PARTICIPANTS**

Minutes of the Start-Up Meeting will be condensed to a report format and circulated to all attendees of the above-named meeting for their perusal and comments. The Start-up Meeting report will form part of this EMP. If any discrepancies between the start-up report and the EMP arise then the EMP will take precedence until clarification on the discrepancy is clarified. If any discrepancies between the EMP and the EA then the EA will take precedence until clarification on the discrepancy is clarified.

Participants to the start-up meeting can include:

- ZCC Representative.
- Contractor / Contractor's Representative.
- Resident Engineer
- Site foreman.
- Environmental Control Officer.

**NB: It is the responsibility of the contractor to ensure that all sub- contractors, that work on the site during and after the civil's contract, are informed of the environmental conditions pertaining to the site.**

## **3.5 ENVIRONMENTAL- AND AWARENESS TRAINING**

### **3.5.1 ENVIRONMENTAL AWARENESS COURSE**

Environmental awareness training courses shall be run for all personnel on site. The ECO will be responsible for the initial awareness course which shall include all relevant management, the Construction Supervisor, the Contractor and all foremen. All attendees shall remain for the duration of the course.

The Contractor shall be responsible to ensure that all his personnel and subcontractors (if applicable) are informed and made aware of the environmental constraints and shall also supply the ECO with a monthly report indicating the number of employees used by him. If refresher courses are deemed necessary, for



instance, where personnel disregard the requirements of the EMP, the time lost and the cost of the course would be for the account of the Contractor.

### **3.5.2 SPECIFIC TRAINING**

All contractors and workers shall be informed about any special habitat, biodiversity feature, vegetation and/or rare plant species that might be present on the specific construction site (if applicable).

## **3.6 METHOD STATEMENTS**

Method statements from the contractor will be required for specific sensitive actions on request of the authorities, the Owner and/or ECO.

A method statement forms the base line information on which sensitive area work takes place and is a “live document” in that modifications are negotiated between the Contractor and ECO/Owner, as circumstances unfold.

All method statements will form part of the EMP documentation and are subject to all terms and conditions contained within the EMP main document.

These documents must be available to the authorities for inspection or on request.

A method statement describes the scope of the intended work in a step-by-step description in order for the ECO and Owner to understand the contractor's intentions. This will enable them to assist in devising any mitigation measures, which would minimize environmental impact during these tasks.

The Contractor must submit the method statement before any particular construction activity is due to start. Work may not commence until the ECO and Owner have approved the method statement.

Method statements need to be compiled by the contractor for approval by Owner and the ECO. The contractor must submit written method statements to Owner for the purposes of the environmental specification, a “Method Statement” is defined as a written submission by the contractor to Owner setting out the plant, materials, labour and method the contractor proposes using to carry out an activity, in such detail that Owner and the ECO is able to assess whether the contractor's proposal is in accordance with the specifications and/ or will produce results in accordance with specifications.

The method statement must cover applicable details with regard to:

- Construction procedures
- Materials and equipment to be used
- Getting the equipment to and from site
- How the equipment/ material will be moved while on site
- How and where material will be stored
- Location and establishment of concrete batching plant facility.
- The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material (of any potential hazardous material) that may occur
- Timing and location of activities
- Compliance/ non-compliance with the Specifications, and
- Any other information deemed necessary by the Owner and the ECO

The Contractor must abide by these approved method statements, and any activity covered by a method statement must not commence until Owner and the ECO has approved of such method Statement.

**NB: No work may commence or take place before the Method Statement has been approved by all relevant parties.**



List of possible Method statements include but shall not be limited or restricted to:

- Demarcation
- Demarcation and protection of “no-go areas”.
- A traffic management plan for the site access road.
- A transportation plan for the transport of larger components.
- A storm water management plan.
- An erosion management plan.
- Clearing of vegetation and topsoil removal
- Clearing and disposing of alien vegetation
- Stockpiling
- Temporary storage facilities
- Construction camp and site offices
- Fuel storage
- Labourer’s facilities
- Mandatory site equipment
- Waste control
- Cement mixing
- Construction vehicle maintenance
- Heavy earthmoving equipment
- Dust control
- Noise control
- Rehabilitation

### **3.6.1 ADDITIONAL METHOD STATEMENTS**

Any additional method statements (with regards to a specific aspect of construction) that may be required must be **submitted** and approved before commencement of the specific works and must be available at the site offices.



### **3.7 NON-COMPLIANCE**

Owner (on recommendation by the ECO) reserves the right at all times for the duration of this agreement to impose restrictions and associate penalties on the contractor with respect to the specific nature, timing and extent of construction activities on environmentally sensitive sites.

#### **3.7.1 CORRECTIVE ACTION INSTRUCTION**

The ECO may issue an onsite corrective action instruction to the site agent, or, by means of an entry into the Site Instruction Register for remedial work to be carried out to rectify any non-compliance that has been carried out within a reasonable agreeable time frame to carry out and complete the remedial work.

#### **3.7.2 WRITTEN WARNING**

In instances of non-compliance with the EMP by the contractor (or any of their employees) or sub-contractor/s (or any of their employees) that move on or off the site, the onsite ECO must issue a written warning indicating the non-conformance to the contractor.

If repeated instructions by the ECO to the site agent to respond to the corrective action instruction have not been carried out the ECO can issue a Written Warning notation instructing the site agent to timeously carry out the corrective measures as per the original non-compliance.

#### **3.7.3 PENALTY FINES**

In the event of the site agent negligence to respond and correct the noted non-compliance the ECO may in collaboration with the relevant parties recommend that a Penalty Fine be imposed on the contractor.

- The Owner, in consultation with the ECO must determine the amount of the penalty applicable in accordance with the Penalties for Non-Compliance Schedule of Tariffs.
- Such penalty amount must be in writing and presented to the contractor within seven (7) days of the written warning.
- Owner may recover penalties by deducting the fine from the offending contractor.
- The contractor will be responsible for all costs incurred where emergency procedures are implemented to deal with accidents impacting on the environment as well as the rehabilitation of such damage in conjunction with the ECO and site engineer.
- In serious cases, at the discretion of Owner and the Environmental Consultant/ECO, any multiple offences can be added together.

#### **3.7.4 STOP WORKS**

The ECO (after consultation with Environmental Consultant/Owner/Engineer) may also stop the works or part thereof until the situation is resolved; no extension of time is claimable by the contractor.

These penalties do not preclude any prosecution under any law or regulation.



### **3.8 CHANGES TO EMP**

Although care has been taken to address all known relevant environmental issues for the construction phase, it may become necessary to add or amend certain procedures or instructions to improve the efficiency of the Environmental Management Plan (EMP).

- Only those additions or amendments of this EMP that will either improve environmental protection or can be proved not to have any negative effect to the immediate and surrounding environment will be considered.
- Changes or deviations have to be motivated in writing by means of a Method Statement and the same procedures for a standard Method Statement have to be followed.
- Any additions or amendments must be submitted by the ECO to the Competent Authority (if so requested and required) after the ECO has consulted with the Environmental Consultant and Owner.
- No deviation from the contents of the EMP is allowed without the above-named prescribed procedures.

### **3.9 RECORD KEEPING**

All records relating to the implementation of this Environmental Management Plan must be kept together, be readily retrievable and available for scrutiny by any relevant authority. Records include the following:

- Declarations of understanding;
- ECO Checklist, audits and/or diary;
- Method Statements
- Environmental incident reports
- Photographs (must be taken before, during and immediately after construction as a visual reference);
- The Environmental completion statement.

These records must be available for scrutiny by any relevant authorities.

### **3.10 STANDARD MANAGEMENT PROCEDURES**

#### **3.10.1 ACCESS AND HAUL ROUTES**

The Contractor must control all access (vehicles and plant) to and from the construction site, including that of his suppliers so that they remain on the pre-approved designated routes. In addition, such vehicles and plant must be so routed and operated as to minimise disruption to regular users of the routes.

- Where heavy duty vehicles and construction plant are required, both the type of vehicles/machinery and the area/s these are to access shall be specified in a Method Statement and/or Traffic Management Plan.
- Access routes/haul roads will utilise only existing roads or tracks, unless such routes are not available or new routes are to be constructed as part of the project, in which case a Method Statement must be submitted for the construction of any new access/ haul roads (including temporary routes).
- No new roads or tracks may be created except where such routes are specifically approved by the ECO, in the EA or in this EMP.
- Any new access roads/haul roads must be designed so as to minimise erosion and must run across slopes and not directly up-hill.
- All vehicles and access to the site must remain within demarcated access routes and working areas on site.
- All reasonable measures must be implemented to minimize impacts on road users.



- On gravel or earth roads on site, the vehicles of the Contractor and his suppliers may not exceed a speed of 25 km/h.
- On public roads adjacent to the site, vehicles will adhere to municipal and provincial traffic regulations.
- Any temporary access routes must be rehabilitated at the end of the contract to the satisfaction of the ECO.
- All vehicles used for transportation or construction purpose must be limited to the designated routes to avoid unnecessary compaction of topsoil or to prevent disturbance of animals and plants outside of construction areas.
- The access roads must be covered with gravel to minimize dust pollution and the gravel must be extracted from a permitted quarry.

If so required by the owner of the land the following may also apply with regard to access and vehicular movement on site:

- All Contractors, subcontractors and staff shall be identified by clothing with company logos and be in possession of valid SA identity documents.
- Deliveries, removals etc. to be completed during normal working hours (unless otherwise agreed upon by the Construction Supervisor).
- No personnel shall stay permanently on site, unless permission to stay on site provided as part of the construction contract.
- Access route diversions must be clearly demarcated by orange twine/danger tape on steel posts or temporary fencing.
- The Contractor shall at his cost document the existing condition of all access roads prior to commencement.
- Should any damage occur to the access road as a result of the upgrade activities, the road will be rehabilitated to its original state with all costs borne by the contractor.

### **3.10.2 APPROPRIATE USE OF MACHINERY**

Contractor must at all times carefully consider what machinery is appropriate to the task while minimizing the extent of environmental damage.

- The contractor may not operate any machinery including a fuel driven compressor outside the demarcated area.
- All vehicles and equipment must be routinely inspected for fuel and oil leaks and kept in good working order and serviced regularly. Leaking equipment must be repaired immediately or removed from the Site. When servicing equipment, drip trays must be used to collect the waste oil and other lubricants. Drip trays must also be provided in construction areas for stationary plant (such as compressors) and for "parked" plant (such as scrapers, loaders, vehicles). Drip trays will be kept free of water that will float the oil to overspill. All drip trays / bunds to attain a 110% capacity of the plant fuel / oil capacity.
- Where practical, all maintenance of plant and machinery on Site must be performed in workshops. If it is necessary to do maintenance outside of a workshop area, the Contractor must obtain the approval of the Engineer and the ECO prior to commencing activities.
- Appropriate 4.5 kg (minimum requirement) dry powder SABS approved and service certified fire extinguisher must be a mandatory item on all vehicles working and moving on or off the construction site.
- The servicing, repairs and maintenance of all construction machinery must take place at the designated service and maintenance yard and not along the proposed new road construction route.



### **3.10.3 “No-Go” AREAS**

Specifications of the Environmental Authorisation (EA), the Environmental Management Plan (EMP) or the Start-Up Meeting (OSSM) can require that certain areas are to be considered as "No go" areas as a result of their environmental significance or proximity to environmental significant features.

- Any and all areas identified in site sensitivity overlays as “no-go” areas are to be considered as such, and appropriately demarcated as such.
- All areas of natural vegetation and streams/rivers outside of the development footprint should be considered “no-go” areas.
- A Method Statement is to be submitted to the ECO by the Contractor, detailing the method of demarcation for protection of such conservation areas.
- No-Go areas are out of bounds to the Contractor and his staff, sub-contractors and their staff or suppliers and their staff or any other person involved in the project, without the written permission specified by the ECO.
- The Contractor must ensure that, insofar as he has the authority, no person, machinery, equipment or material enters the designated "No Go" areas at any time.
- All contractors must be made aware of the importance of these features and the consequences of non-compliance. All staff are to be made aware of the “no – go” areas in the induction and environmental awareness training.
- All private property/farms outside of the works area are considered “no-go” areas, unless permission has been received from the ECO and written permission has been received from the land owner.
- Natural vegetation outside of the development area will be considered no-go areas, unless for the purpose of alien vegetation clearing.

### **3.10.4 RESTRICTION OF WORKING AREAS**

The approved layout plans will be used to establish the site demarcation (footprint). All relevant parties responsible for the day-to-day activities on the site will be present and made aware of the implication of the site demarcation. They include the:

- Environmental Consultant: EnviroAfrica
- Principle Agent
- Main Contractor: Project Site Manager
- Sub-contractor: Project contractor
- ECO: Environmental Control Officer

The proposed site will be demarcated prior to the commencement of any construction whatsoever, this includes site establishment, the moving of construction material or any other items onto the site, etc.

- The site will be demarcated with appropriate dropper poles. A single strand of orange baler twine is to be attached to the dropper poles to indicate boundaries and no-go areas for site personnel and vehicular movement. (Alternative fencing may be decided upon dependent on-site requirements). Other demarcation measures can be used if approved by the ECO.
- The construction area i.e. road, stockpile areas and development footprint etc. must be demarcated and fenced off with dropper poles and orange baler twine approximately 1m high is considered adequate. The demarcation will be agreed on during the start-up meeting.
- All fencing and fence placement / positioning must be approved by the ECO on site.
- Work areas and access routes must be clearly demarcated to minimise environmental impact.
- In the event that sensitive features are threatened by construction activities, temporary fencing off of these areas (for individual areas such as trees or rocks) or the construction area (when working in a mainly natural environment) is recommended.



- NB: Also note the requirements discussed under the following paragraphs: 3.10.5; 3.10.2; 3.10.8; 3.10.6; 3.10.7.
- The Contractor must maintain in good order all demarcation, fencing and barriers for the duration of construction activities, or as otherwise instructed.
- Demarcation may not be moved, re-located or altered or changed without the approval of the ECO.
- Any temporary fencing removed for the execution of any portion of the works is to be reinstated by the Contractor as soon as practicable.
- The Contractor at the end of the contract must remove all demarcation, fencing or barriers not forming part of the final works on Site.

### **3.10.5 PROTECTION OF NATURAL VEGETATION**

Habitat fragmentation is usually defined as a landscape-scale process involving both habitat loss and the breaking apart of habitat. Habitat loss has large, consistently negative effects on biodiversity. Habitat fragmentation per se has much weaker effects on biodiversity, but could be just as negative. As such the construction activities must endeavour to minimise its impact on any remaining natural features and natural corridors.

- All significant biodiversity features identified during the environmental assessment stage, must be mapped and identified as “No-Go” areas on the site plans and protected measures must be installed (demarcated). Only alien vegetation clearing may take place within the natural areas outside the demarcated works area;
- Except to the extent necessary for the carrying out of the works, no natural indigenous flora may be removed, damaged or disturbed;
- Trapping, poisoning and/or shooting of animals is strictly forbidden. No domestic pets or livestock are permitted on Site;
- Where the use of herbicides, pesticides and other poisonous substances are to be used, the Contractor must submit a Method Statement;
- The Contractor may not deface, paint, damage or mark any natural features, if these should occur (e.g. trees, rock formations, buildings, etc.) situated in or around the Site for survey or other purposes unless agreed beforehand with the Engineer and the ECO. Any features affected by the Contractor in contravention of this clause must be restored/rehabilitated to the satisfaction of the Engineer and the ECO.
- All incidents of harm to any animal or natural vegetation (apart from the agreed upon areas) must be reported to the ECO.

### **3.10.6 PROTECTION OF FAUNA AND AVI-FAUNA**

Trapping, poisoning and/or killing of animals and birds is strictly forbidden. No domestic pets or livestock are permitted on Site. Many slow-moving animals, local amphibian and other species follow instinctive movements along roadside corridors where they travel from place to place.

- Every effort must be implemented on a daily on-going basis by the contractor to ensure that the construction areas have been checked for any animals and to ensure their removal and protection from direct and in-direct impacts during the construction activities.
- Any open trenches must not be left open for extended periods of time. If trenches are to be left open for extended periods, these should be fenced/secured to prevent livestock and other animals from falling into trenches.
- The removal of fauna from the site must be done in accordance with the requirements of the Nature Conservation Ordinance regulating these activities.
- Environmental corridors and “No-Go” areas must be demarcated and protected.



### **3.10.7 CLEARING OF VEGETATION, STRIPPING AND CONSERVATION OF TOPSOIL**

The contractor shall take all reasonable steps to minimise the impact of his activities on the environment. If natural vegetation have to be removed for construction purposes, the natural vegetation shall be rescued, re-used (e.g. stabilizing the area after construction or re-vegetating other impacted areas) in such a way that it enhances the remaining natural veld. By the same principle topsoil (which contains the remaining natural seed store as well as possibly many bulb species) must be carefully removed and stored or re-used for rehabilitation or impacted areas in the immediate vicinity.

Vegetation clearing:

- A Method Statement must be submitted detailing the methods to be used for vegetation clearing.
- All cleared areas must be stabilised as soon as possible.
- Burning of cleared vegetation on site is prohibited.
- The burying of cleared vegetation or use as part of backfill or landscape shaping is prohibited unless written approval is obtained from the ECO.
- Cleared vegetation may be used for mulch or slope stabilisation of the Site.
- Should bulk vegetation be removed from the designated working areas (footprint area) then tall vegetation shall first be removed through brush cutting and chipping of larger shrub material; this may be added to the topsoil material stockpiles as mulch.
- Unless otherwise agreed upon, only indigenous plant material shall be used for this purpose.

Topsoil removal

- Prior to any activities within the demarcated work areas, topsoil material shall be removed to a depth of 300 mm or deeper if specified by the engineer in consultation with the ECO, and stockpiled in a designated area for use in rehabilitation of the site post construction. Only sufficient topsoil is to be stored for rehabilitation purposed.
- Topsoil from the still relatively natural area (the top 15 -20 cm) should be removed and be used for rehabilitation after construction on site or in the immediate vicinity of the site.
- Any area where the topsoil will be impacted by construction activities, including the construction offices and storage areas, must have the topsoil stripped and removed and covered with herbaceous vegetation (other than alien species), overlying grass and other fine organic matter and stockpiled for subsequent use in rehabilitation.
- Topsoil storage areas must be convex and should not exceed 2 m in height. The Contractor must ensure that the material does not blow or wash away. The use of a bund wall should be considered, if appropriate, for the storage of the topsoil.
- The topsoil should be stored outside the 1:50 flood level within demarcated area.
- Topsoil shall be kept separate from overburden and shall not be used for building or maintenance of access roads.
- Topsoil must be treated with care, must not be buried or in any other way be rendered unsuitable for further use (e.g. by mixing with spoil) and precautions must be taken to prevent unnecessary handling and compaction.
- In particular, topsoil must not be subject to compaction greater than 1 500 kg/m<sup>2</sup> and must not be pushed by a bulldozer for more than 50m. Trucks may not be driven over the stockpiles.
- Topsoil from different soil types must be stockpiled separately and replaced in the same areas from which they were taken if this proves to be the case. Specific attention should be given to the areas that may house rare and threatened species.
- Topsoil areas must be demarcated in order to ensure the safekeeping of topsoil and to separate different stockpile types.



### **3.10.8 EROSION AND SEDIMENTATION CONTROL**

The Contractor must take appropriate on-going and active measures to prevent erosion resulting from his own construction activities and operations as well as storm water control measures to the satisfaction of the ECO. During construction the Contractor must protect areas susceptible to erosion by installing all the necessary temporary and permanent drainage works as soon as possible.

In order to achieve erosion and sediment control, the following are applicable to all sites:

- No new development, without written authority approval, will be allowed on slopes greater than 12% (CARA, regulation 3). If applicable terraces will be made in accordance with agricultural regulations.
- Install erosion and sediment controls before work starts and maintain these features throughout the construction and operational phases (as applicable).
- Leave as much vegetation as possible.
- Install temporary fences to define “No Go” areas in those areas that are not to be disturbed.
- Divert run-off from upslope away from the site, but ensure that it does not cause downstream erosion. For example, dig drainage channels (catch drains sized to accommodate the upslope catchment).
- Install sediment controls down slope of the site to catch sediment (if applicable).
- Inspect and maintain erosion and sediment controls regularly.
- Limit vehicle movement to the site and control access points. Clearly mark such access points and inform all suppliers.
- Save and re-use topsoil during revegetation. Never store topsoil around trees as this may kill them. Spread the topsoil back when the work is finished and revegetate the site as soon as possible to control erosion. Remove the sediment and erosion controls only after revegetation was successfully implemented.
- Store all stockpiles and building materials behind sediment fences. Cover them with plastic to prevent erosion by wind.
- It is illegal to discharge water into a public stream if the quality does not conform to the required health or water standards. Other measures as may be necessary must be taken to prevent the surface water from being concentrated in streams and from scouring the slopes, banks or other areas. Any potential hazardous fluids / materials must be protected from the rain to prevent them being washed into storm water channels. All such measures must be discussed with and approved by the ECO.
- If required, build a dam below any works areas. Surround the wash-out area with a sediment fence that slows down the water flow. Filter or settle-out all water pumped off the site. The water must be clear before it enters the storm water system or creeks. Gypsum can be applied to muddy (turbid) water to help clay particles settle.
- Fill in all trenches immediately after services have been laid.
- Work must be done during the dry season, low flow conditions.
- Downstream placement of sediment containing measures.
- Due diligence to limit sediments washing down the river.
- Vegetation of ramps and shoulders.

### **3.10.9 ALIEN INVASIVE MANAGEMENT PLAN**

In accordance with Regulation 15 and 16 of the Conservation of Agricultural Resources Act, 1983 (Act no. 43 of 1983) (CARA) as amended, all listed alien invasive plant species must be managed on any land in SA. As such an alien invasive management plan may be required to be implemented during construction and operation phase of the project. If such a plan is required, it must include mitigation measures to reduce the invasion of alien species and ensure that the removal of alien species is undertaken. Wetlands and rivers are especially susceptible to many of species.

- In accordance with CARA all identified alien invasive plants encountered on the property and its immediate surroundings must be controlled.



- All invasive alien plants must be cleared from the site and remainder of the landowner's property).
- An invasive alien plant monitoring, eradication and control plan should be compiled to effectively remove all infestations on the property. This will allow for a degree of natural passive restoration of natural vegetation.
- All alien invasive species must be identified and removed from each site and its immediate surroundings. This is especially true for any remaining natural corridor on site.
- Any exotic trees currently growing in riparian zones on site should be cut and the stumps treated with herbicide to prevent re-growth;
- No vegetation may be buried or burned on site.
- Where the use of herbicides and other poisonous substances are to be used, the Contractor must submit a Method Statement.

The invader status of the various invasive alien species in South Africa is described in accordance with Regulation 15 and 16 of the Conservation of Agricultural Resources Act, 1983 (Act no. 43 of 1983) (CARA) as amended (the 3 categories and its control are summarised underneath).

#### Category 1 (Declared Weed)

- Prohibited on any land or water surface in South Africa
- Must be controlled or eradicated (except in biological control reserves).

#### Category 2 (Declared Invader – commercial value)

- Allowed only in demarcated areas under controlled conditions
- Outside of controlled areas invaders must be controlled or eradicated where possible
- Prohibited within 30 m off the 1:50 year flood line of watercourses or wetlands unless authorization has been obtained

#### Category 3 (Plant Invaders – ornamental value)

- Allowed only in areas where they were already in existence with the promulgation of the regulations.
- Prohibited within 30 m of the 1:50 year flood line of watercourses or wetlands unless authorization has been obtained.
- All reasonable steps must be taken to ensure that they do not spread.
- Propagative materials of these plants (e.g. seeds or cuttings) may no longer be planted, propagated, imported, bought, sold or traded in any way.

### **3.10.10 PROTECTION OF ARCHAEOLOGICAL & PALEONTOLOGICAL REMAINS**

Archaeological remains are ancient man-made objects, structures, or ancient burials that have been preserved on the earth's surface, underground, or underwater and serve as the historical sources that make it possible to reconstruct the past history of human society, including mankind's prehistory. Palaeontology, on the other hand, is the study of prehistoric life. It includes the study of fossils to determine organisms' evolution and interactions with each other and their environments (their paleoecology). Palaeontology lays on the border between biology and geology, and shares with archaeology a border that is difficult to define.

- Basic archaeological remains include work tools, weapons, domestic utensils, clothing, and ornaments; settlements including campsites, fortified and unfortified settlements, and separate dwellings; ancient fortifications; the remains of ancient hydraulic structures; ancient agricultural fields; roads; mining pits and workshops; ancient burial grounds and various burial and religious structures (stelae, stone figurines, stone fish monoliths (vishaps), menhirs, cromlechs, dolmens, sanctuaries); drawings and inscriptions carved into individual stones and cliffs; and architectural monuments. Archaeological remains also include ancient ships and their cargoes that sank in rivers and seas and settlements that came to be underwater as a result of shifts in the earth's crust



- Should any archaeological remains or palaeontological resources (including but not limited to fossil bones and fossil shells, coins, indigenous and/or colonial ceramics, any articles of value or antiquity, stone artefacts and bone remains, structures and other built features, rock art and rock engravings) are discovered during construction they must immediately be reported to SAHRA and must not be disturbed further until the necessary approval has been obtained from SAHRA.
- Should any human remains/burial or archaeological material be disturbed, exposed or uncovered during construction, these should immediately be reported to the South African Heritage Resources Agency (021 462 4502). The ECO and ER are also to be informed. An archaeologist will be required to remove the remains at the expense of the developer
- Note that the Contractor may not, without a permit issued by the responsible heritage resource authority; destroy, damage, excavate, alter, deface or otherwise disturb any archaeological site or archaeological material. The latter is a criminal offence under the Heritage Resources Act.
- A Fossil Find Procedure must be implemented, should any fossil material be discovered during construction. The fossil material must be safeguarded (preferably *in situ*) and the Environmental Control Officer (ECO) should alert SAHRA as soon as possible so that appropriate mitigation (*e. g.* recording, sampling, or collection) can be taken by a professional palaeontologist.



**3.10.11 STORAGE OF CONSTRUCTION MATERIAL AND STOCKPILING**

The Contractor must provide a method statement (for approval by the ECO) of the construction activities which will indicate:

- the type and quantity of material to be stored;
- whether any oil contaminated/containing equipment will be stored;
- how (including what type of vehicles will be required) it will deliver the material on site at the necessary storage area; and
- whether there is any risk of spill or runoff of any building materials or chemicals and how this is to be mitigated.
- No material is to be stored or stockpiled within any riparian zones or areas of natural vegetation. Disturbed areas, such as the cultivated fields and soccer pitch area, should be used for stockpiling.

In addition:

- The Contractor must ensure that any delivery drivers are informed of all procedures and restrictions (including "no go" areas) required to comply with the Specifications. The Contractor must ensure that these delivery drivers are supervised during off-loading, by someone with an adequate understanding of the requirements of the Specifications.
- All manufactured and/or imported material must be stored within the demarcated area, and, if so required, out of the rain. All lay down areas outside of the construction camp must be subject to the Engineer and the ECO's approval in such a way as not to cause a nuisance or environmental damage.
- All building materials are to be prepared at the batching plant, to enable the effects of cement and other substances, and the resulting effluent to be more easily managed.
- It is essential that any imported material i.e. base material for road works, building sand, bedding base sand for pipe / cable lines etc. must be screened and of which the origins must be identified prior to arriving at the receiving environment, this must be approved by the Engineer / ECO.
- Special care must be taken to prevent bringing in materials contaminated with seed of Invasive Alien Plants. Contractors shall not import construction materials such as sand, gravel or fill contaminated with seed of Invasive Alien Plants, or quarried from areas surrounded by Invasive Alien plant species such as Port Jackson or Rooikrans.
- The Contractor must negotiate appropriate space on for this purpose on an area away from natural vegetation and any wetland habitat with the ECO.
- The Contractor must ensure that all staff, contractors and subcontractors are aware of and keep material within these designated storage areas. The Construction Supervisor shall ensure that the consultant team is familiar with same.
- Contractors will not be allowed to store new construction material on the sides of the access road, or within natural vegetation or next to the existing access road.
- Stockpiling of gravel, cut, fill or any other material including spoil should only be allowed in degraded areas or areas within the development footprint.
- Any area used for stockpiling and not covered by building development must be returned to at least the state they were in before stockpiling and it must be ensured that the erosion potential of these areas is not increased.
- The Contractor must ensure that the material does not blow or wash away (especially into riparian zones) or mix with each other. If the stockpiled material is in danger of being washed or blown away, the Contractor must cover it with a suitable material, such as hessian, netting or plastic.
- Also refer to the traffic- and transportation management plans and their requirements.



### **3.10.12 OIL STORAGE AND MANAGEMENT**

An important potential environmental impact is oil spills from any oil filled equipment and machinery that may occur during transportation, operation or storage. The following conditions shall apply:

- Vehicles must be checked for oil leaks prior to going on site
- Care should be taken to prevent any potential oil spillage during upgrading activities.
- Sufficient measures should be put in place to ensure that any potential oil spills are mitigated.
- An oil spill kit should be available on site at all times during the construction activities;
- Oil containment facilities should be provided for any oil filled equipment onsite;
- All oil spills must be reported to the ECO within 24 hours, indicating the containment and rehabilitation measures implemented.

### **3.10.13 STORING OF PETROLEUM PRODUCTS**

Petroleum fuels contain harmful substances known to cause health problems and can easily have adverse effects on water quality, and the environment. Petroleum spills can move rapidly into the soil and quickly contaminate drinking water. In order to prevent pollution, it is important to, use proper methods when handling, using, and storing diesel fuel, gasoline, kerosene, or other petroleum products.

The South African National Standards pertaining to the installation of a storage tank include:

- SANS 310, which requires that an aboveground storage tank be of sufficient structural strength, based on sound engineering practices, to withstand normal operations and use;
- SANS 1668, for fibre-reinforced plastic tanks for the underground storage of petroleum products;
- SANS 10089-1, which deals with the storage and distribution of petroleum products in aboveground bulk installations; and
- SANS 1535, for glass- reinforced polyester-coated steel tanks, for the underground storage of hydrocarbons and oxygenated solvents, which are intended to be buried horizontally.

#### **Above ground fuel storage tanks**

Any fuel storage proposals of >200litres must be cleared by the ECO before any storage or stockpiling takes place. If the contractor proposes to install above-ground fuel storage tanks for use during the construction phase of the project, the following basic requirements must be adhered to:

- A Method Statement, explaining the method of storage and mitigation measures to prevent spillages must be submitted to the ECO and accepted prior to the installation of such a fuel storage facility (please note that storage of any dangerous goods/fuel of 30 cubic meters or more require environmental authorisation).
- The fuel tank must be placed within a completely sealed concrete bund (containment structure) which must be able to contain at least 110% of the total capacity of the fuel tank.
- The bunded area should be built to be at least a third wider (on all sides) than the base of the fuel tank in order to maximise its capability to contain spillages and leakages.
- The fuel distributor must also be located within bunded area to better prevent against accidental spillages during refuelling.
- In addition, drip trays are to be used during refuelling.
- All vehicles, equipment, fuel and petroleum services and containers must be maintained in a good condition that prevents leakage and possible contamination of soil or water supplies.
- Fuel storage areas must comply with general fire safety requirements.
- Fuel storage areas must be at least 100m from any watercourses.

#### **Storing of smaller quantities of fuel or oil**



Any fuel storage proposals must be cleared by the ECO before any storage or stockpiling takes place. If the contractor proposes to use only small fuel storage facilities (< 200 litres) the following basic requirements must be adhered to:

- Fuels and oils must be safely located out of harm's way from the elements and safety and fire prevention must be strictly adhered to.
- All fuel oil containers must be placed within suitable drip trays to prevent accidental spillage of oils and fuels.
- A suitable leak proof container for the storage of oiled equipment (filters, drip tray contents and oil changes etc.) must be established.
- All spills are to be recorded in the ECO diary.

#### **3.10.14      STORING OF HAZARDOUS SUBSTANCES**

If potentially hazardous substances are to be stored on site, the Contractor must submit a Method Statement detailing the substances and/or materials to be used, together with the storage, handling and disposal procedures of the materials to the ECO.

- Hazardous materials must be stored under lock and key in designated areas with properly displayed and visible warning signs.
- No works related to the submitted Method Statement may commence until the Method Statement has been studied and approved in writing.
- An effective monitoring system to detect any leakage or spillage of all hazardous substances during their transportation, handling, use and storage must be implemented. This must include precautionary measures to limit the possibility of oil and other toxic liquids from entering the soil or storm water systems.
- Measures to protect hydrological features such as streams, rivers, pans, wetlands, dams and their catchments, and other environmental sensitive areas from construction impacts including the direct or indirect spillage of pollutants must be implemented.
- **Paints:** - No paint products may be disposed of on Site and brush/roller wash facilities must be established to the satisfaction of the Engineer and the ECO. Oil based paints and chemical additives and cleaners such as thinners and turpentine must be strictly controlled. A Method Statement detailing the paint management procedures is required.
- **Hazardous building materials:** -Hazardous building materials must be identified and dealt with in accordance with the relevant safety and health legislation. All such material must be separated on Site and disposed off at appropriate licensed disposal sites. The Contractor must supply the ECO with a certificate of disposal.

#### **3.10.15      USE OF CEMENT OR CONCRETE**

The Contractor is advised that cement and concrete are highly hazardous to the natural environment because of the high pH levels of the material, and the chemicals contained therein. Wash-out water with high pH is the number one environmental issue for the ready-mix concrete industry. The alkalinity levels of wash water can be as high as pH 12, which is toxic to fish and other aquatic life.

The Site Supervisor or Contractor must indicate the need for and the proposed location of concrete batching plants which includes the location of cement stores, sand and aggregate stockpile areas. A Method Statement indicating the layout, type of concrete batching preparation (dry or wet mix). The site agent must indicate on the Method Statement proposed total volume of concrete that is needed for the completion of the entire project.

#### **Concrete/cement mixing:**



- Concrete and cement may only be mixed on existing hard surfaced areas, or edged mortar boards or a suitable container. Concrete may not be mixed or stored directly on the ground under any circumstances.
- The visible remains of the batch and concrete, either solid, or from washings, must be physically removed immediately and disposed of as hazardous waste.
- Washing of equipment shall be done in a container to prevent any runoff of contaminated washing water.
- Extreme care must be taken to limit the amount of water contaminated by washing equipment. Water from concrete washing can be re-used in concrete mixes or must be stored in drums, then removed from the site and disposed of at a licensed municipal dump site.

### **Concrete batching areas**

The following procedures must be implemented to control waste-water run-off from concrete batching area locations:

- The location of concrete batching areas must be approved by the ECO (if possible/appropriate, the use of ready-mix concrete is preferred).
- Concrete batching areas must have suitable bunding methods in place to ensure minimal waste water run-off occurs during batching operations.
- Contaminated water may not enter a natural or man-made (e.g. trench / sloop or dam) water system. Preventative measures include establishing sumps from where contaminated water can be either treated in situ or removed to an appropriate waste site.
- Dry mixing batching areas to be carefully placed in consultation with the ECO.
- Cement bags are to be stored securely out of harm's way from the elements (wind and rain). Bags have to be covered and placed on plastic sheeting. Used cement bags must be disposed of on a regular basis via the solid waste management system, and must not be used for any other purpose.
- Sand and stone used for cement or concrete batching must be stored on plastic layers (or on ECO approved disturbed areas) in order to prevent contamination of the natural environment.
- Cleaning of equipment and flushing of mixers must not result in pollution of the surrounding environment. All wastewater resulting from batching of concrete must be disposed of *via* the contaminated water management procedure.
- Excess or spilled concrete must be confined within the works area and all visible remains of excess concrete must be physically removed and disposed of on completion of cement work. Washing the remains into the ground is not acceptable. All excess aggregate must also be removed.
- Wash-down areas must be confined to within the concrete batching areas only.

### **3.10.16 FIRE FIGHTING**

Adequate fire fighting equipment according to the fire hazard during the construction period must be available on site and in good working order (at least one type ABC (all purpose) minimum 4.5 kg extinguisher and 3 fire beaters per working area). The persons on site must be trained in the use of such equipment.

- The main contractor must provide a list of all authorities involved in fire fighting in the region. This list must include emergency contact numbers and must be visible at the site office.
- Welding, gas cutting or cutting of metal will only be permitted inside the working areas.
- The Contractor must pay the costs incurred to organizations called to put out any fires started by him. The Contractor must also pay any costs incurred to reinstate burnt areas as deemed necessary by the land owner.
- It is required that contractors have available the emergency telephone numbers of the nearest local Fire Fighting Station and that an emergency fire fighting re-action plan has been drawn up with on site workers and the resident land-owner / farmer.



- No on site fires are permitted.
- No firewood may be collected on site or from the surrounding natural area.

### **3.10.17 EMERGENCY PROCEDURES**

It is the responsibility of the contractor to assess the potential risks to the environment as a result of the project. As such, the contractor must have the necessary standard emergency operating procedures in place to deal with any potential emergency such as oil spills or fire.

- All staff should be made aware of the necessary basic emergency procedures in the event of an emergency including injuries to staff. The appropriate equipment and identified personnel to deal with such basic emergencies should be available on site.
- All staff on site should wear hi-viz vests when on site.
- **Fire:** The Contractor must advise the relevant authority of a fire as soon as one starts and must not wait until he can no longer control it. The Contractor must ensure that his employees are aware of the procedure to be followed in the event of a fire.
- **Hazardous Material Spills:** The Contractor must ensure that his employees are aware of the procedure to be followed for dealing with spills and leaks, which must include notifying the Engineer, the ECO and the relevant authorities. Treatment and remediation of the spill areas must be undertaken to the reasonable satisfaction of the ECO and Local Authority.

### **3.10.18 SOLID WASTE MANAGEMENT**

Waste refers to all solid waste, including domestic waste, hazardous waste and construction debris. The Contractor are responsible for the establishment of a refuse control system (which must consider recycling wherever possible) that is acceptable to the ECO. Disposal arrangements must be made in advance and cleared with the ECO before construction starts.

- No littering or on-site burying or dumping of any waste materials, vegetation, litter or refuse may occur.
- All solid waste must be disposed of offsite at an approved landfill site in terms of section 20 of the Environment Conservation Act (Act No. 73 of 1989). The Contractor must supply the ECO with a certificate of disposal.
- The Contractor must provide problem animal- and weatherproof bins with lids of sufficient number and capacity to store the solid waste produced on a daily basis. The lids must be kept firmly on the bins at all times. Bins must not be allowed to become overfull and must be emptied regularly.
- Waste from bins may be temporarily stored on Site in a central waste area that is weatherproof and scavenger proof and which the Engineer and the ECO has approved.
- All hazardous waste must be disposed of at a registered hazardous waste disposal site and certificates of safe disposal must be obtained.
- All waste generated during the decommissioning and reconstruction activities must be removed by the Contractor as soon as possible, and within the period specified in the EMP and disposed of at a registered landfill site.
- The Contractor must make provision for workers to clean up the Contractor's camp and working areas on a daily basis so that no litter is left lying around and so that the site is in a neat and tidy state. The Contractor must remove from site the refuse collected at least once a week.
- Waste and any excess material (and concrete slabs and pipes) should not be dumped into any watercourses, wetlands or riparian zones.



### **3.10.19 TOILETS AND ABLUTION FACILITIES**

The Contractor must provide suitable sanitary arrangements at designated points of the construction site for all site employees. A minimum of one toilet must be provided per 15 persons at each working area (station) or as stipulated in the Management plan.

- The toilet must be within easy reach (max 300m) of the working area and be in good working condition and cleaned on a daily basis. Toilet paper must be provided. The toilets must be emptied on a weekly basis or when full or when instructed by the ECO on site.
- Toilets should be placed at least 50m from any watercourses.
- Toilets should be adequately screened from any public areas or residences.
- Disposal arrangements must be made in advance and cleared with the ECO before construction starts. Sanitation provision and servicing must be to the satisfaction of the ECO.
- The Contractor must ensure that toilets are emptied prior to any builders' holidays, and/or weekends.
- Toilets must be of a neat construction and must be provided with doors and locks and must be secured to prevent them blowing over.
- NB: No burying of any waste material on or near the construction site nor anywhere on the surrounding property is permitted.
- Eating areas that are allocated for workers must be established in an environmentally acceptable manner and in line with all OH&Safety Act regulations. All on site and on route workers temporary eating areas must have acceptable toilet and refuse management systems in place and these areas must have suitable refuse receptacles' available for the containment and disposal of general litter and refuse.

### **3.10.20 DISCHARGE OF CONSTRUCTION WATER**

Potential pollutants of any kind and in any form must be kept, stored, and used in such a manner that any escape can be contained and the water table not endangered. This particularly applies to water emanating from runoff from construction areas/fuel depots/workshops/truck washing areas.

- The contractor, being responsible for the construction and effective containment and maintenance of settlement ponds must ensure that the surrounding environment is not adversely affected as a result of construction activities.
- Wash down areas must be placed and constructed in such a manner so as to ensure that the surrounding areas are not polluted. Contaminated water includes water that is carrying excess sediment due to construction activities.
- Contaminated water storage facilities must not be allowed to overflow and appropriate protection from rain and flooding must be implemented.
- Contaminated water that is removed from site must be disposed of at a facility approved by the ECO and Local Authority.
- No contaminated water that does not meet the water quality standards and criteria under the National Water Act may be released into a natural system, whether it is to surface or groundwater.
- All cement effluent from mixer washings, and run-off from batching areas and other work areas must be contained in suitable sedimentation ponds.
- Sedimentation ponds must be allowed to dry out on a regular basis to allow for solid material to be removed.
- This material must be disposed of in a suitable manner, depending on the nature of the material, and to the discretion of the ECO



### **3.10.21 EATING FACILITIES**

The Contractor must designate eating areas for the approval of the ECO, which must be clearly demarcated. No eating of meals must take place outside these designated areas without the approval of the Contractor/ESO.

- The feeding, or leaving of food for animals are strictly prohibited.
- Sufficient waste bins must be present in this area and emptied regularly.
- The contractor must supply all construction staff with adequate clean water, and may not be sourced from surrounding farms/ landowners, unless written permission is granted by the landowner.
- No overnight camping/stay on site allowed. If overnighing is necessary for security purposes then it must be cleared with the ECO on site.
- No washing in dams or streams are allowed.

### **3.10.22 DUST CONTROL**

The Contractor must take all reasonable measures to minimize the generation of dust as a result of construction activities resulting from along-construction-route activities (but must also take into account possible water constrictions of the area).

- The onsite construction site agent must take into account prevailing wind strength and wind direction and must have preventative measures on standby to minimize dust pollution that may cause damage to people and property.
- The liberation of dust into the surrounding environment shall be effectively controlled by the use of, inter alia, water spraying and/or other dust-allaying agents. The speed of haul trucks and other vehicles must be strictly controlled to avoid dangerous conditions, excessive dust or excessive deterioration of the road being used.
- In agricultural areas, earth-works should be done after the harvest season, or as agreed upon by the land-owner.

### **3.10.23 RESTORATION AND REHABILITATION**

The Contractor must ensure that all structures, equipment, materials and facilities used or created on site for or during construction activities are removed once the project has been completed. On completion of the project or phase, all areas impacted by the construction activities must be reinstated and/or rehabilitated to the satisfaction of the ECO with emphasis on the following:

- Immediately after the demolition of the camp site or once construction has been completed, the contractor shall restore the site to its original state, paying particular attention to its appearance relative to the general landscape. This must be done as soon as possible after construction has ended to ensure no possible environmental degradation of the site as a result of erosion, alien vegetation establishment etc.
- The contractor's procedure for rehabilitation shall be approved by the ECO and Engineer.
- Site offices must be removed and the areas rehabilitated or reinstated to the satisfaction of the ECO.
- Labourer's facilities (if applicable) must be removed and the areas rehabilitated or reinstated to the satisfaction of the ECO.
- All construction site areas must be rehabilitated or reinstated to the satisfaction of the ECO.
- All temporary fencing and demarcation must be removed and the areas reinstated to the satisfaction of the ECO.
- Temporary storage areas must be rehabilitated or reinstated to the satisfaction of the ECO.
- All remaining construction material must be removed and the areas rehabilitated or reinstated to the satisfaction of the ECO.



- Any old road sections not used for operational purposes during the operational phase should be rehabilitated after construction to allow for regrowth of vegetation.

Any additional **disturbed** areas must be rehabilitated or reinstated to the satisfaction of the ECO. This shall include but not be limited to:

- Earthworks to reinstate the physical characteristics of the site. Here attention to the natural vertical and lateral heterogeneity in landform shall guide the reinstatement of natural areas.
- Replacement of topsoil material – care shall be taken to ensure that the same material that was removed from each area is replaced there, since this will carry the seed complement appropriate for re-establishment of each plant community type.
- Final landscaping by machine, but landscaping by hand may be required in many areas under rehabilitation.
- Re-seeding and / or replanting of rehabilitated areas.
- The Contractor shall not be permitted to use fertilisers or pesticides.
- It is imperative that any potential erosion problems are addressed. This may require subsequent site visits to monitor the efficacy of erosion control measures.

#### **3.10.24 LAND MANAGEMENT**

- Vehicles accessing the construction site must be made aware of driving in hazardous road conditions, sharp bends, narrow roads, bad weather, on or near children or domestic animals along the road.
- Vehicle movements should be kept to a minimum during rain to avoid damage to access roads.
- No fences or gates on the relevant construction property must be damaged. All access gates to the property (construction site) to be kept closed at all times to prevent domestic and or wild animals from getting out. Access by unauthorised personnel should be controlled. The access gates to the construction areas must always be closed.
- Soil erosion must be prevented at all times along the access roads and around construction areas.

#### **3.10.25 SOCIO-CULTURAL ISSUES**

- Neighbouring community, adjacent land owners and occupiers etc. must be treated with respect and courtesy at all times.
- The cultural lifestyles of the communities living in close proximity to the construction areas must be respected.
- Hours of work on the site shall be limited to normal working hours, as accepted by the local authority.
- Should construction be required outside of these times, permission is to be obtained from the local municipality, in consultation with the ECO and the surrounding landowners.

### **3.11 EMERGENCY PREPAREDNESS & RESPONSE**

The following potential emergency situations have been identified and include the procedure for responding to, and for preventing and mitigating the environmental impacts that may be associated with them (also refer to Penalties and Fines).



### **3.11.1 ACCIDENTAL FIRES**

Fire safety is a very real risk and must be stringently controlled. No fires will be permitted on site for any reason. If required, a designated smoking area will be provided, and clearly demarcated and signposted, with a facility for safe containment and disposal of cigarette butts.

The following measures must be implemented:

- Adequate fire fighting equipment must be available on site and in good working order (including at least one type ABC (all purpose) minimum 4.5 kg fire extinguisher and 3 fire beaters per working area). The persons on site must be trained in the use of such equipment.
- The main contractor must provide a list of all authorities involved in fire fighting in the region. This list must include emergency contact numbers and must be visible at the site office.
- The contractors must establish an emergency procedure (with contact numbers) to the satisfaction of ECO (whenever work is done in any fire prone areas).

### **3.11.2 HYDROCARBON SPILLS**

Since the project is in proportion relative small, no fuel storage or distribution facilities are expected to be established. As a result the significance of any spill is much reduced. The following must be observed:

- Vehicles will arrive on site already fuelled for the project.
- If additional fuel is needed, it will be brought in as needed (minimal volumes) and refuelling will be done using a pump and not a funnel (to minimize the risk of spills).
- Spill trays shall be used during re-fuelling.
- In the case of accidental spillages or leakage, the contractor will be responsible for immediate containment and corrective action (e.g. stopping the leakage), and to inform the Construction Supervisor and ECO.
- The ECO will recommend the best possible environmental solution.
- The Contractor will be liable for any costs incurred.

### **3.11.3 CONCRETE/CEMENT SPILLAGES**

The Contractor/supplier will be liable for the safe and correct deliverance of substantial loads of concrete or cement.

- Should a spill occur the Contractor/supplier will be liable for all costs of the rehabilitation needed.



## 4. OPERATIONAL EMP (OEMP)

The most important part of the operational phase will be to ensure that the site is meticulously maintained and that the operations are carefully monitored. Zero Carbon Charge will remain overall responsible for the environmental performance of the site and must be aware of the legal requirements and obligations. The owner must also be aware of the legal action that can be taken against him as a person with regards to negligence leading to environmental pollution.

The owner or delegated responsible person must implement an operational and maintenance management plan for the development. This plan must include:

- Access management and control
- Water management and monitoring.
- Erosion management
- Waste and pollution management.
- Fire Management
- Minimise dust and air emissions
- Protection of indigenous natural vegetation and fauna
- Alien vegetation removal
- Specific monitoring and operational instructions.
- Emergency plans which will cover all reasonable aspects of the operations which might lead to environmental pollution or degradation.

### **4.1 TRAFFIC ACCESS ROUTES AND HAUL ROADS**

The Operator of the site must control the movement of all vehicles and plant including that of his suppliers so that they remain on designated routes. In addition such vehicles and plant must be so routed and operated as to minimise disruption to regular users of the routes not on the Site.

- A Traffic Management Plan should be compiled for each site, with cognisance of vehicles entering and exiting the facility along major roads.
- On public roads adjacent to the Site, vehicles will adhere to municipal and provincial traffic regulations.
- Only approved access roads may be used.
- All measures must be implemented to minimize impacts on local commuters e.g. limiting maintenance/service/operational vehicles travelling on public roadways during the morning and late afternoon commute time and avoid using roads through densely populated built-up areas so as not to disturb any existing retail and commercial operations.

### **4.2 ENERGY MANAGEMENT**

Even though energy supply will be derived from the Solar PV facility itself, all reasonable steps must be taken to ensure the efficient management of energy. Energy management and conservation measures must be propagated and encouraged. The objective of energy management will be to encourage the conservation of energy, for example:

- Ensure that cooling units are located and operated to conserve energy.
- Install energy-efficient appliances
- Install energy efficient lightning
- Insulate water heaters and hot water pipes (insulating hot water pipes from the water heater to the source are another way to conserve).
- Disconnect or switch- off units/appliances which are not in use.
- Monitor different energy uses (e.g. electricity, fuels and gas).



### **4.3 WATER MANAGEMENT**

- Ensure that all additional water uses are correctly registered with the Department of Water and Sanitation (e.g. agri-industrial use)(if required).
- Water conservation measures such as low flow taps, high pressure hoses, dual flush toilets, water wise gardens, rainwater harvesting and tanks etc. must be encouraged and implemented.
- Every reasonable effort must be made to reduce the long term water demand.
- Environmental training of personnel must include water conservation awareness.
- A monthly water monitor program with the aim of ever reducing the water usage must be implemented (records must be kept).

### **4.4 EROSION AND SEDIMENT CONTROL**

Soil erosion (through wind & water) removes valuable topsoil which is the most productive part of the soil profile (containing plant nutrients, seeds and bulbs). Development disturbs and loosens soils which can easily lead to erosion. The plants and animals that depended on that soil can no longer survive, and the plants that once grew that cannot re-establish itself because the seed store is gone. Soil may then have to be brought back from elsewhere, increasing the cost of the project and the risk of importing weeds and other waste or toxic material. In accordance with the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) (CARA), the aim of erosion management is to prevent any form of soil erosion through proactive thinking and prevention as well as immediate rehabilitation.

In order to achieve erosion and sediment control, the following are applicable to all properties:

- Inspect and maintain erosion and sediment controls on a regular basis and ensure that it can accommodate the upslope catchment.
- Leave as much vegetation as possible.
- Install permanent fences to define 'no go' areas in those areas that are not to be disturbed.
- Install sediment catchment controls down slope of the site to catch sediment (if applicable). This must be done as soon as possible and should be permanent.
- Driving off road, or over the edge of the road to avoid puddles, or obstacles, should be avoided. Obstacles should be removed to avoid vehicles from having to drive off the road surface.
- The road surface must be maintained.
- Maintain storm water management infrastructure.
- Due diligence to limit sediments washing down the river.

### **4.5 WASTE AND POLLUTION MANAGEMENT**

An integrated waste management approach based on waste minimisation (e.g. reduction, recycling, re-use and disposal) must be encouraged. Poor waste management can lead to adverse environmental impacts (e.g. odours, pollution and visual impact) as well as health risks. Sound waste management is thus non-negotiable.

- No on-site burying or dumping of any waste materials, vegetation, litter or refuse may be allowed.
- Organic waste can be disposed of, buried on-site or used as mulch.
- Domestic waste must be stored in approved containers (e.g. bins with removable lids).
- All solid waste will be disposed of at a landfill licensed in terms of section 20 of the Environment Conservation Act (Act No. 73 of 1989).
- No material should be disposed into any riparian zone, including organic waste.
- All possible pollution sources must be identified and all reasonable steps taken to prevent pollution or accidental spillages.



- Ensure that all concentrated potential sources of pollution are protected (bunded) in order to minimise the risk of accidental spillage or pollution. Storage tanks should be bunded in such a way to contain at least 120% of the storage tank's capacity.

#### **4.6 MINIMISE DUST AND AIR EMISSIONS**

Refer to erosion and sedimentation control paragraph 3.

#### **4.7 MANAGEMENT OF NATURAL AREAS**

The objective regarding the management of natural areas are to identify critical or conservation worthy features and to manage such areas and gardens in such a manner as to promote biodiversity and ecological processes.

- Natural areas must be managed as close to natural as possible (no interference wherever possible).
- Alien vegetation should be removed from the remaining natural areas and disturbed areas that are within or adjacent to any riparian zone and the areas should be kept clear of alien vegetation. This should be implemented as soon as possible, and the alien vegetation removal programme be in place permanently to address any new growth which may occur. The land owner is responsible for the implementation of the alien vegetation removal and control on the site and the property.
- All listed invasive alien vegetation must be removed in accordance with CARA legislation (The Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)) as revised.

#### **4.8 EMERGENCY PREPAREDNESS AND RESPONSE**

The following potential emergency situations have been identified and include the procedure for responding to, and for preventing and mitigating the environmental impacts that may be associated with them.

##### **4.8.1 ACCIDENTAL FIRES**

The following measures must be implemented:

- Adequate fire fighting equipment must be available at an area where works or maintenance is taking place and in good working order (including at least one type ABC (all purpose) minimum 4.5 kg fire extinguisher and 3 fire beaters per working area). The persons on site must be trained in the use of such equipment.
- The owner must provide a list of all authorities involved in fire fighting in the region, including neighbouring land-owners. This list must include emergency contact numbers and must be visible at the office.
- The owner must establish an emergency procedure (with contact numbers).
- Accidental fires are to be dealt with in terms of the local fire protection association or local regulations.

#### **4.9 CHEMICAL MANAGEMENT**

Proper chemical management is required to minimize or eliminate the risk of environmental damage, as well as the risk of fatalities, illnesses, injuries and incidents arising from the storage, handling, transport and disposal of hazardous material.

- Compliance with the Occupational Health and Safety Act of 1983



- An emergency plan must be made to comply with section 30 (Control of emergency incidents) of the National Environmental Management Act (NEMA), No. 107 of 1997.
- In case of a spill or leak of product, such incident must be reported to all relevant authorities and the Directorate: Pollution Management in accordance with Section 30 (10) of NEMA, No. 107 of 1997.
- All staff on the site must be well trained and have the appropriate PPE in all aspects of the Occupational Health and Safety procedures pertaining to activities of the solar PV facility.
- Access to chemical storage areas must be strictly restricted authorised personnel.
- Material Safety Data Sheets (MSDSs) shall be readily available on site for all chemicals and hazardous substances to be used on site. Where possible the available, MSDSs must additionally include information on ecological impacts and measures to minimise negative environmental impacts during accidental releases or escapes.
- A system shall be in place to ensure that MSDS are available to all personnel (including first-aiders and medical personnel) involved in the transportation, storage, handling, use and disposal of hazardous materials on site.
- Labelling shall be in place on all storage vessels, containers and tanks, where significant risks exist (based on a risk assessment). Labelling shall clearly identify the stored material.
- Personnel using and handling chemicals shall have received proper training for this purpose, using information available from the MSDS.
- For each site establishment, yard or other temporary chemicals storage area, a map indicating the potential sources of pollution and corresponding location of spill kits will be prepared. Spill kits will be placed at sufficient proximity in accordance with the degree of risk for spillage, and a responsible person designated for each.
- Emergency response equipment for spillage containment, fires, explosions, burns, first aid, etc. must be made available.
- Visible safety signs must be placed in areas of potential hazard, e.g. where tap water is not to be used for drinking purposes, indicating the dangers of chlorine or informing of the safety equipment to be worn when entering a certain area, etc.

#### **4.10 BATTERY ENERGY STORAGE SYSTEM (BESS) MANAGEMENT**

Prevent contamination of soil or water resources through spills, leaks etc. from the BESS

- The battery storage system must be designed by professionals and installation must comply with all norms and standards.
- Batteries that have reached the end of their life-cycle are to be appropriately removed, preventing any spills or contamination, and are to be appropriately transported to a licenced recycling facility or hazardous waste disposal site.
- Any hazardous materials should be stored in an appropriate manner to prevent contamination of the site.
- A Material Safety Data Sheet, supplier user guidelines and safety specifications for the battery must be readily available on site.
- Operate, maintain and monitor the BESS as per the supplier specifications.
- Method statements for battery cell, electrolyte and battery cell / container replacement to be compiled. These should be approved by the technical manager and SHEQ manager.
- Maintain strict access control to the battery storage area.
- Sufficient and appropriate signage, specifying the types of batteries being used and the risk of exposure to hazardous material and electric shock, to be provided.
- Undertake regular visual inspections of the batteries and electrical equipment to identify any defects, damage or leaks.
- Any accidental spills (chemicals, fuel, oil etc) that occur must be cleaned up in an appropriate manner. Contaminated soil, material etc. will need to be appropriately disposed of at a licenced facility.



- The fire suppression system must also be checked on a regular basis.

#### **4.11 SOLAR PANEL ARRAY AND ASSOCIATED INFRASTRUCTURE MANAGEMENT**

The following must be implemented during the operations and maintenance of the solar panels and associated electrical infrastructure.

- Maintain strict access control to the solar panel array area.
- Sufficient and appropriate signage indicating the risk of exposure to electric shock to be provided.
- Undertake regular ground inspections of the solar array and electrical equipment to identify any defects or damage.
- Should panels be required to be replaced, materials and panels are to be stored within an approved laydown area. No disturbance of areas outside of these areas should occur.
- Areas under solar panel array should be regularly mowed, brush cut or cleared of excessive grass and/or vegetation growth to minimise the risk of fires.
- Full clean-up of all materials must be undertaken after the removal and replacement of the solar panel arrays and associated infrastructure is complete, and disturbed areas appropriately rehabilitated.
- All material that can be reused or recycled must be recovered, and transported off-site to an appropriate facility.
- No waste materials may be left on-site.
- Waste material which cannot be recycled shall be disposed of at an appropriately licensed waste disposal site or as required by the relevant legislation.
- Cognisance of water usage and water run-off during the washing of panels must be taken. Where possible, water-less cleaning methods should be considered. If not, the use of rain captured water or other responsibly sourced water should be considered.



## **5. ENVIRONMENTAL AUDIT PROGRAMME**

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A Final Construction Phase Audit Report should be undertaken 6 months post construction. This must be undertaken by a qualified Independent Environmental Auditor, and is to be submitted to Zero Carbon Charge and the Competent Authority (if required).

Since the development includes an operational phase, annual audits for the initial two years is recommended.

If the facility required Environmental Authorisation in terms of NEMA, in terms of the 2014 EIA Regulations, Audit Reports must be submitted to the registered Interested and Affected Parties within 7 days of submission to the competent authority.



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## 6. DECOMMISSIONING PHASE

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The facility is expected to have a lifespan of 20+ years (i.e. with routine maintenance). The facility infrastructure would only be decommissioned and rehabilitated if it becomes outdated or inadequate, in which case the facility will normally be upgraded and not decommissioned.

It is thus considered unlikely that the facility will be decommissioned. However, it is likely that the facility may be upgraded or enlarged as part of maintenance and replacement of individual components with more appropriate technology/infrastructure available at that time.

However, should decommissioning of the site after approximately 20 years take place, then **the relevant mitigation measures contained under the Construction Phase above (Section 3) must be applied during decommissioning and therefore is not repeated in its entirety in this section, bar the following general principles:**

- Site preparation activities will include confirming the integrity of the access to the site to accommodate required equipment, preparation of the site (e.g. lay down areas, construction platform) and the mobilisation of construction equipment.
- Disassembled components will be reused, recycled, or disposed of in accordance with best practise or any relevant legislation at the time.
- Specific consideration must be given to ways to minimise waste and wastage in maintenance and the decommissioning phase of the proposed development. Where waste cannot be recycled or re-used, it must be disposed of at an appropriate licenced/registered facility or landfill. Records of disposal must be kept.
- Equipment used in the plant must be recycled and re-used where possible to avoid the filling of already limited landfill space.
- As far as possible, local labour must be used for the disassembly and sorting of components for recycling.
- Batteries must be re-used, recycled or disposed of at a licenced facility. A Method Statement must be compiled for the safe decommissioning of the battery storage, and which will consider the appointment of accredited battery recyclers.
- A final public road integrity inspection in conjunction with the provincial traffic authority must take place to ensure that roads which serviced the facility are not left in a degraded state.
- All areas impacted areas must be appropriately rehabilitated. Re-vegetation of exposed soil surfaces must be undertaken to ensure no erosion in these areas. An survey of the surrounding area is to be conducted at least 5 around the construction area to determine the applicable plant species that must be used for the rehabilitation.



## 7. IMPACT MANAGEMENT OUTCOMES

### Impact Management Outcomes

Planning, Design and Pre-Construction					
Impact	Management Outcomes	Management Actions	Responsible Person/Party	Implementation Monitoring Method	Monitoring Frequency
Demarcation of work areas	Prevent impacts on undisturbed areas and natural vegetation	<ul style="list-style-type: none"> <li>The site will be demarcated with appropriate dropper poles. Alternative fencing may be decided upon dependent on site requirements). Other demarcation measures can be used if approved by the ECO.</li> <li>Work areas and access routes must be clearly demarcated to minimise environmental impact.</li> </ul>	Contractor	Method Statement	Once-off
Demarcation of no-go areas	Prevent impacts on sensitive features on site, seasonal	<ul style="list-style-type: none"> <li>No-Go areas will be demarcated and indicated on a site plan.</li> <li>Natural vegetation outside of the development area will be considered no-go areas, unless for the purpose of alien vegetation clearing.</li> </ul>	Contractor	Method Statement	Once-off



	streams and natural vegetation on or adjacent to the site				
Site camp establishment and access roads	Prevent unnecessary impacts on natural vegetation through the establishment and operations of the site camp and access roads.	The site camp, lay down areas, and access roads must be clearly defined on a plan, taking no-go areas into consideration, as well as proximity to water resources.	Contractor	Method Statement	Once-off
Fuel Storage	Prevention of fuel spillages and contamination of the soil and/or water resources	<ul style="list-style-type: none"> <li>•The fuel tank must be placed within a <u>completely sealed concrete bund</u>.</li> <li>•All fuel oil containers must be placed within suitable drip trays to prevent accidental spillage of oils and fuels.</li> <li>•A suitable leak proof container for the storage of oiled equipment (filters, drip tray contents and oil changes etc.) must be established.</li> <li>•Fuel storage areas must be at least 100m from any watercourses.</li> </ul>	Contractor	Method Statement	Once-off
Mandatory site equipment	Ensure the correct equipment is on site to meet	<ul style="list-style-type: none"> <li>•Adequate fire fighting equipment must be available on site and in good working order (including at least one type ABC (all purpose)</li> </ul>	Contractor	Method Statement	Once-off



	environmental requirements as per the EMP	<p>minimum 4.5 kg fire extinguisher and 3 fire beaters per working area.</p> <ul style="list-style-type: none"> <li>•Drip trays to be used during refuelling or storage of small quantities of fuel on site.</li> <li>•Adequate toilet and ablution facilities must be provided on site. Toilets should be placed at least 50m from any watercourses. Toilets are to be serviced and cleaned on a regular basis.</li> <li>•Adequate waste bins to be provided on site</li> </ul>			
Waste Management	To prevent and minimise waste generation and contamination of the site and surrounding areas	<ul style="list-style-type: none"> <li>•No littering or on-site burying or dumping of any waste materials, vegetation, litter or refuse may occur.</li> <li>•All solid waste, except for the organic waste from the removed vineyards and natural vegetation, must be disposed of offsite at an approved landfill site in terms of section 20 of the Environment Conservation Act (Act No. 73 of 1989). The Contractor must supply the ECO with a certificate of disposal.</li> <li>•The Contractor must provide problem animal- and weatherproof bins with lids of sufficient number and capacity to store the solid waste produced on a daily basis. The lids must be kept firmly on the bins at all times. Bins must not be allowed to become overfull and must be emptied regularly.</li> </ul>	Contractor	Method Statement	Once-off
Fire Management	Prevent unnecessary fires which may cause damage and risk to the environment, property and human	<ul style="list-style-type: none"> <li>• Adequate fire fighting equipment according to the fire hazard during the construction period must be available on site and in good working order (at least one type ABC (all purpose) minimum 4.5kg extinguisher and 3 fire beaters per working area). The persons on site must be trained in the use of such equipment.</li> <li>• The main contractor must provide a list of all authorities involved in fire fighting in the region. This list must include emergency</li> </ul>	Contractor	Method Statement	Once-off



	health, and adequately deal with any fires that may occur on site	contact numbers and must be visible at the site office. • No on site fires are permitted.			
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Construction					
Impact	Management Outcomes	Management Actions	Responsible Person/Party	Implementation Monitoring Method	Monitoring Frequency



					n c y
Topsoil remo val	Topsoil to be removed (if necessary), protected and stockpiled for rehabilitation after construction	<ul style="list-style-type: none"> <li>• Prior to any activities within the demarcated work areas, topsoil material shall be removed to a depth of 300mm or deeper if specified by the engineer in consultation with the ECO, and stockpiled in a designated area for use in rehabilitation of the site post construction.</li> <li>• Topsoil from the still relatively natural area (the top 15 -20 cm) should be removed and be used for rehabilitation after construction on site or in the immediate vicinity of the site.</li> </ul>	Contractor	Method State ment	Once-off
Stockpile Mana geme nt	Avoid impacts on natural areas and watercourses from stockpiling of material, waste etc.	<ul style="list-style-type: none"> <li>• Topsoil stockpiles to be separated from waste, building material etc. stockpiles.</li> <li>• Stockpile areas to be demarcated prior to construction.</li> </ul>	Contractor	Method State ment	Once-off
Erosion Mana geme nt	Prevent erosion as a result of construction activities on site	<ul style="list-style-type: none"> <li>• Install erosion and sediment controls before work starts and maintain these features throughout the construction and operational phases.</li> <li>• Leave as much vegetation as possible.</li> <li>• Implement the Stormwater Management Plan. Adherence to the EMP &amp; Implementation of Standard Management Procedures in terms of erosion and sedimentation.</li> </ul>	Contractor	Method State ment	Continuall y d ur in g c o n st ru



					ct io n
Cement mixing	Prevent contaminatio n from cement mixing and cement waste water on the natural environment , particularly water resources. Due to the high alkaline pH of cement, it is highly hazardous to the natural environment	<ul style="list-style-type: none"> <li>• Concrete and cement may only be mixed on existing hard surfaced areas, or edged mortar boards or a suitable container.</li> <li>• The visible remains of the batch and concrete, either solid, or from washings, must be physically removed immediately and disposed of as hazardous waste.</li> <li>• Washing of equipment shall be done in a container to prevent any runoff of contaminated washing water.</li> <li>• Extreme care must be taken to limit the amount of water contaminated by washing equipment. Water from concrete washing can be re-used in concrete mixes or must be stored in drums, then removed from the site and disposed of at a licensed municipal dump site.</li> <li>• Concrete batching facilities must have suitable bunding methods in place to ensure minimal waste water run-off occurs during batching operations.</li> <li>• Cleaning of equipment and flushing of mixers must not result in pollution of the surrounding environment. All wastewater resulting from batching of concrete must be disposed of <i>via</i> the contaminated water management procedure.</li> </ul>	Contractor	Method State ment	Continuall y d ur in g c o n st ru ct io n
Dust Control	Prevent and minimise dust generation on site	<ul style="list-style-type: none"> <li>• The Contractor must take all reasonable measures to minimize the generation of dust as a result of construction activities resulting from along-construction-route activities (but must also take into account possible water constrictions of the area).</li> </ul>	Contractor	Method State ment	Continuall y d ur in



	which can become a nuisance to neighbouring land owners and residents, as well as being a health risk	<ul style="list-style-type: none"><li>• The onsite construction site agent must take into account prevailing wind strength and wind direction and must have preventative measures on standby to minimize dust pollution that may cause damage to people and property.</li><li>• The liberation of dust into the surrounding environment shall be effectively controlled by the use of, inter alia, water spraying and/or other dust-allaying agents. The speed of haul trucks and other vehicles must be strictly controlled to avoid dangerous conditions, excessive dust or excessive deterioration of the road being used.</li></ul>			g c o n s t r u c t i o n
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Rehabilitation					
Impact	Management Outcomes	Management Actions	Responsible Person/Party	Monitoring Method	Monitoring Frequency
Rehabilitation of the Construction site	Rehabilitation of areas impacted by construction activities	<ul style="list-style-type: none"> <li>• All structures, equipment, materials and facilities used or created on site for or during construction activities are removed once the project has been completed. On completion of the project or phase, all areas impacted by the construction activities must be reinstated and/or rehabilitated to the satisfaction of the ECO.</li> <li>• Immediately after the demolition of the camp site or once construction has been completed, the contractor shall restore the site to its original state, paying particular attention to its appearance relative to the general landscape. This must be done as soon as possible after construction has ended to ensure no possible environmental degradation of the site as a</li> </ul>	Contractor	Method Statement	Once-off



		<p>result of erosion, alien vegetation establishment etc.</p> <ul style="list-style-type: none"><li>•The contractor's procedure for rehabilitation shall be approved by the ECO and Engineer.</li><li>•Site offices must be removed and the areas rehabilitated or reinstated to the satisfaction of the ECO.</li><li>•Earthworks to reinstate the physical characteristics of the site. Here attention to the natural vertical and lateral heterogeneity in landform shall guide the reinstatement of natural areas.</li><li>•Replacement of topsoil material – care shall be taken to ensure that the same material that was removed from each area is replaced there, since this will carry the seed complement appropriate for re-establishment of each plant community type.</li><li>•Final landscaping by machine, but landscaping by hand may be required in many areas under rehabilitation.</li></ul>			
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Operation					
Impact	Management Outcomes	Management Actions	Responsible Person/Party	Monitoring Method	Monitoring Frequency
Erosion Management	Avoid valuable topsoil removal	<ul style="list-style-type: none"> <li>Inspect and maintain erosion and sediment controls on a regular basis and ensure that it can accommodate the upslope catchment.</li> <li>Leave as much vegetation as possible.</li> </ul>	Owner	Visual monitoring	Weekly/after major



		<ul style="list-style-type: none"> <li>• Install permanent fences to define 'no go' areas in those areas that are not to be disturbed.</li> <li>• Install sediment catchment controls down slope of the site to catch sediment (if applicable). This must be done as soon as possible by the owner and should be permanent.</li> <li>• Avoid driving off road, or off the road surface, to avoid puddles or obstacles.</li> <li>• During the operational phase of these gravel roads, prone to erosion exacerbated by heavy rainfall, running water must be deviated from the roads with appropriate storm water management infrastructure. Next to the road shoulders, paved swales will probably be necessary to prevent running storm water to erode deep trenches.</li> </ul>			ra in e v e n t s
Waste and Pollution Management	Avoid contamina tion of soil and water resources with pollutants.	<ul style="list-style-type: none"> <li>• No on-site burying or dumping of any waste materials, vegetation, litter or refuse may be allowed.</li> <li>• Organic waste can be disposed of, buried on-site or used as mulch.</li> <li>• Domestic waste must be stored in approved containers (e.g. bins with removable lids).</li> <li>• All solid waste will be disposed of at a landfill licensed in terms of section 20 of the Environment Conservation Act (Act No. 73 of 1989).</li> <li>• No material should be disposed into any riparian zone, including organic waste.</li> <li>• All possible pollution sources must be identified and all reasonable steps taken to prevent pollution or accidental spillages.</li> </ul>	Owner	Visual monitor ing	Daily - W e e k l y



Emergency Preparedness - Fire	Prevent unnecessary fires which may cause damage and risk to the environment, property and human health, and adequately deal with any fires that may occur on site	<ul style="list-style-type: none"> <li>• Adequate fire fighting equipment must be available on site and in good working order (including at least one type ABC (all purpose) minimum 4.5 kg fire extinguisher and 3 fire beaters per working area). The persons on site must be trained in the use of such equipment.</li> <li>• The owner must provide a list of all authorities involved in fire fighting in the region, including neighbouring land-owners. This list must include emergency contact numbers and must be visible at the office.</li> <li>• The owner must establish an emergency procedure (with contact numbers).</li> <li>• The project facility must register with the local Fire Fighters Organisation and periodically conduct drills in conjunction with the local fire fighters unit. Fire management and Protection plan should be developed to implement measures that minimise the potential for human cause fires.</li> </ul>	Owner	Visual monitoring	Daily- weekly / when required
Battery Energy Storage Systems (BESS)	Prevent contamination of soil or water resources through spills, leaks etc. from the BESS	<ul style="list-style-type: none"> <li>• The battery storage system must be designed by professionals and installation must comply with all norms and standards.</li> <li>• Batteries that have reached the end of their life-cycle are to be appropriately removed, preventing any spills or contamination, and are to be appropriately transported to a licenced recycling facility or hazardous waste disposal site.</li> <li>• Any hazardous materials should be stored in an appropriate manner to prevent contamination of the site.</li> <li>• Any accidental spills (chemicals, fuel, oil etc) that occur must be cleaned up in an</li> </ul>	Owner	Visual monitoring	Daily - weekly



		appropriate manner. Contaminated soil, material etc. will need to be appropriately disposed of at a licenced facility.			
Management of Natural Areas	Prevent impacts on, and loss of, adjacent natural vegetation	<ul style="list-style-type: none"> <li>• Natural areas must be managed as close to natural as possible (no interference wherever possible).</li> <li>• Alien vegetation should be removed from the remaining natural areas and disturbed areas that are within or adjacent to any riparian zone and the areas should be kept clear of alien vegetation. This should be implemented as soon as possible, and the alien vegetation removal programme be in place permanently to address any new growth which may occur. Land owner is responsible for the implementation of the alien vegetation removal and control on the site and the property.</li> <li>• All listed invasive alien vegetation must be removed in accordance with CARA legislation (The Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)) as revised.</li> </ul>	Owner	Visual monitoring	Weekly



## **APPENDIX 1: DECLARATION OF UNDERSTANDING**



# **ELECTRIC VEHICLE CHARGING STATION AND SOLAR PV FACILITY**

## **DECLARATION OF UNDERSTANDING**

I \_\_\_\_\_

**Representing:** \_\_\_\_\_

Declare that the conditions of the EMP were brought to my attention and that I have read and understood the contents of this Environmental Management Plan as prepared by EnviroAfrica, of which a copy has been made available to me.

**Site:** \_\_\_\_\_

**Date:** \_\_\_\_\_

I also declare that I understand my responsibility in terms of enforcing and implementing the Environmental Specifications as set out in this Environmental Management Programme.

I also undertake to inform all persons under my supervision of these specifications and the contents of the Environmental Management Programme.

**Signed:** \_\_\_\_\_

**Place:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Witness 1:** \_\_\_\_\_



## **APPENDIX 2: ENVIRONMENTAL AUTHORISATION**

To be included on approval (before construction begins).

### **7.1.1.1**



## **APPENDIX 3: Maps & Drawings**

Site Development Plan including No-go areas and buffers



## **APPENDIX 4: START-UP REPORT**

To be included after start-up meeting.

**7.1.1.2**



**APPENDIX 5: PENALTIES FOR NON-COMPLIANCE**



## PENALTIES FOR NON-COMPLIANCE

The contractors / sub-contractors must contact the ECO at any stage if unsure about any matter, or if a pollution incident occurs, or vegetation or animals are damaged.

ECO = Environmental Control Officer    ESO= Environmental Site Officer

PHASE	Penalty for Non-compliance	
	Bottom range	Top Range*
<b>PRE-CONSTRUCTION PHASE</b>		
Construction area to be marked off before construction starts.		5000
The demarcated area must be maintained throughout the construction phase	500	1000
Site area for stock piling of building material must be demarcated	500	5000
Site area for storing of waste material must be demarcated	500	5000
Fencing off the construction site with mesh fencing of 1.8m, where necessary or other suitable material as agreed on by ECO	500	1000
Sitting of access road/s to be approved by ECO & demarcated with stakes before any construction starts (if applicable)		5000
Temporary route used for construction must be determined on site with ECO (if applicable)	1000	5000
Telecommunications & AC power routes must be determined with the ECO (if applicable)	1000	5000
Sensitive features that may be harmed must be clearly marked or demarcated.	500	2000
Vegetation that may not be removed must be clearly marked or demarcated.	500	5000
Contractor must make the Construction team and all sub-contractors aware of all environmental aspects that could lead to imposition of penalties	100	5000
Contractor to sign Declaration of understanding (DOU) before construction starts		5000
Contractor to assure that all subcontractors be informed and signed DOU	1000	5000
Method statements must be provided on request by the ECO. No work may commence until the Method Statement is accepted by the ECO and Engineer	1000	5000
<b>CONSTRUCTION PHASE</b>		
<b>Information</b>		
A copy of the EMP & Record of Decision with all the conditions of approval, and the relevant Method Statements must be at site at all times.	200	5000



<b>Construction crew behaviour</b>		
Construction crews may not overnight on site.	200	5000
No amplified music allowed on site	100	200
Construction crew must stay within the demarcated construction area. (Applicable in sensitive sites)	50	500
Eating of meals only allowed in demarcated area	50	500
No pets permitted on site		100
Driving, Parking & Storing of machinery and vehicles are only allowed inside demarcated areas and existing roads	1000	5000
Machinery may only be used on the road and may not disturb the vegetation on the sides of the road except if cleared by ECO. Machinery used must be carefully considered to limit environmental damage	500	5000
No vegetation other than that agreed on may be damaged - i.e. no access to areas outside construction area.	500	2000
No individual may cause unnecessary damage to flora and fauna on, around or near the site	20	2000
No littering allowed (incl. cigarette butts)	50	500
<b>Excavations</b>		
No topsoil may be removed or altered outside the demarcated area and/or which was not specified.		2000
Commercial sources of sand, rock and gravel to be cleared with ECO	200	5000
All surplus material to be taken off-site and be disposed of at approved site	500	5000
<b>Toilets</b>		
Sufficient ablution facilities must be provided		3000
Toilets to be secured to prevent them from falling or blowing over.	100	1000
They must be serviced regularly, (according to the manufacturer's instructions) and kept clean.	100	1000
Everybody on site must make use of ablution facilities	50	1000
<b>Fire Prevention</b>		
All mandatory fire fighting equipment (as specified at start-up) must be on site at all times	500	4000
Fire fighting equipment to be in good working order and serviced.	500	2000
No fires, including cooking fires, allowed on site	1000	5000



<b>Cement</b>		
Concrete may only be mixed within the boundaries of the demarcated area and/or where was agreed on by the ECO.	500	5000
All excess cement & concrete mixes to be contained on construction site prior to disposal off site	200	5000
Any cement / concrete spillage to be cleaned up immediately.	500	5000
Ready-mix delivery trucks must not carry out the wash down of their trucks on or around the site unless arranged with ECO.	1000	3000
<b>Dust pollution control</b>		
Ensure that loose building material is covered to prevent dust pollution	100	1000
Water run-off		
Contamination of water bodies, rivers, dams or wetlands must be prevented at all cost	500	5000
Rainwater from construction & building site/s must be channelled, contained & allowed to dry out, so as not to transport any pollutants into the surrounding area. Temporary trenches, straw stabilising, brush cutting can be used	500	5000
<b>Waste control</b>		
Sufficient refuse bins must be placed on site	500	2000
Refuse bins must be cleaned on a regular basis	100	1000
General litter / building refuse must be cleaned up on a regular basis from the site	500	3000
Cement-contaminated water; paint; oil; cement slurries etc must be stored in watertight containers or as agreed with ECO	500	5000
Store all refuse & waste material in wind & animal proof containers	100	1000
Waste must be disposed of at an official waste deposit site on a regular basis.	500	5000
The absence of or inadequate drip trays or bunding facilities	500	5000
Failure to address oil/fuel leaks from on-site machinery	200	5000
<b>Herbicides</b>		
No herbicides or pesticides whatsoever may be used.	200	2000
<b>Construction road</b>		
Road must be upgraded to prevent degradation and erosion of the road and surrounds.	500	5000



<b>Power and Telecommunications supply</b>		
Demarcate power supply route	500	5000
No vehicles to drive through vegetation unless authorised by ECO	500	5000
Storage of equipment may only take place at an area demarcated by the ECO.	500	5000
Working must be done in phases to prevent trampling of vegetation	N/A	
Use of generators and fuel powered equipment		
A watertight cover must be place under the power generator equipment to prevent accidental spillage of fuel & oil seeping into the soil.	500	5000
Drip tray must be able to take 120% of fuel on site	500	5000
All waste material generated from the use of this equipment must be contained and removed from the site	500	5000
Mobile fuel powered equipment must be well maintained and must not have any fuel or oil leaks.	200	5000
<b>Soil Stabilisation</b>		
Ensure that soil material for filling and stabilisation comes from a source that does not contain seeds alien to the area. The source must be cleared with the ECO.	100	2000
<b>Rehabilitation</b>		
Remove rocks and stones and stock pile in area recommended by ECO	500	5000
Remove all plants that can be used for rehabilitation and store on- or off-site in appropriate manner as agreed with ECO	200	5000
Removal of all old concrete and alien materials from site	500	5000
Site must be cleared of all waste and building material	500	5000

\*(Large scale / repeated offence)



## **APPENDIX 6: INFO ON METHOD STATEMENTS**



## INFORMATION ON METHOD STATEMENT

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Method Statements are to be completed by the person undertaking the work (i.e. the Contractor). The Method Statement will enable the potential negative environmental impacts associated with the proposed activity to be assessed.

The Method Statement can only be implemented once approved by the ECO

The Contractor (and, where relevant, any sub-contractors) must also sign the Method Statement, thereby indicating that the works will be carried out according to the methodology contained in the approved Method Statement.

The ECO will use the Method Statement to audit compliance by the Contractor with the requirements of the approved Method Statement.

Changes to the way the works are to be carried out must be reflected by amendments to the original approved Method Statement; amendments require the signature of the ECO denoting that the changed methodology or works are necessary for the successful completion of the works, and are environmentally acceptable. The Contractor will also be required to sign the amended Method Statement thereby committing him/herself to the amended Method Statement.

This Method Statement **MUST** contain sufficient information and detail to enable the ECO to apply their minds to the potential impacts of the works on the environment. The Contractor will also need to thoroughly understand what is required of him/her in order to undertake the works.

THE TIME TAKEN TO PROVIDE A THOROUGH, DETAILED METHOD STATEMENT IS TIME WELL SPENT. INSUFFICIENT DETAIL WILL RESULT IN DELAYS TO THE WORKS WHILE THE METHOD STATEMENT IS REWRITTEN TO THE ER'S AND ESO'S SATISFACTION.

The page overleaf provides a *pro forma* method statement sheet, which needs to be completed for each activity requiring a method statement in terms of the EMP.



## **APPENDIX 7: EXAMPLE OF METHOD STATEMENT**



## PRO-FORMA METHOD STATEMENT

---

**CONTRACT:**..... **DATE:**.....

**PROPOSED ACTIVITY** (give title of method statement and reference number):

--

**WHAT WORK IS TO BE UNDERTAKEN** (give a brief description of the works):

--

**WHERE ARE THE WORKS TO BE UNDERTAKEN** (where possible, provide an annotated plan and a full description of the extent of the works):

--

**START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:**

Start Date:
-------------

End Date:
-----------

**HOW ARE THE WORKS TO BE UNDERTAKEN** (provide as much detail as possible, including annotated maps and plans where possible):

Note: please attach extra pages if more space is required

--



## DECLARATIONS

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### 1) ENVIRONMENTAL CONSULTANT AND/OR ENVIRONMENTAL CONTROL OFFICER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactorily mitigated to prevent avoidable environmental harm:

\_\_\_\_\_  
(Signed) (Print name)

\_\_\_\_\_  
(Signed) (Print name)

Dated: \_\_\_\_\_

### 2) PERSON UNDERTAKING THE WORKS

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to other signatories and that the ESO will audit my compliance with the contents of this Method Statement

\_\_\_\_\_  
(Signed) (Print name)

Dated: \_\_\_\_\_

### 3) THE OWNER (ZCC)

The works described in this Method Statement are approved.

\_\_\_\_\_  
(Signed) (Print name) (Designation)

Dated: \_\_\_\_\_

#### 7.1.1.3



<b>APPENDIX 8: CONTACTOR ENVIRONMENTAL CHECKLIST</b>
--



## CONTACTOR/S REPRESENTATIVE: ENVIRONMENTAL WEEKLY CHECKLIST

SITE: \_\_\_\_\_

PHASE OF WORK AND % OF COMPLETION: \_\_\_\_\_

ENVIRONMENTAL ASPECT	YES/ NO (✓ or X)	COMMENTS
How many workers are on site		
All new personnel on site are aware of the contents of the EMP and have been through the environmental awareness course.		
Contractor's camp is neat and tidy and the labourers' facilities are of an acceptable standard.		
Sufficient and appropriate fire fighting equipment is visible and readily available.		
Waste control and removal system is being maintained.		
Refuse bins in place and maintained		
Toilets are in place and clean		
Demarcation and other fences are being maintained.		
What machinery are on site		
Drip trays are being utilised where there is a risk of incidental spillage		
Bunds/ drip trays are being emptied on a regular basis (especially after rain).		
No leakages (oil & fuel) are visible from construction vehicles		
No go areas, remaining natural features and trees have not been damaged.		
Dust control measures (if necessary) are in place and are effectively controlling dust.		
Noise Control measures (if necessary) is in place and is working effectively.		
Erosion control measures (if necessary) are in place and are effective in controlling erosion. (Access road, site areas etc.)		
Stockpiles are located within the boundary of the site, do not exceed 2 m in height and are protected from erosion.		

Completed by:..... Sign:..... Date:.....

To be submitted at the end of each week to the Environmental Site Officer (ESO)

Received by:

Environmental Site Officer: :..... Sign:

Date:.....



## **APPENDIX 9: BASIC RULES OF CONDUCT**



## BASIC RULES OF CONDUCT

---

The following list represents the basic Do's and Don'ts towards environmental awareness, which all participants in this project must consider whilst carrying out their tasks. These are not exhaustive and serve as a quick reference aid.

**NOTE: ALL new site personnel must** attend an environmental awareness presentation. Please inform your foreman or manager if you have not attended such a presentation or contact the ESO.

### DO:

- Use the toilet facilities provided – report dirty or full facilities
- Clear your work areas of litter and building rubbish at the end of each day – use the waste bins provided and ensure that litter will not blow away.
- Report all fuel or oil spills immediately & stop the spill continuing.
- Dispose of cigarettes and matches carefully. (Littering is an offence.)
- Confine work and storage of equipment to within the immediate work area.
- Use all safety equipment and comply with all safety procedures.
- Prevent contamination or pollution of streams and water channels.
- Ensure a working fire extinguisher is immediately at hand if any “hot work” is undertaken e.g. welding, grinding, gas cutting etc.
- Report any injury of an animal.
- Drive on designated routes only.
- Prevent excessive dust and noise.

### Do not:

- Remove or damage vegetation without direct instruction.
- Make any fires.
- Injure, trap, feed or harm any animals – this includes birds, frogs, snakes, lizards etc.
- Enter any fenced off or marked area.
- Allow cement or cement bags to blow around.
- Speed or drive recklessly
- Allow waste, litter, oils or foreign materials into the stream
- Swim in the dam.
- Litter or leave food laying around

### Notes:

If any animals such as tortoises, chameleons or snakes be encountered then do not harm them. The ECO or Site Supervisor must be contacted to remove these safely. The harming of any animal will result in disciplinary action.

Construction and heavy machine operators must be particularly sensitive to staying within access routes and prevention of unnecessary damage. Dust and noise is also of particular concern. Ensure that vehicles and machinery do not leak fuel or oils. Refuelling or maintenance must be done within the maintenance camp area only.

Alien plant clearing and control work teams must be closely supervised.



## BASIESE GEDRAGSKODES

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Die volgende lys vertenwoordig die moets en moenies vir omgewingsbewustheid wat alle deelnemers aan hierdie projek in ag moet neem tydens die uitvoer van hul take. Hierdie lys is nie volledig nie en dien slegs as 'n vinnige verwysing.

**Nota: alle nuwe terreinpersoneel moet 'n aanbieding ten opsigte van omgewingsbewustheid bywoon.** Indien u nog nie so 'n aanbieding bygewoon het nie, lig asseblief u voorman of bestuurder in of kontak die omgewings terreinbeampte.

### Moets:

- Gebruik die beskikbare toilet-geriewe – rapporteer vuil of vol geriewe.
- Maak u werkplek skoon van rommel of bourommel aan die einde van elke dag – gebruik beskikbare vullisdromme en verseker dat rommel nie rondwaai nie.
- Rapporteer alle brandstof- en olie stortings onmiddellik – stop verdere storting.
- Wees versigtig met die wegdoen van sigarette en vuurhoutjies. (rommelstrooi is 'n oortreding.)
- Beperk werkaktiwiteite en die stoor van toerusting tot die onmiddellike werkarea.
- Gebruik veiligheidstoerusting en voldoen aan alle veiligheids-maatreëls.
- Voorkom besoedeling van strome en waterbane
- Verseker dat 'n brandblusser in werkende toestand byderhand is wanneer “warm” werk verrig word bv. Sweis, wegslyp, gasny, ens.
- Rapporteer beseerde diere.
- Ry slegs op aangewese roetes.
- Voorkom oormatige stof en geraas.

### Moenie:

- Plantegroei verwyder of beskadig sonder direkte instruksie nie.
- Enige vure maak nie.
- Enige diere dood, beseer, vang of voer nie, insluitende voëls, paddas, slange, akkedisse, ens.
- Enige omheinde of afgesperde areas binnetree nie.
- Sement of sementsakke laat rondwaai nie.
- Vinnig of roekeloos bestuur nie.
- Enige rommel, afval, olie of enige vreemde materiaal in strome laat beland nie.
- In die dam swem nie.
- Rommelstrooi of kos laat rondlê nie.

### Notas:

Indien enige diere soos skilpaaie, verkleurmannetjies of slange teëgekom word, moet hulle nie beseer of dood nie. Kontak die otb of ri om hulle veilig te verwyder. Die besering van diere sal lei tot dissiplinêre optrede.

Operateurs van konstruksie- en swaar masjiene moet veral versigtig wees om binne toegangsroetes te bly en om enige onnodige skade te voorkom. Verseker dat voertuie en masjiene nie olie of brandstof lek nie. Brandstofaanvulling en voertuigonderhoud mag slegs binne die onderhoudsarea gedoen word.

Streng toesig moet gehou word oor indringerplantbeheerspanne.



## **EZIPPHAMBILI EKUNYANZELEKILEYO UKUBA ZENZIWE**

---

Zonke ezi zinto zilandelayo zizinto ekufuneka zenziwe nekufuneka zingenziwanga.

Wonke umntu ofikayo kufuneka afundiswe ngemigaqo kupala. Needa yazisa iforman yakho ikuba awukhange uye kufundiswa.

### **Izinto emazenziwe**

- Sebenzisa izindlu zangasese, yazisa xa kukho umonakalo.
- Zama ukucoca apho ubusebenza khona.
- Sebenzisa imigqomo yenkukuma ungayeki iphaphtieke.
- Yazisa xa ubona ioil echithskalayo okanye ipetrol.
- Cima lozoli cigarette xa ugqibibile ukutshaya
- Zonke izixhobo usebenza zibuyisele apho zihlaka khona xa ugcibile apho zihlala khona xa ugqibile ukuzisebenzisa.
- Zisebenzise izikhuselixa uzinkiwe.
- Sukugalela izinto emlanjeni.
- Masibekho isicima mlilo xausebenza ngomlilo.
- Yazisa msinyane xa ubone isilwanyana ezonzakeleyo.
- Xauqhuba isithuthi hamba endleleni qha ungafathulinje.
- Naphina zamaungenzi thuli okanye ingxolo xa usebenza.

### **Emazingenziwa**

- Sukususa nesiphina isityalo ungakhange uxelelwe
- Sukwenza mlilo nokuba sekubanda
- Amagqara ukubulala izilwanyana nokuzifida akuvumelekanga
- Sukungena xa kuvaliwe ngaphandle kwe mvume
- Ingxowa zesamente mazincedwe zingahlwa nje
- Sukuqhuba ngesantya esiphakamileyo
- Sukugalele nayiphi into phaya emlanjeni
- Sukuqubha edameni q oqosha yonk inkukuma



<b>APPENDIX 10: ECO/ESO REPORT/CHECKLIST</b>
--



# ECO / ESO SITE VISIT CHECKLIST / REPORT:

PROJECT NAME:            DATE

PROJECT & PHASE:            LOCATION

ENVIRONMENTAL ASPECT	1-3 NA	COMMENTS
<b>Note:            1 = Poor, 2 = Average,            3 = Good NA = Not Applicable</b>		
<b>DEMARICATION</b> <b>METHOD STATEMENT</b> <b>Boundaries of “no go” areas, construction sites, offices, temporary storage areas as well as labourer’s facilities must be demarcated (EMP and ECO requirements) and maintained for the length of the construction period.</b>		
<b>NO-GO AREAS/PROTECTION OF FAUNA &amp; FLORA</b> <b>Identified “No-Go Areas”, remaining natural veld and indigenous- or significant trees are protected features and must be demarcated for protection from construction damage (including secondary impact).</b> All areas outside of the demarcated construction sites and access roads to be regarded as NO-GO areas unless otherwise agreed upon with the client and ECO. All flora identified to be rescued must be removed and placed in an area specifically allocated and taken care off until re-used in pre-approved way. Identified areas with significant vegetation must be protected as NO-GO areas.		
<b>CLEARING OF VEGETATION &amp; TOPSOIL REMOVAL</b> <b>METHOD STATEMENT</b> <b>Before any construction or earthworks, topsoil must be stripped (&gt;150mm) and stockpiled for rehabilitation/ landscaping.</b> <b>Stockpiles:</b> must be protected (may not blow or wash away or gets compacted) and stored separately. may not be moved further than 50m or mixed with any other soil. must be convex and should not exceed 2m in height. <b>In addition:</b> Cleared areas must be stabilized. Burning or burying of cleared vegetation is prohibited, but may be used for mulch or slope stabilisation on site.		
<b>STOCKPILING</b> <b>METHOD STATEMENT</b> <b>Top- and subsoil’s from trenches must be located within site boundaries, stabilised and may not exceed 2m in height.</b>		
<b>TEMPORARY STORAGE FACILITIES</b> <b>METHOD STATEMENT</b> <b>Must be demarcated, organised, neat and tidy and of acceptable standards.</b>		
<b>CONSTRUCTION CAMP &amp; SITE OFFICES</b> <b>METHOD STATEMENT</b> <b>Must be demarcated, organised and free of day-to-day litter (maintaining good housekeeping standards).</b>		
<b>FUEL STORAGE</b>		



ENVIRONMENTAL ASPECT	1-3 NA	COMMENTS
<b>Note: 1 = Poor, 2 = Average, 3 = Good NA = Not Applicable</b>		
<b>METHOD STATEMENT</b> <b>Fuel storage areas must be situated within the demarcated construction camp site (or an area approved by the ECO).</b> Bunds must be built (EMP and ECO requirements) around larger fuel storage areas (accidental spillages). Drip trays must be used (in accordance with EMP) at all fuel and oil storage and refilling sites and must be cleaned regularly, especially after rain.		
LABOURER'S FACILITIES <b>METHOD STATEMENT</b> <b>Facilities must be of acceptable standards suitably demarcated, well maintained, neat and tidy and with adequate ablution facilities.</b>		
ENTRANCE AND HAUL ROADS <b>METHOD STATEMENT</b> <b>Only approved entrance and haul roads may be used (existing roads and infrastructure). No new roads or parking areas may be developed without written approval from the ECO.</b>		
MANDATORY SITE EQUIPMENT <b>METHOD STATEMENT</b> <b>Mandatory site equipment must be in place, well maintained and in accordance with EMP and ECO requirements.</b> Sufficient refuse bins must be on site (well placed and conspicuous) and must be cleaned regularly. Fire extinguishers must be readily available, maintained and functional. Drip trays must be used (in accordance with EMP) at all fuel and oil storage and refilling sites and must be cleaned regularly, especially after rain. Toilets and sanitation facilities must be kept clean neat and hygienic (toilet paper must be available).		
WASTE CONTROL <b>METHOD STATEMENT</b> <b>The contractor is expected to control all construction related waste material and general litter on actual construction sites and its immediate surroundings.</b> Waste management must be in accordance with the EMP, of acceptable standards, with regular removal of general waste, hazardous waste as well as construction waste (e.g. concrete waste and spoil).		
CEMENT MIXING & BATCHING AREAS <b>METHOD STATEMENT</b> <b>Mixing areas must be approved by the ECO, suitably demarcated and may not result in pollution.</b> Polluted cement water may only be released into sedimentation ponds. Sedimentation ponds must be maintained and cleaned regularly (and reinstated after use).		
CONSTRUCTION VEHICLE MAINTENANCE <b>METHOD STATEMENT</b>		



ENVIRONMENTAL ASPECT	1-3 NA	COMMENTS
<b>Note: 1 = Poor, 2 = Average, 3 = Good NA = Not Applicable</b>		
<b>Construction vehicles must be in good working order and well maintained to prevent oil and fuel leakages and to reduce noise levels.</b>  Maintenance areas must be approved by ECO. Refuelling must be done in accordance with the EMP, using drip trays.		
HEAVY EARTHMOVING EQUIPMENT  <b>Construction vehicles and equipment may only operate <u>within</u> the demarcated site boundaries (and approved access roads), especially heavy earthmoving vehicles.</b>		
DUST CONTROL  <b>METHOD STATEMENT</b>  <b>Adequate control measures must be in place to prevent dust pollution as a result of construction activities (especially with regard to entrance-, haul roads and exposed surfaces).</b>  Areas of concern must be watered regularly during construction AND periods of strong winds, BUT must take water saving into account.		
EROSION CONTROL  <b>METHOD STATEMENT</b>  <b>Erosion resulting from works must be controlled.</b>  Temporary and permanent drainage works must be maintained. Erosion damage and damage in drainage courses must be reinstated.		
NOISE CONTROL  <b>METHOD STATEMENT</b>  <b>Effective noise control measures must be in place and acceptable working hours must be kept (deviations must be approval by the ECO).</b>		
ENVIRONMENTAL CONDUCT  <b>Environmental conduct of construction personnel must be acceptable (e.g. no burning or burying of refuse; no littering and no cement bags or other construction waste material lying around).</b>		
ARCHAEOLOGICAL & HERITAGE FINDS  <b>METHOD STATEMENT</b>  <b>Should any archaeological or heritage remains be exposed during excavations or any activity on site, these must immediately reported to The site agent/engineer, the ECO or SAHRA.</b>		
REHABILITATION  <b>METHOD STATEMENT</b>  <b>On completion of the project or phase, all areas impacted by the construction activities must be reinstated and/or rehabilitated to the satisfaction of the ECO with emphasis on the following:</b>  Site offices must be removed and the areas rehabilitated or reinstated to the satisfaction of the ECO. Labourer's facilities must be removed and the areas rehabilitated or reinstated to the satisfaction of the ECO. All construction site areas must be rehabilitated or reinstated to the satisfaction of the ECO. All temporary fencing and demarcation must be removed and the areas reinstated to the satisfaction of the ECO.		



ENVIRONMENTAL ASPECT	1-3 NA	COMMENTS
<b>Note: 1 = Poor, 2 = Average, 3 = Good NA = Not Applicable</b>		
Temporary storage areas must be rehabilitated or reinstated to the satisfaction of the ECO. All remaining construction material must be removed and the areas rehabilitated or reinstated to the satisfaction of the ECO. Any additional disturbed areas must be rehabilitated or reinstated to the satisfaction of the ECO.		
ADDITIONAL METHOD STATEMENTS <b>Method statements must be submitted and approved before commencement of the works and must be available at the site offices.</b>		
ENVIRONMENTAL CHECKLIST <b>The contractor must ensure that the weekly environmental checklist is completed at the end of each week and it must be available at the site offices.</b>		
SPOT FINES & PENALTIES <b>Spot fines and penalties must be recorded and documented by the ECO (in accordance with the EMP).</b>		
FIXED POINT PHOTOS <b>Photographs must be taken by the ECO, Site Engineer and or Site Manager, prior to, during and immediately after construction as visual reference. These photographs must be stored with other records relating to the EMP.</b>		

ECO:







## **APPENDIX 11: METHOD STATEMENT REGISTER**



METHOD STATEMENT REGISTER		Principle Site Agent:			Project Name:		
		Main Contractor:			Project location:		
No .	METHOD STATEMENT ACTIVITY REFERENCE	DATE CREATED	DATE RECEIVED	CREATED BY	ACCEPTED / REJECTED	DATE approved	Approved By
1	Demarcation						
2	Clearing of vegetation and topsoil removal						
3	Stockpiling						
4	Temporary storage facilities						
5	Construction camp and site offices						
6	Fuel storage						
7	Labourer's facilities						
8	Entrance and haul roads						
9	Mandatory site equipment						
10	Waste management/control						
11	Cement mixing and batching areas						
12	Construction vehicle maintenance						
13	Dust control						
14	Erosion control						
15	Noise control						
16	Archaeological and heritage finds						
17	Rehabilitation						
18							
19	<u>Additional MS (Waste Licence requirements)</u>						
20							
21							
22							







<b>APPENDIX 12: ENVIROMENTAL INCIDENT REPORT FORM</b>
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# ENVIRONMENTAL INCIDENT REPORT

PROJECT NAME:			
PROJECT LOCATION:			
SITE AGENT:			
DATE OF INCIDENT:		TIME:	
BRIEF DESCRIPTION AND CAUSE OF INCIDENT:			
WHAT IMMEDIATE ACTIONS/CONTROL MEASURES WERE TAKEN:			
WHAT CORRECTIVE ACTIONS WERE TAKEN TO ENSURE NO REPEATS OF THE INCIDENT:			
ECO/ESO RESPONSE TO INCIDENT AND RECOMMENDATIONS:			
IS THIS INCIDENT A:			
<input type="radio"/> FIRST OFFENCE <input type="radio"/> SECOND OFFENCE <input type="radio"/> THIRD OFFENCE			
SIGNATURE OF SITE AGENT: _____ DATE: _____			
SIGNATURE OF ECO/ESO: _____ DATE: _____			
REMEMBER: TO BE FACTUAL WHEN DESCRIBING THE INCIDENT.			







<b>APPENDIX 13: COMPLAINTS REGISTER FORM</b>
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# COMPLAINTS REGISTER FORM

(To be completed by Site Agent/Supervisor)

[illegible]



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**REFERENCE:** 16/3/3/6/1/D2/19/0109/24  
**DATE OF ISSUE:** 13 November 2024

The Director  
Zero Carbon Charge  
Groenhoeek Farm  
**VREDENDAL**  
8160

**Attention:** Mr. Joubert Roux

E-mail: [joubert@zerocc.co.za](mailto:joubert@zerocc.co.za)

Dear Sir,

**RE: ADDITIONAL INFORMATION IN RESPECT OF THE PROPOSED ESTABLISHMENT OF A RENEWABLE ENERGY GENERATION PLANT, ELECTRIC VEHICLE RECHARGE FACILITY, ENERGY STORAGE BATTERY UNITS AND ASSOCIATED STRUCTURES WHICH WILL BE LOCATED ON THE REMAINDER OF PORTION 7 OF THE FARM PALMIET DRIFT 80, GEORGE**

1. The following documentation and correspondence in respect of the abovementioned matter refer:
  - 1.1. the undated checklist submitted to the Department on 18 April 2024 ;
  - 1.2. comments issued by this Directorate on the 18 May 2024 with the following reference number (16/3/3/6/1/D2/19/0109/24) and;
  - 1.3. the additional information submitted to this Directorate on 11 October 2024.

2. This Directorate has reviewed the additional information and provides the following comment:

*2.1. Feasibility of the proposed facility*

According to the information provided to this Directorate, it is understood that the proposed facility, as designed, will operate as a viable and feasible stand-alone entity for the foreseeable future. According to the proponent there is no need to expand the proposed facility to make it viable and / or feasible.

However, it is understood that should an increase in capacity is deemed necessary in the area in future, the proponent will follow the appropriate application processes to ensure that the future capacity demands are met.

*2.2. Receiving Environment*

Vegetation:

The vegetation on the site where the development is proposed has been mapped as North Outeniqua Sandstone Fynbos, which has a gazetted conservation status of Least Concern. Relevant aerial imagery indicates that the proposed site contains areas of indigenous vegetation as well as a portion of land which is regularly ploughed. The portion of the proposed site which



has been lawfully ploughed, even though it may contain vegetation, does not constitute "indigenous vegetation".

The portion of the proposed site which has not been lawfully cleared in the preceding 10-year period contains indigenous vegetation; however, this portion of land is less than 1-hectare in extent.

Land used for agricultural purposes:

A large portion of the proposed site has been cultivated and is currently being used for agricultural purposes; however, this portion of land is less than 1-hectare in extent.

Aquatic features:

According to the information in the checklist and corroborated by relevant aerial imagery and GIS data there are no aquatic features within 32m of the edge of a watercourse.

Interim urban edge / urban area

The complete zoning information of the property has not been provided in the documentation. However, with due consideration of the location and extent of the property it is reasonable to assume that the property is zoned *Agriculture Zone I*. In accordance with this Department's NEMA EIA Circular 1 of 2012, and the information contained within the documentation, the property is regarded to fall outside the "interim urban edge" as adopted on 5 March 2012. For the purpose of the Environmental Impact Assessment Regulations, 2014 (as amended), the property is regarded to fall outside the urban area.

3. *Applicability of the Environmental Impact Assessment Regulations, 2014 (as amended)*

Based on the additional information provided to this Department, you are hereby informed that on the date of this response, the proposed establishment of a photovoltaic ("PV") electricity generation plant, charging infrastructure for electric vehicles ("EV"), energy storage batteries and associated structures on the Remainder of Portion 7 of the Farm Palmiet Drift 80, George in accordance with the Site Development Plan (Drawing No: C-N012-08-712-210-001) does not appear to constitute an activity listed in terms of GN No. R.983, R.984 or R.985 of 4 December 2014 (as amended), which has been promulgated under Chapter 5 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA").

Written authorisation is therefore NOT required from the relevant competent authority (as defined in GN No R.982 of 4 December 2014, as amended), prior to the undertaking of the said activity.

4. This determination is based on the following information provided to this Directorate:

- the proposed renewable energy generation plant and associated structures will generate less than 10MW electricity and will cover an area of less than 1ha;
- the proposed transmission lines will be less than 2km and will have a capacity of less than 33kV;
- the proposed facility will be located more than 32m away from the edge of a watercourse;
- the proposed facility will cover an area of less than 1ha in extent;
- a portion of the proposed site does contain indigenous vegetation, but this is less than 1-hectare in extent will be cleared of indigenous vegetation;
- a portion of the proposed site is currently used for an agricultural use; however, an area of less than 1-hectare will be transformed / developed for a commercial use; and
- access to the proposed facility will be obtained from the existing access road to the property.



5. *Phased activities:*

Notwithstanding the above, please be advised that the relevant listed activities are listed as a phased activities which means that they can be regarded as an activity that is developed in phases over time on the same or adjacent properties to create a single or linked entity. This implies that any one phase of the activity may be below a threshold, but where a combination of the phases exceeds the threshold, environmental authorisation must be obtained from the competent authority.

This includes activities which commenced on or after 8 December 2014 or similarly listed in any of the previous NEMA notices, which commenced on or after the effective date of such previous NEMA Notices but excludes any activity for which an environmental authorisation has been obtained in terms of the National Environmental Management Act, 1998 ("NEMA").

Considering the above and the details of the proposal, although the proposed facility will not trigger any listed activities, it will be regarded as the first phase of the facility. Once the first phase development is concluded and operational, and you identify the need at that stage to expand the facility, and such expansion will trigger a listed activity, you must first obtain the required environmental authorisation for the relevant listed activity prior to undertaking the next phase (expansion) of the facility.

You are advised to consult with the competent authority and obtain the necessary advice, prior to initiating any physical expansions of the proposed facility.

**NOTE:** The consideration of any application for the future expansion of the facility will be based on the merits of such an application submitted at that time. Therefore, the development and subsequent operation of the proposed first phase of the facility and its associated structures on the Remainder of Portion 7 of the Farm Palmiet Drift 80, George, must be considered in future applications; however, any future application for environmental authorisation for the expansion of the proposed facility (i.e., further phases) may be authorised or refused.

6. In light of the above, you may proceed with the proposed development of the facility on a renewable energy generation plant, electric vehicle recharge infrastructure, energy storage battery units and associated structures of less than 1-hectare, on a portion of the Remainder of Portion 7 of the Farm Palmiet Drift 80, George as it is understood that it will be able to operate as a stand-alone facility that does not require any further expansion/phases to ensure that it is viable or feasible.

7. *Solar Photovoltaic Exclusion and Battery Storage Facilities Norms:*

Please be advised that on 27 March 2024 the Minister of Forestry, Fisheries and the Environment adopted the Norm for the Exclusion of the Development and Expansion of Solar Photovoltaic Facilities in Areas of Low or Medium Environmental Sensitivity (Government Notice No. 4558 of 27 March 2024); and the Norm for the Exclusion of Identified Activities Associated with the development and Expansion of Battery Storage Facilities in Areas of Low or Medium Environmental Sensitivity (Government Notice No. 4557 of 27 March 2024).

In terms of the above, a proposed facility may not require environmental authorisation subject to compliance with the requirements of the abovementioned norms and standards. Therefore, you are advised to consider the development of facilities which may be considered in terms of the abovementioned norms and standards.

8. Furthermore, you are reminded of your general duty of care toward the environment, as required in terms of section 28 of NEMA, namely:



*"Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment".*

9. Please note that a listed activity may not commence prior to an environmental authorisation being granted by the Department. It is an offence in terms of Section 49A of the National Environmental Management Act, 1998 (Act no. 107 of 1998) ("NEMA") for a person to commence with a listed activity unless the competent authority has granted an environmental authorisation for the undertaking of the activity. A person convicted of an offence in terms of the above is liable to a fine not exceeding R10 million or to imprisonment for a period not exceeding 10 years, or to both such fine and imprisonment.

As the proposed facility may be developed and expanded in phases, you advised to keep accurate records of the site and its physical attributes so that you can demonstrate how the development relates to the threshold of each of the applicable listed activities, and to ensure that such thresholds are not exceeded without environmental authorisation.

10. Notwithstanding the content of this letter, the proponent must comply with any other statutory requirements that may be applicable to the undertaking of the proposed activity.
11. This Department reserves the right to revise or withdraw initial comments or request further information from you based on any information received.

Yours faithfully

---

**DIRECTOR: DEVELOPMENT MANAGEMENT (REGION 3)**  
**DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING**

Copied to:

**Proponent:**

Zero Carbon Charge

E-mail: [info@zerooc.co.za](mailto:info@zerooc.co.za)

**EnviroAfrica**

Mr. Jan-Taljaard Marx

Mr. Clinton Geyser

Ms. Zandria Jordaan

E-mail: [jan@enviroafrica.co.za](mailto:jan@enviroafrica.co.za)

E-mail: [clinton@enviroafrica.co.za](mailto:clinton@enviroafrica.co.za)

E-mail: [zandria@enviroafrica.co.za](mailto:zandria@enviroafrica.co.za)





## **MOUs & Letters of Support**





## AIDC Eastern Cape SOC Ltd

3198 Conyngham Road  
Ascot Park  
Building 6  
Parsons Hill  
Gqeberha  
PO Box 63835  
Greenacres  
6057  
Gqeberha  
Tel: +27 (41) 393 2100  
Fax: +27 (41) 363 0762  
E-mail: [info@aidcec.co.za](mailto:info@aidcec.co.za)  
Reg. Nr. 2003/018741/30

**Att: Mr. Joubert Roux**  
**Co-Founder and Director**

**Zero Carbon Charge (PTY) Ltd**  
Vredendal  
Western Cape  
8160

**Subject: Letter of Support for the Development of Off-grid, Green Electric Vehicle Charging Stations in the Eastern Cape**

**Dear Mr. Roux,**

This letter bears reference to your correspondence dated and received on the 11 April 2024.

The Automotive Industry Development Centre (Eastern Cape), an entity of the Provincial Government of the Eastern Cape, supports the transition towards the electric vehicle eco-system in alignment to the Just Energy Transition Investment Plan 2023–2027 and the White Paper: Electric Vehicle.

A key component of the delivery of the EV Ecosystem programme includes the roll-out of charging infrastructure within the Eastern Cape province. The development and investment of charging infrastructure includes both government investment and support, and private sector investment.

Zero Carbon Charge (Pty) Ltd. is contributing to development of the Eastern Cape EV Ecosystem by developing and installing off-grid electric vehicle charging stations powered by PV solar panels in the Eastern Cape. The AIDC-EC supports Zero Carbon Charge (Pty) Ltd. establishing a network of EV charging stations in the Eastern Cape. The project plays a crucial role in encouraging the adoption of electric vehicles and accelerating the transition to a cleaner and more sustainable transportation system.

The AIDC Eastern Cape supports the Zero Carbon Charge (Pty) Ltd. in securing an investment of R2.3 billion that will also benefit the Eastern Cape province. The AIDC Eastern Cape will collaborate with Zero Carbon Charge (Pty) Ltd. in promoting the Eastern Cape as a destination for investment into the future of the automotive industry. We believe that these investments, coupled with promoting green mobility and renewable energy, will facilitate and attract additional investment into the province, to further develop and grow the automotive EV sector in the Eastern Cape, in partnership with Zero Carbon Charge (Pty) Ltd.

The province welcomes the potential investment by Zero Carbon Charge and the opportunities they will create for the advancement of electric vehicles and the contribution to the growth of the economy of the Eastern Cape in South Africa.

Yours sincerely,

Mr Thabo Shenxane  
Chief Executive Officer  
**AIDC Eastern Cape**

Document Name: Letter Zero Carbon Charge (Pty) Ltd.

Rev. Nr.: 06

Revision Date: 15.01.2024

Document Number: GEN-FORM023

Document Status: Approved

Previous Revision Date: 05.10.2023

Page 1 of 1





**destea**

department of  
Economic, Small Business Development,  
Tourism and Environmental Affairs  
FREE STATE PROVINCE

Mr. Joubert Roux  
Co-founder & Director: Zero Carbon Charge  
Groenhoeek Farm Vredendal  
Western Cape  
8160

Dear Mr. Roux

**Subject: Support of the Electric Vehicle (EV) Infrastructure Development in the Free State through the Zero-Carbon Charge initiative.**

I am writing to you today on behalf of the Free State Department of Small Business Development, Tourism and Environmental Affairs (DESTEa)) to express our support to the Zero Carbon Charge on the development of a significant electric vehicle (EV) charging infrastructure network in the Free State Province.

The global transition towards sustainable energy and transportation solutions presents exciting opportunities for regions rich in natural resources such as ours. The Free State is particularly fortunate, boasting an abundance of grid availability potential, making it an ideal location for an extensive EV charging network. We at DESTEa recognize the immense potential of EVs to contribute to a cleaner and more sustainable future for South Africa. By supporting industry players like Zero Carbon Charge, the aim is to develop a robust EV charging infrastructure that will significantly enhance the potential EV experience in the Free State.

This initiative aligns perfectly with the vision outlined in the Free State plan to develop the Durban-Free State –Gauteng, R30, North-South (N1), N8 corridors development intended to promote not only better transport of goods between the end points, but will also boost economic development in the towns and rural areas along the way. A comprehensive EV network will further assist and accelerate the province's transition into providing carbon-neutral mobility solutions, not only contributing to decarbonization efforts but also creating a robust ecosystems.





**destea**

department of  
Economic, Small Business Development,  
Tourism and Environmental Affairs  
FREE STATE PROVINCE

DESTEA is fully supports this initiative as it will assist the hard-to-abate sectors to transform their operations and develop new low-carbon technologies and we welcome this type of investment into the Free State Province.

Thank you for your time and consideration.

Sincerely

Mbulelo Nokwequ

HoD: DESTEA

Date: 25/4/2024



**HEAD OFFICE**

PO Box 760

Lebowakgomo

0737

Tel: +27 15 633 4700

[www.leda.co.za](http://www.leda.co.za)



Mr. Joubert Roux  
Co-founder & Director: Zero Carbon Charge  
Groenhoeck Farm  
Vredendal  
Western Cape  
8160

Dear Mr. Roux,

**Subject: Expression of Support**

I am writing to you on behalf of the Limpopo Economic Development Agency (LEDA) to express our full support for the Zero Carbon Charge initiative's efforts to establish a robust electric vehicle (EV) charging infrastructure network across the Limpopo Province.

**Advancing Sustainability Initiatives**

The global transition towards sustainable energy and transportation solutions opens up numerous opportunities for regions abundant in renewable energy resources. Limpopo, with its significant solar potential, is ideally positioned for the development of an extensive EV charging network. LEDA recognizes the transformative impact EVs can have in guiding South Africa towards a cleaner, more sustainable future. By endorsing industry leaders like Zero Carbon Charge, our goal is to facilitate the creation of a resilient EV charging infrastructure, thereby greatly enhancing the EV landscape in Limpopo.

**Aligning with Environmental Objectives**

This initiative perfectly aligns with the vision outlined in Limpopo's Green Energy Strategy and Masterplan. A comprehensive EV network will reinforce the province's commitment to sustainability by offering carbon-neutral mobility solutions, thereby not only advancing decarbonization efforts but also nurturing a vibrant ecosystem for green energy utilization. LEDA's Commitment

Registered address: Enterprise Development House, Main Road, Lebowakgomo, 0737, South Africa

**Directors:**

Mr CC Nkadameng (Deputy Chairman)  
Mr M Maphutha, Adv TM Ncube, Mr MS Ralebipi, Ms N Magadagela CA(SA), Mr AC Chikane,  
Mr TR Makhuvha (CEO) Mr F Magidi (CFO), Mr NB Mokobane (COO)

Interim Company Secretary: Moketla Mamabolo Attorneys



## Support for Zero Carbon Charge

LEDA is firmly committed to supporting the development of this initiative. We strongly believe that this project aligns with the commercialization pathways outlined in the Green Energy Strategy, with a specific focus on decarbonizing energy sectors through the adoption of clean transportation solutions.

Thank you for your valuable time and consideration. We eagerly look forward to the opportunity to collaborate with you in driving Limpopo Province towards a sustainable future.

Warm regards,



Mr. Thakhani Makhuvha  
Group Chief Executive Officer  
Date: 19/4/2024

---

Registered address: Enterprise Development House, Main Road, Lebowa-Kgomo, 0757, South Africa

#### Directors:

Mr CC Nkadimeng (Deputy Chairman)  
Mr M Maphutha, Adv TM Ncube, Mr MS Ralebipi, Ms N Magadagela CA(SA), Mr AC Chikane,  
Mr TR Makhuvha (CEO) Mr F Magidi (CFO), Mr NB Mokobane (COO)

Interim Company Secretary: Moketla Mamabolo Attorneys



# Memorandum of Understanding (MOU)

Between



## Zero Carbon Charge (PTY) Ltd

A South African private enterprise registered company (Reg Nr: 2022/232376/07) focused on developing the world's first off-grid, PV solar powered, and ultra-fast electric vehicle (EV) charging station network across South Africa

Herein represented by **Mr Joubert Roux and Mr Andries Malherbe** in their capacity as Co-founders and Directors and duly authorised thereto

(Herein referred to as "CHARGE")

And



ROOTED IN THE FUTURE

## LIMPOPO ECONOMIC DEVELOPMENT AGENCY

Established in terms of Section 2 of the Limpopo Economic Development Agency Act 5 of 2016, herein represented by **Thakhani R Makhuvha** in his capacity as **Chief Executive Officer** being duly authorised hereto

(Hereinafter referred to as "LEDA")

(Collectively referred to as "the Parties")

*[Handwritten signatures and initials]*



## 1. PREAMBLE

**WHEREAS** the CHARGE has a mandate to improve the migration towards green mobility and renewable energy by establishing off-grid EV charging stations powered by PV solar panels. Electric mobility will reduce carbon emissions to support net-zero transport in South Africa, while PV solar panels will create opportunities for the localization of energy within rural communities through the PV solar used to power the EV charging infrastructure.

**WHEREAS** By developing EV charging stations across South Africa, and specifically the Limpopo Province, the opportunity to migrate transport to green mobility and creating local renewable energy points for communities, CHARGE will support the economies within rural areas of South Africa.

**WHEREAS** the LEDA will act as a facilitator and custodian over the project rollout for off-grid EV charging stations developed and privately funded by CHARGE throughout the Limpopo Province.

**WHEREAS** LEDA will facilitate engagements and education with local governments across the Limpopo Province as well as provincial commenting authorities.

**AND WHEREAS CHARGE** and **LEDA** have identified each other as entities that can co-operate and/or collaborate for the purpose of **developing EV charging infrastructure, renewable energy structures, green mobility, as well as the overall economic development to enhance economic growth for the people of the Limpopo Province; and**

**NOW THEREFORE CHARGE** and **LEDA** undertake to co-operate on mutually beneficial terms as set out hereunder.



Handwritten signatures and initials at the bottom right of the page, including a large signature, the initials 'TR', and a circled 'A'.



## 2. DEFINITIONS

- 2.1 **"CHARGE"** means the Zero Carbon Charge, A South African private enterprise registered company (Reg Nr: 2022/232376/07) focused on developing the world's first off-grid, PV solar powered, and ultra-fast electric vehicle (EV) charging station network across South Africa.
- 2.2 **"LEDA"** means the Limpopo Economic Development Agency.
- 2.3 **"DATE OF SIGNATURE"** means the date of the last Party signing this MOU;
- 2.4 **"MOU"** means this Memorandum of Understanding and includes all Annexure thereto, if applicable ;
- 2.5 **"PARTIES"** means the Parties to this MOU and a reference to a "Party" is a reference to either one of them as determined by the context;
- 2.6 **"EV"** means electric vehicles

## 3. PARTIES TO THE AGREEMENT

- 3.1 Zero Carbon Charge is a South African private enterprise registered company (Reg Nr: 2022/232376/07) focused on developing the world's first off-grid, PV solar powered, and ultra-fast electric vehicle (EV) charging station network across South Africa.
- 3.2 The LEDA is a public entity established in terms of section 3 of the Limpopo Economic Development Agency Act, No. 5 of 2016 and listed under schedule 3D of the Public Finance Management Act, No 1 of 1999. LEDA's mission is to accelerate economic growth, development and create employment.

## 4. COMMENCEMENT AND DURATION

- 4.1 This MOU shall come into force upon signature hereof by the last Party signing and shall continue to remain in force for a period of five (5) years, after which it shall be renewed automatically unless terminated by either Party in terms of clause 6.

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- 4.2 This MOU shall be reviewed annually by the Parties on the anniversary of the MOU.

## **5 PURPOSE OF THE MEMORANDUM OF AGREEMENT**



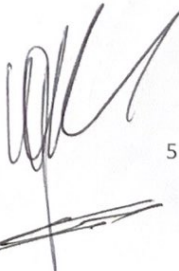
- 5.1 The purpose of this Memorandum of Understanding (MoU) is to set out how CHARGE and LEDA agree to cooperate and collaborate on issues related to EV charging infrastructure development, renewable energy infrastructure development and support from provincial and local governments in the Limpopo Province to be in line with the goals of achieving net-zero transport and energy resilience in the Limpopo Province.
- 5.2 This is a memorandum of general agreement and specific agreements will be concluded on a project-by-project basis. The MoU clarifies the benefits for the partner organisations and the roles they will play under this agreement.
- 5.3 The document serves to formalise the relationship between CHARGE & LEDA Memorandum of Understanding and will expire after five (5) years.

## **6. TERMINATION**

- 6.1 This MOU may be terminated by either Party by giving thirty (30) days written notice to the other Party;
- 6.2 The termination of this MOU shall not affect any on-going projects or activities undertaken prior to the termination of this MOU, unless otherwise agreed upon in writing by the Parties.

## **7. AMENDMENTS AND VARIATION**

- 7.1 The Party wishing to amend or vary this MOU must request such amendment or variation in writing. Such amendment must be considered by the other Party and the other Party shall not unreasonably withhold consent to the amendment or variation.

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- 7.2 Once the amendment or variation is accepted by the Parties it must be reduced to writing and attached to this MOU as an Annexure.

## 8. IDENTIFIED AREAS OF COLLABORATION

- 8.1 Reducing red tape and barriers to entry by provincial and local governments that hinder the development of CHARGE off-grid EV charging infrastructure in Limpopo
- 8.2 To assist in identifying and advising on additional sites on which further EV charging infrastructure can be developed in the province – extending to electric truck stops too.
- 8.3 Acting as a custodian of the CHARGE project in Limpopo as a “one stop shop” for all engagements, grievances, and communications.
- 8.4 To foster a positive, investment friendly environment in the province for the successful and speedy rollout of our car sites, with the future intention of expanding to truck charging sites that are also off-grid.

## 9. GOVERNANCE ARRANGEMENTS

- 9.1 In order to facilitate cooperation and collaboration, a standing committee consisting of CHARGE and LEDA should assign officials to ensure implementation for the duration of the MoU.
- 9.2 A project level steering committee may be established for each activity and the terms of reference for such committees will have to be agreed by both parties. The steering committees may include people not in the standing committee, as a governance arrangement.
- 9.3 The host party shall be responsible for arranging logistics and secretariat services for these meetings.

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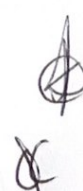



## 10. ROLES IN THE STANDING COMMITTEE

- 10.1 **CHAIR:** Meetings to be chaired on a rotation basis by the CHARGE and LEDA delegates (co-chairs may be designated on an annual basis).
- 10.2 **SECRETARIAT:** The CHARGE and LEDA will alternate on the provision of secretariat services to the standing committee.
- 10.3 **MEETINGS** Meetings will take place twice in a year, for the first financial year to ensure implementation of the objectives, thereafter meetings will be held once a year.

## 11. CONFIDENTIALITY

- 11.1 The Parties undertake and warrant that they will not directly or indirectly divulge, communicate, or use for their own purpose confidential information (unless as provided for in the terms of reference), or otherwise permit to be divulged or communicated by them or by any consultant, officer, employee or agent of either party, any confidential information supplied to it by the other in respect of the terms of reference to any unauthorised person.
- 11.2 The restriction in clause 13.1 shall not apply to information to the extent that the party to this Agreement in possession of it ("hereinafter referred to as the Possessing Party") can show that:
- 11.2.1 the information is in the public domain otherwise than by virtue of a breach of this Agreement; or
  - 11.2.2 the information was expressly permitted to be disclosed by the other; or
  - 11.2.3 the information was independently developed or created by the possessing party otherwise than for the purposes of or relating to this Agreement; or

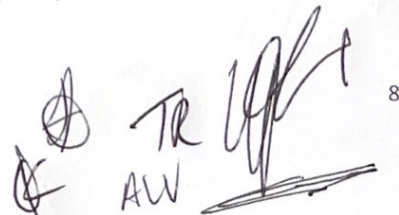
 TR  
AV  7



- 11.2.4 required to be disclosed in response to a valid order of court or other governmental
  - 11.2.5 agency, or if disclosure thereof by the disclosing Party is otherwise required by law; or
  - 11.2.6 such information related only to this Agreement and is required by any regulatory body;
  - 11.2.7 the disclosure of same by the possessing Party to its legal advisers, auditors or other professional advisors for any purpose connected with this Agreement provided that they in turn keep the same confidential in accordance with this clause 6.
- 11.3 The undertakings contained in this clause 13 shall terminate by written consent from both parties within 30 (thirty) days' notice.
- 11.4 If a Party is obliged to divulge Confidential Information in terms of it shall, before the divulgence of the Confidential Information, inform the other Party of its obligation to so divulge the Confidential Information.
- 11.5 Each Party undertakes to the other to make all its relevant Personnel aware of the confidentiality of the Confidential Information and the provisions of this clause 8 and to take all such steps as shall from time to time be necessary to ensure compliance by its Personnel with the provisions of this clause 8.

## 12. VIS MAJOR

A Party shall not be liable for any failure to fulfil any of their obligations under this Agreement insofar as such failure is due to force majeure, for which purpose force majeure shall include but not be limited to all events beyond the reasonable control of the Party claiming force majeure which cannot be foreseen, or if foreseeable cannot reasonably be avoided, which occur after the Effective Date and that prevents or hinders the carrying out of the obligations of the Party claiming force majeure, and without limitation

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shall include acts of God or acts of nature (the elements), war (whether declared or not), blockage, embargo, boycott, revolution, invasion, insurrection, riot, civil commotion, mob violence, sabotage, epidemics, quarantine or other similar reasons. If the suspension of performance due to an event of force majeure continues for more than 15 (fifteen) days, then either Party may summarily terminate this Agreement by written notice to the other Party, prior to the cessation of the force majeure, but the non-affected Party shall not be entitled to claim damages against the Affected Party as a result of the delay or failure in the performance of any obligations arising from this Agreement due to or resulting from the force majeure

**13. NON-EXCLUSIVITY**

It is recorded, for the avoidance of doubt that this Agreement does not purport to create an exclusive relationship between the Parties. In the circumstances all Parties shall be free to embark on potential terms of reference with other Parties. The Parties hereby agree that this is not an exclusive agreement and other Parties can be brought in to participate in terms of this Agreement by amending by becoming signatories as well.

**14. NON - BINDING**

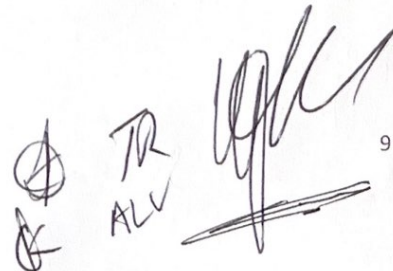
It is recorded that this MOU does not constitute a legally actionable document and any misunderstandings and breaches will be mutually resolved amongst the parties with no recourse to a court of law.

**15. TRANSPARENCY AND GOOD FAITH**

Each Party hereby undertakes during the existence of this Agreement

15.1 to show to each other, at all times, the utmost good faith in its dealings with each other;

15.2 to do all such reasonable things, perform all such reasonable actions and

Handwritten signatures and initials. On the left, a circular stamp with a cross inside. Next to it, the initials 'TR' and 'ALV' are written. To the right, there is a large, stylized signature. A small number '9' is written to the right of the signature.



15.3 take all such reasonable steps as may be open to it and necessary for and incidental to the implementation of the terms and conditions of this Agreement.

#### 16. NON-WAIVER

16.1 Neither Party shall be regarded as having viewed, or be precluded in any way from exercising, any right under or arising from this Agreement by reason of such Party having at any time granted any extension of time for, or having shown any indulgence to, the other Party with reference to any payment or performance hereunder, or having failed to enforce, or delayed in the enforcement of, any right of action against the other Party

16.2 The failure of either Party to comply with any non-material provision of this Agreement shall not excuse the other Party from performing the latter's obligation hereunder fully and timeously.

#### 17. MEDIA RELEASES

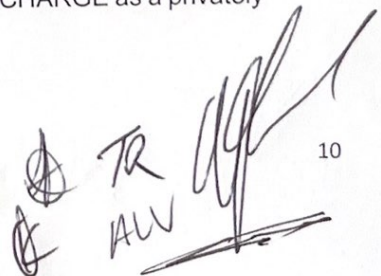
17.1 Each of the Parties undertakes in favour of the other that it will not make any releases or public announcement to the press or other media on any issue pertaining to this Agreement without first having obtained the prior written consent of the other Party.

17.2 Any Party that embarks on media releases or public announcements without obtaining permission from the other Party shall be deemed to have committed a breach in which case it shall be dealt with in terms of clause 23.

#### 18. COSTS

18.1. The costs incurred by this project will be incurred by CHARGE as a privately funded company.

TR  
ALW



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18.2 Each party shall incur its own costs during the collaboration and facilitation of this agreement.

## 19. INDEMNITY

The Parties agree to indemnify each other, its directors, employees, affiliates and agents from and against any direct or indirect special, punitive, or consequential event (including loss of profits, or injury to business reputation, or liability, or damages, or penalties), which may be imposed on or incurred in terms of this Memorandum of Understanding, or based upon or arising out of either Party's performance of or failure to perform the activities described herein.

## 20. TRANSFER OF FUNDS

The parties acknowledge and agree that this memorandum of agreement does not create any financial or funding obligations on either party and that such obligation shall arise only upon joint execution of a subsequent agreement or work plan (which shall include a budget) that specifically delineates the terms and nature of such obligations that references this Memorandum of Understanding comply with all legal obligations and statutes governing each party.

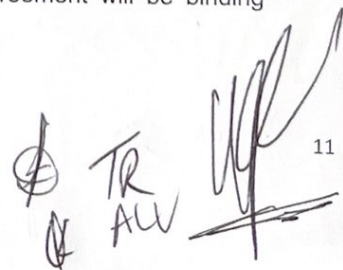
## 21. DISPUTE RESOLUTION

The Parties shall make all reasonable efforts to settle any dispute through consultation and mediation held by and between representatives of the Parties and resolve the matter.

## 22. AMENDMENTS

No amendments or consensual termination of this Agreement will be binding unless reduced to writing and signed by the Parties.

TR  
ALW



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### 23. COUNTERPARTS

This Agreement may be executed in any number of counterparts and by different Parties hereto in separate counterparts, each of which when so executed shall be deemed to be an original and all of which when taken together shall constitute one and the same Agreement.

### 24. DATE OF IMPLEMENTATION

Notwithstanding the date of signature, this Memorandum of Understanding takes effect upon being signed by both parties.

### 25. DOMICILIUM CITANDI ET EXECUTANDI

Any notice or other document to be served under this agreement to a party may be served at its address as set out below:

**Zero Carbon Charge (PTY) Ltd**

Groenhoeck Farm

Vredendal

Western Cape

8160

Contact Person

Ms Larissa Venter

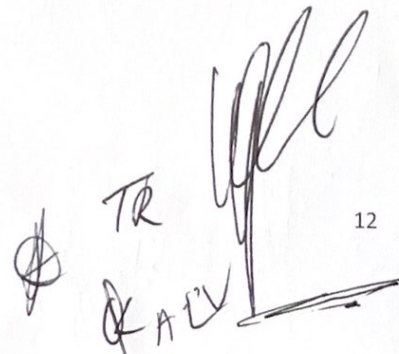
Head of Government Relations

082 591 7532/[larissa@charge.co.za](mailto:larissa@charge.co.za)

**Limpopo Economic Development Agency**

Address: Enterprise Development House  
Main Road  
Lebowakgomo

TR  
12

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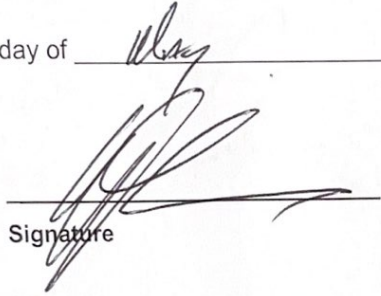


## 17. SIGNATORIES

This agreement is signed by **Mr Joubert Roux** on behalf of the **Zero Carbon Charge (PTY) LTD** and Mr Reuben Thakhani Makhuvha on behalf of the **Limpopo Development Agency** who warrant that they have the necessary authority to enter into this agreement.

DONE AND SIGNED in Concession on this 21<sup>st</sup>

day of May 2024.

  
Signature

For **CHARGE** who hereby affirms that he is duly authorised to sign this agreement on its behalf.

Full names: Mr Joubert Roux

Designation: CEO

  
TR  
ALV




As Witnesses:

1. Name: Juanita van der Merwe Signature: 

2. Name: \_\_\_\_\_ Signature: \_\_\_\_\_

THUS, DONE AND SIGNED in CENTURION on this 7TH

day of MAY 2024.

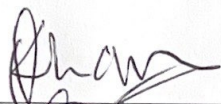
  
Signature


For LEDA who hereby affirms that he is duly authorised to sign this agreement on its behalf

Full names: THAKHANI REUBEN MAKHUUHA

Designation: GROUP CHIEF EXECUTIVE OFFICER

As Witnesses:

1. Name: OWAIZ KHAN Signature: 

2. Name: Larissa Kenter Signature: 




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Enquiries: Mr. H Louw | Telephone: 053 110 0289 | email: [officeoftheceo@nceda.co.za](mailto:officeoftheceo@nceda.co.za) | Ref: Support letter to Zero Charge initiative

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**Mr. Joubert Roux**

Co-founder & Director: Zero Carbon Charge

**Address:**

Groenhoeck Farm  
Vredendal  
Western Cape  
8160

**Subject: Support of the Electric Vehicle (EV) Infrastructure Development in the Northern Cape through the Zero-Carbon Charge initiative.**

Dear Mr. Roux,

I am writing to you today on behalf of the Northern Cape Economic Development Trade, Investment Promotion Agency Investment Promotion Agency, (NCEDA) to express our support to the Zero Carbon Charge on the development of a significant electric vehicle (EV) charging infrastructure network in the Northern Cape Province.

**Aligning with Sustainable Growth**

The global transition towards sustainable energy and transportation solutions presents exciting opportunities for regions rich in renewable energy resources. The Northern Cape is particularly fortunate, boasting an abundance of solar and wind potential, making it an ideal location for an extensive EV charging network. We at NCEDA recognize the immense potential of EVs to contribute to a cleaner and more sustainable future for South Africa. By supporting industry players like Zero Carbon Charge, the aim is to develop a robust EV charging infrastructure that will significantly enhance the potential EV experience in the Northern Cape.



### **Strengthening the Green Hydrogen Proposition**

This initiative aligns perfectly with the vision outlined in the Northern Cape Green Hydrogen Strategy and Masterplan. A comprehensive EV network will further solidify the province's value proposition by providing carbon-neutral mobility solutions, not only contributing to decarbonization efforts but also creating a robust ecosystem for green hydrogen utilization.

### **NCEDA's Commitment to Support**

NCEDA is fully committed to supporting the development of this initiative. We believe this project aligns with the commercialization lanes identified within the Green Hydrogen Strategy, specifically targeting the decarbonization of hard-to- abate sectors through the adoption of clean transportation solutions.

Thank you for your time and consideration. We look forward to partnering with you in advancing a sustainable future for the Northern Cape.

Sincerely,



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Hendrik Louw  
**Acting Chief Executive Officer**  
Northern Cape Economic Development Agency (NCEDA)  
10 April 2024





# **Traffic Impact Statement**



Enquiries: Annebet Krige  
Cell: 084 610 0233  
Email: [annebet@sturgeonsa.co.za](mailto:annebet@sturgeonsa.co.za)

Our Ref: STUR0371  
Your Ref:

29 March 2023

**Zero Carbon Charge (Pty) Ltd**  
PO Box 671  
**VREDENDAL**  
8160

**ATTENTION: Mr Joubert Roux**

Dear Sir,

**PROPOSED ELECTRICAL VEHICLE CHARGING STATIONS ACROSS SOUTH AFRICA: BASIC TRAFFIC IMPACT ASSESSMENT**

Sturgeon Consulting was appointed to prepare a Basic Traffic Assessment for proposed Electrical Vehicle Charging Stations at various locations across South Africa. This letter should assess and determine the possible traffic impact that an individual proposed Electrical Vehicle Charging Station development will have on the existing road infrastructure.

**1. BACKGROUND**

Currently South Africa has less than 1 000 electric vehicles (EVs), but it is expected that this number will grow to approximately 130 000 EVs by 2027, less than 1.5% of registered vehicles, and that by 2032, 24% of new vehicle sales will be EVs. To allow for the successful transition from fossil fuel dependent vehicles to EVs it is critical that reliable infrastructure be available across South Africa.

Zero Carbon Charge is the first 100% renewable energy charging network for EVs in Africa. Their mission is to build a network of 130 green energy-powered ultra-fast charging stations across South Africa. A reliable and green network will enable the migration from internal combustion to zero carbon in the South African transport sector. By providing charging stations nationwide it will encourage motorists to purchase EVs and travel freely across the country without range limitations. Currently EVs have a range between 350km and 400km. The proposed ultra-fast charging stations will be located approximately 150km apart along the major national and provincial roads. To



ensure that no additional strain is placed on the Eskom grid, all charging stations will be driven by solar farms, less than 1ha in size. The energy generated by these solar farms will be stored in batteries.

## 2. LOCATION

Along the national highways and the regional highways of South Africa, 200 possible site locations have been identified for the development of EV Charging Stations. Potential sites have to be located close to major routes, be large enough to have 4 or 5 EVs charging simultaneously and have the potential to accommodate the renewable energy generation facilities required. Sites also have to provide EV users with convenient and safe charging locations.

The potential sites all belong to local entrepreneurs or local farmers and by collaborating on the project, employment opportunities are created while economic activity in rural areas are being stimulated.

## 3. PROPOSED DEVELOPMENTS

As previously mentioned, each of the proposed developments will consist of charging stations, a farmstall (newly built or existing) and solar panels. The renewable energy portions of the proposed developments will be located at the optimal location for the generation of electricity on the subject properties. The charging stations and the farmstalls will be located in close proximity to each other. The existing agricultural activities will continue on the properties alongside the proposed developments.

The renewable energy portion of each of the proposed developments will have a size of approximately 8350m<sup>2</sup> and will generate electricity that will be used for the charging of EVs. Electricity will be generated by solar panels (footprint of approximately 8350m<sup>2</sup>).

Each of the charging stations (approximately 52m<sup>2</sup>) will provide parking bays in accordance with the applicable requirement and will be fitted with a charging point for EVs and will be covered by a steel canopy. Additional parking bays for the farmstalls will be provided and visitors to the charging station will be encouraged to visit the facilities while their EVs are charging.

It should be noted that EVs are predominantly charged at home (approximately 70% of the charging required for EVs) which is in contrast to internal combustion engine (ICE) vehicles which can only be refueled at filling stations. Furthermore, it is anticipated most EVs will be used in built up areas with less than 50% of EVs in the rural areas. The number of EVs along rural roads will however increase during holiday periods when holiday goers visit / traverse these areas.



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## 4. TRAFFIC INFORMATION

### 4.1. Provincial Road Network Information System (RNIS) and similar

Traffic count information is available from the Provincial Road Network Information System (RNIS) for counting stations located along provincial roads in the Western Cape. The information available includes the Average Annual Daily Traffic (AADT), historic growth rates and the number of vehicles (two-way) during the AM and PM peak hours along provincial roads. The traffic count information relates to a typical day and does not account for seasonal traffic variations. Similar information can also be obtained for the various other provinces, although not all provinces provide this level of detailed information.

### 4.2. SANRAL

The South African National Roads Agency Limited (SANRAL) has permanent and temporary counting station located at various locations across South Africa. The traffic count information can be requested from SANRAL and the traffic count data includes a summary of the Average Daily Traffic (ADT), Percentage Trucks and the Highest volume on the road for the years recorded. The traffic count information relates to the average daily traffic and does not account for seasonal traffic variations.

## 5. TRIP GENERATION

The *TMH17 South African Trip Data Manual (Committee Draft 2.2, August 2020)* published by the Committee of Transport Officials (COTO), does not provide specific guidelines on the trip generation rates for EV charging stations, farmstalls or solar facilities.

The following trip generation rates were however considered:

### 5.1. FILLING STATION

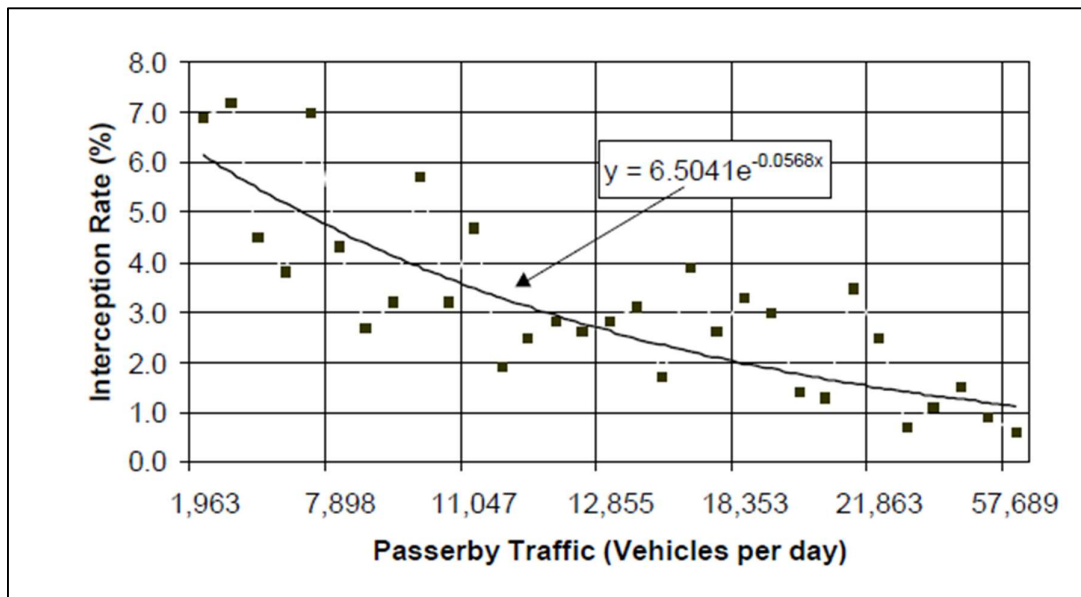
According to the *Department of Transport South African Trip Generation Rates (DOT SATGR), June 1995*, the following trip generation rates for Filling Stations are applicable:

- For Urban Areas: 4% during AM and PM Peak Hour and during 12- and 24-hour periods.
- For National and Provincial Freeways: 30% Light Vehicles and 40% Heavy Vehicles during 12- and 24-hour periods.
- 16% of trips attracted to filling stations are new trips, i.e., additional traffic on the road network.

Furthermore, the Revision of the Guidelines for Access to Filling Stations in the Greater Pretoria Area, JL Coetzee, F van Rensburg, H Schreurs, 2001, provides a graph based on 35 studies at filling



stations of varying location and with different volumes of pass by traffic to estimate the interception rate. Refer to **Figure 1**.



**Figure 1 Interception Rates, JL Coetzee, F van Rensburg, H Schreurs, 2001**

No information (locally or internationally) could however be sourced on the trip generation rates for EV charging stations.

It is however important to note that filling stations are generally constructed for the maximum capacity which is generally calculated in accordance with the DOT SATGR guidelines or alternatively the interception rates provided in **Figure 1**. Limited infrastructure development and constraints to energy supply will only accommodate 18-20 EVs to be serviced daily at each charging facility, whereafter the navigational software will indicate that the charging facility has reached its daily capacity. The number of vehicles that can be serviced daily is directly derived from the generating capacity associated with the solar infrastructure (1000kW daily) that will be provided at each charging station (18 cars x 55kW/car = 990kW daily). This number will however increase in the future and the charging stations will need to be expanded accordingly. This expansion will be addressed at a future stage with a new round of approvals.

Information obtained from Zero Carbon Charge indicated that there are currently 10 million registered vehicles on South African roads, **with less than 1000 being Electrical Vehicles. This accounts for approximately 0.01%.** The National Association for Automobile Manufactures in South Africa (NAAMSA) provided the following rollout of EVs over the next 5 years in relation to the number of new vehicles sold annually. The number of new vehicles sold per year, inclusive of Internal Combustion Engine vehicles (ICE), Battery-powered Electrical vehicles (BEV), Plug-in Hybrid Electric Vehicles (PHEV) and Hybrid vehicles, is indicated as the Total. It must be noted that this paper only references BEVs as PHEV and Hybrid vehicles will not use the charging facilities.



The batteries of PHEVs are too small to be of use for long distance travelling, when they will use their combustion engines and stop at petrol stations, and Hybrids, by definition, are never plugged in to a charger as they generate their own electricity from a combustion engine:

**Table 1: NAAMSA PROJECTED ROLLOUT OF EVs**

	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>
ICE	407 066	403 573	399 338	380 060	378 611	371 506
BEV	4 285	8 870	13 770	23 754	34 419	50 891
PHEV	4 285	8 870	13 770	23 754	29 502	35 624
Hybrid	12 855	22 174	32 131	45 507	40 170	50 891
<b>Total</b>	<b>428 491</b>	<b>443 487</b>	<b>459 009</b>	<b>473 075</b>	<b>482 702</b>	<b>508 912</b>

Taking the above into consideration, the percentage of EVs on South African roads in relation to the total number of vehicles sold per year, the number of ICE vehicles on our roads and the limited generating capacity of each charging station, the charging stations will not incur a traffic impact at the proposed charging station in the foreseeable future. It is therefore anticipated that the trips generated by the farmstalls will be a sufficient measure to determine the trip generation of the proposed developments. Furthermore, the charging stations will not generate additional (new/primary) trips. It can therefore be assumed that most of the trips that will visit the charging station are already on the network and can be considered pass-by trips.

## 5.2. SOLAR FACILITY

Solar facilities generally generate trips during the Construction, Operational and Decommissioning phases. Experience with calculating the trips associated with each of these facilities for various large Solar-Facilities throughout South Africa, indicates that facilities of this magnitude (related to the charging stations) will generate minimal trips and will have an insignificant traffic impact.

## 5.3. FARMSTALLS

The vehicle trips that will be generated by the farmstalls can be based on the peak hour trip generation rates provided in the *Trip Generation Manual 9th Edition, 2012* published by the Institute of Transport Engineers (ITE) for Speciality Retail (ITE826). For the AM peak hour, a trip generation rate of 0.68 trips / 100m<sup>2</sup> GLA and a directional split of 48%:52% (in:out) and a trip generation rate of 2.71 trips / 100m<sup>2</sup> GLA and a directional split of 44%:58% (in:out) for the PM peak hour is proposed. For the Saturday peak hour, a trip generation rate of 4.97 trips / 100m<sup>2</sup> GLA and a directional split of 48%:52% (in:out) is proposed.

The recommended peak hour trip generation rates and directional split per 100m<sup>2</sup> GLA is shown in **Table 2**.



**Table 2: Trip Generation Rates and Estimated Peak Hour Trips**

Peak Hour	Extent	Trip Generation Rate	Directional Split		Trip Generation	
			In [%]	Out [%]	In	Out
Farmstall						
AM	100m² GLA	0.68	48	52	0	0
PM		2.71	44	58	1	2
SAT		4.97	50	50	3	3

## 6. TRAFFIC IMPACT

From Section 5, the following assumptions can be made in terms of traffic impact:

- EV Charging Station: 2 trips per peak hour<sup>1</sup> - INSIGNIFICANT (<50 peak hour trips)
- Farmstall: 0-6 trips per peak hour - INSIGNIFICANT (<50 peak hour trips)

## 7. EXISTING - AND PROPOSED ACCESSES

Accesses must follow the requirements set out in the *TMH26 South African Road Classification and Access Management Manual, October 2019* published by the Committee of Transport Officials (COTO), the *SANRAL Geometric Design Guidelines (G2 Manual)* and the regulations of the applicable provincial and local government in the vicinity of the sites.

The required Shoulder Sight Distance (SSD) for a Passenger Vehicle (P), a Single Unit Truck (SU) and a Single Unit Truck plus Trailer (SU + T) must be investigated at each of the proposed accesses. It is proposed that the sight triangle in both directions at any of the proposed accesses be kept clear of any high growing crops/grains to ensure acceptable sight distances. It is however assumed that the SSD requirements are met at the existing farm stall accesses, as these developments would have undergone the necessary approvals.

### 7.1. RIGHT - AND LEFT TURN WARRANTS

Key intersections and proposed access intersections of the proposed developments should be investigated to determine if right - or left turn lanes are warranted. SANRAL generally requires a separate right turn lane if the volume of right turning vehicles along their routes exceed 30 vehicles per day. The warrants for right - and left turn lanes are provided in, inter alia, the *Access Management Guidelines, 2020* published by the Western Cape Government's Transport and Public Works Department. The addition of a dedicated right - or left turn lanes will also be dependent on the growth of EV ownership and usage in South Africa as well as future possible expansions of the proposed developments where access is directly from a national road.

<sup>1</sup> This is derived by assuming that 10% of the daily trips will access the charging station during the peak hour. This is a general assumption used by Traffic Engineers based on research data.



## 8. PARKING REQUIREMENTS

Parking provision for the proposed developments should satisfy the requirements as suggested in the local authority's most recent zoning scheme. As previously mentioned, the charging stations will act as additional parking for the farmstalls since it is expected that visitors will make use of the farmstall while waiting for their EV to charge. Sufficient parking will be provided at each of the proposed developments 6 parking bays per 100m<sup>2</sup> GLA. The proposed developments will have an initial size of 100m<sup>2</sup>.

## 9. NON-MOTORISED AND PUBLIC TRANSPORT

It is not anticipated that many additional public transport – or non-motorised transport trips will be generated by any of the proposed developments. However, additional public transport – or non-motorised transport facilities will be investigated for each of the subject properties.

## 10. CONCLUSIONS AND RECOMMENDATIONS

From the above, the following conclusions are made:

- South Africa has less than 1 000 electric vehicles (EVs), but it is expected that this number will grow to approximately 130 000 EVs by 2027.
- Zero Carbon Charge aims to build a network of 130 green energy-powered ultra-fast charging stations across South Africa.
- The location of the charging stations will be along national highways and the regional highways of South Africa.
- The proposed developments will consist of charging stations, a farmstall and solar panels.
- Each charging station will be limited by the generating capacity of the solar panels at the charging station and will only be able to service 18-20 EVs daily. This translates to approximately 2 peak hour trips which will visit the charging station.
- The charging stations will not generate additional (new/primary) trips. It can therefore be assumed that most of the trips that will visit the charging station are already on the network and can be considered pass-by trips.
- The construction, operational and decommissioning phases of the solar facilities will generate minimal trips and the traffic impact will be insignificant.
- Farmstalls has the potential to generate 0-6 trips per peak hour per 100m<sup>2</sup> GLA. These trips can also be assumed to be pass-by trips (traffic already on the road network), especially in rural areas.
- **In terms of traffic impact, it is concluded that the proposed developments will have an insignificant traffic impact.**
- Shoulder Sight Distance requirements should be met at accesses. It is however assumed that the SSD requirements are met at the existing farm stall accesses, as these developments would have undergone the necessary approvals.



- SANRAL generally requires a separate right turn lane if the volume of right turning vehicles along their routes exceed 30 vehicles per day.
- Parking for the farmstalls should be provided at 6 parking bays per 100m<sup>2</sup> GLA.
- It is not anticipated that many additional public transport – or non-motorised transport trips will be generated by any of the proposed developments.

From a traffic engineering perspective, the approval of the application for this development is supported.

Please do not hesitate to contact us should you have any queries.

Yours faithfully,



**Annebet Krige Pr Eng**

For: STURGEON Consulting





# **Heritage Impact Report**





# HERITAGE REPORT

COMPILED BY

Cedar Tower Services (Pty) Ltd t/a CTS Heritage



CTS HERITAGE

[www.charge.co.za](http://www.charge.co.za)

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# **Proposed Network of Electric Vehicle Charging Stations with Associated Renewable Energy Facilities**

## ***Heritage Considerations***

### **Background**

Zero Carbon Charge (Pty) Ltd (ZeroCC) plans to roll out a network of car charging stations, powered by renewable energy facilities, along all the main routes across South Africa. Approximately 120 car charging stations with mainly solar facilities, at about 150km intervals, are envisaged at this stage.

A similar number of truck charging stations with larger renewable energy sites are envisaged. In some cases, the car and truck charging stations would be combined at the same site. The intention is to locate the car charging stations in tandem with existing farm stalls or guest houses along major national and provincial routes.

### **Project Description**

The car charging sites would range from an initial 1ha to about 20ha to allow expansion of the solar facilities over time on a phased basis. Some of the sites have existing farm stalls or guest houses, while new farm stalls are envisaged in other cases. The various components of a car charging station and associated solar facility are listed below.

- Solar arrays (up to 3,5m height);
- Charging station control room in a standard 6m container (3m height).
- Natural gas on-site generator;
- Car charging point with canopy;
- New farm stall in some cases, approx. 100m<sup>2</sup>;
- 5 000 to 10 000 litre water storage tanks, typically behind the farmstall;
- Underground/overhead 33 kV powerlines (9m height);
- Security fencing (2m height)

### **EV Charging Stations**

While the adoption of EVs in South Africa is still limited at present, this is set to change in the short to medium term, with a number of vehicle manufacturers ceasing production of internal combustion engines (ICE) completely by 2040. In order to facilitate the efficacy and uptake of EVs in South Africa, an EV charging network is required to be established which is similar in scale and nature to the ubiquitous petrol stations that are familiar features in the South African





landscape. Excluding the proposed PV facilities which will support the EV charging stations, the charging stations themselves are similar in size and scale to petrol stations, and are proposed to be located in similar positions along existing National and Regional routes.

The EV charging stations, like petrol stations at present, are likely to become expected and familiar features along the major road networks of South Africa. As with the construction of new petrol stations, the development, design and construction of each EV charging station will be guided by an impact assessment process to mitigate impacts to significant environmental, heritage and scenic resources.

## **Socio-Economic Benefits**

In terms of the impacts to the landscape, due to the similarity in scale and nature to petrol stations, the primary difference from an impact perspective is the proposed PV facilities which are intended to provide the energy supply to the EV charging stations.

According to information provided by ZeroCC;

- South Africa is spending well in excess of R300 billion a year importing oil and fuel products for petrol and diesel vehicles of all kinds. As the use of internal combustion vehicles are phased out, there will be a significant decrease in Forex expenditure, resulting in the retention of that money within South Africa and enabling it to be reinvested in the economy.
- An electric car powered by the current South African grid would emit more CO<sub>2</sub>e than a petrol car driven over the same distance whereas an EV charged with green-powered chargers emits zero CO<sub>2</sub>e.
- High powered (ultra-fast) charging is the minimum viable standard in order to provide an experience roughly comparable with petrol/diesel. In SA, with a weak grid and loadshedding, on-site generation of power to supply the charging stations is required.

In utilising the energy provided by the on-site PV facilities to supply the EV charging stations, each site becomes a net energy producer in its own right. Furthermore, the socio-economic benefits associated with this net energy production remain on site and localised, with direct local benefits.

## **Site specific impacts to Heritage Resources**

Each proposed development site is being assessed for impacts to archaeological, palaeontological, built environment and cultural landscape heritage resources through either a desktop heritage screening assessment or, if necessary, fieldwork and a comprehensive Heritage





Impact Assessment. These reports identify and map significant heritage resources relative to the proposed development areas and provide recommendations regarding impact mitigation strategies.

## **Cumulative Impacts in terms of heritage resources**

The cumulative impact of a development is the impact that development will have when its impact is added to the incremental impacts of other past, present or reasonably foreseeable future activities that will affect the same environment. It is important to note that the cumulative impact assessment for a particular project, like what is being done here, is not the same as an assessment of the impact of all surrounding projects. The cumulative assessment for this project is an assessment only of the impacts associated with this project, but seen in the context of all surrounding impacts. It is concerned with this project's contribution to the overall impact, within the context of the overall impact. But it is not simply the overall impact itself.

The most important concept related to a cumulative impact is that of an acceptable level of change to an environment. A cumulative impact only becomes relevant when the impact of the proposed development will lead directly to the sum of impacts of all developments causing an acceptable level of change to be exceeded in the surrounding area. If the impact of the development being assessed does not cause that level to be exceeded, then the cumulative impact associated with that development is not significant.

In terms of cumulative impacts to heritage resources, impacts to archaeological and palaeontological resources are sufficiently dealt with on a case by case basis, and are assessed at a site specific level per development site. The primary concern from a cumulative impact perspective would be to the cultural landscape. The cultural landscape is defined as the interaction between people and the places that they have occupied and impacted. In some places in South Africa, the cultural landscape can be more than 1 million years old where we find evidence of Early Stone Age archaeology (up to 2 million years old), Middle Stone Age archaeology (up to 200 000 years old), Later Stone Age archaeology (up to 20 000 years old), evidence of indigenous herder populations (up to 2000 years old) as well as evidence of colonial frontier settlement (up to 300 years old) and more recent agricultural layers.

Modern interventions into such landscapes, such as renewable energy development and associated infrastructure, constitute an additional layer onto the cultural landscape which must be acceptable or anticipated in certain contexts such as in REDZ areas, or within areas of low environmental sensitivity. The primary risk in terms of negative impact to the cultural landscape resulting from renewable energy development lies in the eradication of older layers that make up the cultural landscape. There are various ways that such impact can be mitigated. In most instances, these mitigation strategies align with visual impact mitigation strategies.





In terms of impacts to heritage resources, it is usually preferred that this kind of infrastructure development is concentrated in one location and is not sprawled across an otherwise agricultural, rural or wilderness landscape. The resulting challenge, in terms of renewable energy, is that this requires an extensive and substantial grid network to be developed through otherwise scenic contexts in order to transport the generated energy from its origin to where it is used.

This project addresses this issue through the establishment of the supporting PV arrays in the immediate proximity of the proposed EV charging stations. The present scale of the proposed PV arrays is small at 1ha, but is intended for expansion to 20ha through a phased approach. Even at 20ha, the proposed PV arrays are substantially smaller in scale than most of the approved solar facilities proposed throughout South Africa at present.

In implementing appropriate buffers along scenic routes, as well as other mitigation strategies such as planting and design on a case-by-case basis, the cumulative impact of the proposed EV charging stations and their supporting PV arrays can be kept at a minimum, and at an impact level largely equivalent to the cumulative impact of the development of additional petrol stations, with the benefits of on-site power generation and the use of green energy.

## Visual Impacts

A cumulative visual impact statement was drafted for this project by Lawson and Oberholzer (2024). They conclude that there would be no cumulative visual impacts for the project, seen as a whole, as the charging stations and related solar facilities would be in the region of 150km apart. The only cumulative visual impacts would be where existing similar solar facilities or other energy infrastructure occur near the individual sites.

Some cumulative visual clutter could be experienced where infrastructure, such as service stations, existing powerlines and cell phone masts, are present in the surroundings. On the other hand, these facilities, together with the increase in the use of solar energy panels, are becoming more common as part of the landscape, and attract less visual attention over time.

A major benefit of the cellular design of the proposed solar facilities is that they not only provide localised energy in rural areas, but avoid the need for a plethora of linking powerlines to the main Eskom grid.

The Visual Statement concludes that In terms of the project as a whole, no fatal flaws were identified, and the project is considered acceptable from a visual perspective provided visual mitigations are implemented. General recommendations include the following to assist with the mitigation of the project:

- The footprint of the solar facilities should be kept as compact as possible to minimise the sprawl of buildings and related infrastructure.





- Degraded or disturbed sites should be used as far as possible, to minimise intrusion into scenic or pristine areas.
- Tree-planting, mounding, hedges or fencing with creepers should be used to reduce visibility of solar energy infrastructure.
- Lighting at night should generally be kept to a minimum, particularly in wilderness and rural areas, and light sources shielded from view with reflectors.
- Outdoor signage should be kept to a minimum, and where signage is required this should be discrete and located against a background to avoid silhouette effects. Billboard-type signs should not be permitted on major routes.

These recommendations are supported from a heritage perspective.

## Conclusions

The proposed cumulative impact of the development of the proposed EV charging stations and their supporting PV arrays is therefore unlikely to result in unacceptable risk or loss, nor will the development result in a complete change to the sense of place of the area or result in an unacceptable increase in impact due to their position as one of many refuelling stations located along main transport routes through South Africa.

Cumulative impacts to heritage resources in general, and the cultural landscape in particular can be managed through the implementation of appropriate buffers along scenic routes, as well as other mitigation strategies such as planting and design on a case-by-case basis. In this way, the cumulative impact of the proposed EV charging stations and their supporting PV arrays can be kept at a minimum, and at an impact level largely equivalent to the cumulative impact of the development of additional petrol stations, with the benefits of on-site power generation and the use of green energy.

Jenna Lavin

**CTS Heritage**

February 2024





# **Agricultural Meta Land Use & Socio-Economic Impact Study**





# **AGRI META LAND-USE AND SOCIO-ECONOMIC IMPACT REPORT**

COMPILED BY

The Bureau for Food and Agricultural Policy (BFAP)



**[www.charge.co.za](http://www.charge.co.za)**

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**BFAP**  
DATA  
DRIVEN  
INSIGHT

# Agri meta land-use and socio- economic impact overview

Zero Carbon Charge (Pty) Ltd.

March 2024





# Introduction



*Zero Carbon Charge* (hereinafter referred to as *Charge*) commissioned this agricultural impact study. The company aims to build a national network of green energy powered ultra fast chargers, approximately 150km apart, covering all strategic highways and major routes in South Africa. The points below outline their estimated macro-economic impact metrics, according to Charge:

1. “The international car manufacturing business has irreversibly pivoted away from internal combustion engines, which they have to largely stop manufacturing by 2035 in most of the major auto markets in the world”.
2. Charge and NAAMSA project that a cumulative 353 836 electric vehicles (EV) and plug-in hybrids will be sold from 2023-2028, with more than 20% of total new sales being EV & PHEV vehicles by 2028. That is a significant increase in market share from less than 0.6% (of total new sales) in 2023. Charge is of the opinion that the set up of charging companies in SA will greatly accelerate the advent of electric cars.
3. There are in the order of 12 million registered vehicles in SA. Annual sales of passenger and light commercial vehicles exceed 400 000 per year. Passenger & light commercial as well as the road freight sector consume 15 billion litres of fuel a year, which is mostly imported (in crude or refined form). Charge projects that they will contribute to R187 billion savings in forex spent on crude oil and refined oil imports over 20 years.
4. Charge is targeting a specific sub-segment of the transport/travel market: focussed on all travel outside of urban areas. This follows the international model of ‘electric highways’ similar to Tesla, Fastned and similar companies. Charge aims to provide high powered (ultra-fast charging) EV charging that is 100% green in the “operational phase”, and completely grid independent.
  - Charge offers Zero CO<sub>2</sub> emissions with renewable energy powered chargers; opposed to 5.8 MT CO<sub>2</sub>e per annum emissions when charged with Eskom grid power (\*\*comparison on the operation of cars only, on a 25 000km per annum use assumption. Charge assumes 50% home charge (carbon emissions dependent on electricity source) and 50% zero carbon charge).

	Passenger & light commercial vehicles	Road freight
Total litres fuel consumed in 2022 (million litres)	8 082	6 956
Share of SA fuel sales	32%	27%

Source: Department of Energy, 2022



# Methodology overview

## Socio-economic impact

### Underlying assumptions in the socio-economic impact estimation:

#### Number and area of sites:

- Car sites: 120\* sites, starting at 0.6ha with a maximum of 19.7ha
- Truck sites: 100, starting at 12ha with a maximum of 186ha

*\*some 50 of the 120 sites could be initially developed to only cater for cars, and then expanded as the demand for EV charging in the road freight space expands. The expansion of car sites to cater for both cars and trucks are outside of the study scope and all calculations will be based on car-only developments.*

#### The impact is measured by quantifying:

- Employment impact of the construction and operational phase for 1 car and 1 truck site, which is then multiplied by the number of car and truck sites.
- Economic impact in terms of energy sales, convenience stores, rent returns to landowners and community upliftment program contributions is determined per site (per size, see range indicated above), which is then upscaled to the total number of sites, operational lifetime of phase 1, productivity and inflation % assumptions.

## Agricultural impact

### Underlying assumptions in the agricultural impact estimation:

- Spatial outlines of the planned sites, as of October 2023, were used to determine the spatial footprint and agricultural impact of the site development.
- These locations and boundaries change continually as the company negotiates with individual land-owners. This is therefore a point-in-time analysis.
- The average site sizes assumed for the agricultural impact analysis are:
  - 70 car sites: 15.7ha
  - 50 car & truck sites: 44.6ha
  - 100 truck sites: 75ha

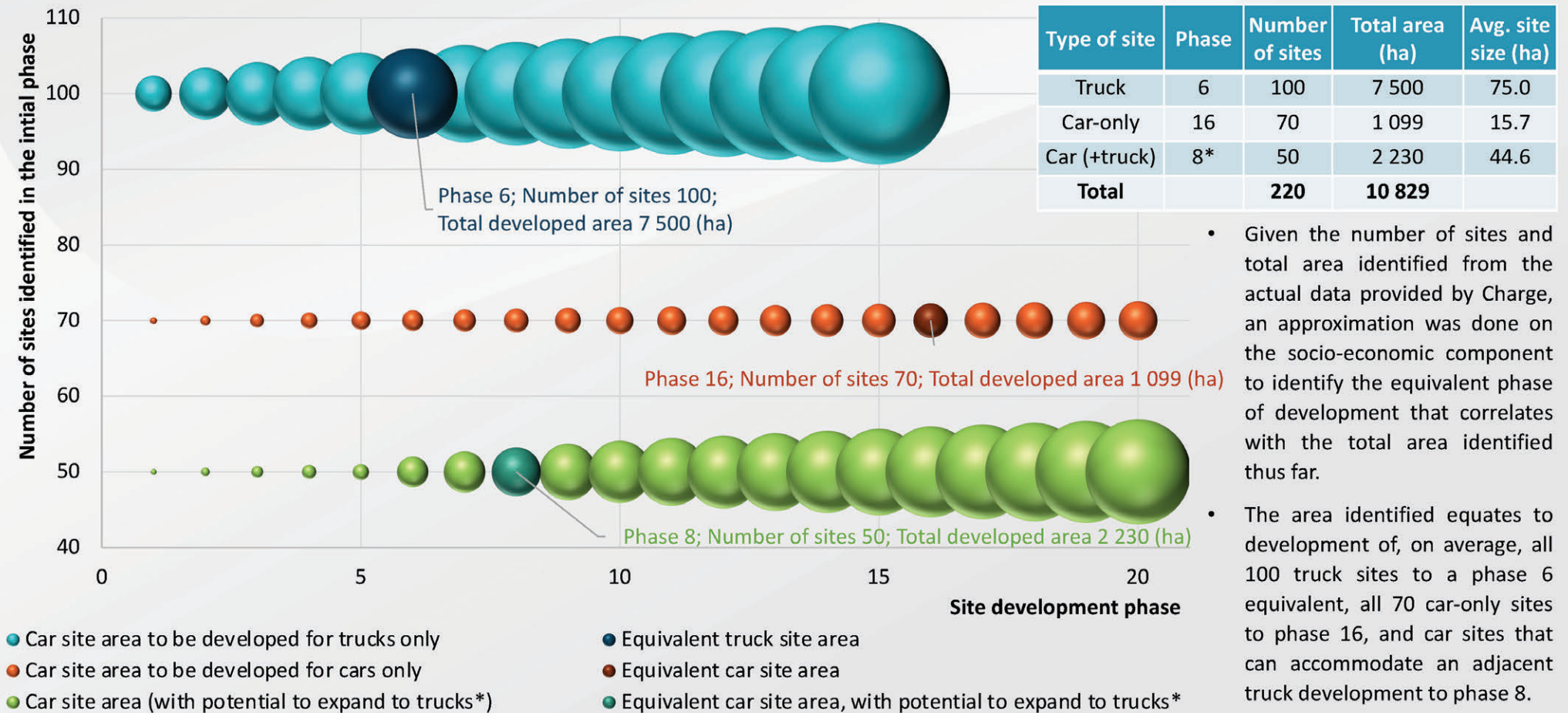
*\*note that actual planned site polygons were used and that they vary significantly in size;*

- The land-use analysis is further based on a range of spatial datasets (i.e. South African National Land Cover, Grazing Capacity, Land Capability, Protected areas, Crop Types etc.) from which the extent of the Charge site area will be characterized.
- Finally, the prevalent field crop, horticulture and / or livestock production and income that could potentially be generated on each charge site was summarised per local municipality to show the impact of this investment on total agricultural production in South Africa.



# Methodology overview

Comparison of the land size per phase of development applicable to the **socio-economic study** with the actual area identified in the **agricultural study**



\* for illustration purposes, BFAP assumes the addition of a phase 1 truck construction adjacent to an expansion to phase 6 on the car site construction



# Executive Summary: Meta study on the socio-economic impact



## Employment impact

### Construction phase:

- Project based job creation (4-8 months) with a total of



5 800 job opportunities created for semi-skilled/unskilled workers



6 400 job opportunities created for skilled workers

### Operational phase:

- Permanent, local job creation:



880 job opportunities for unskilled workers



1 540 job opportunities for semi-skilled workers



330 job opportunities for skilled workers

- Temporary, local job creation:





1 100 job opportunities for unskilled workers on a continuous basis

## Total socio-economic impact of construction during *initial phase*:

- Area developed:** 1 272 hectares (12.72 million m<sup>2</sup>) – based on minimum starting area per car and truck site.
- Capital outlay:** R39.45bn, with 10-20% thereof on labour (downstream impact on South African economy)
- Significant downstream and indirect contributions to local economy

## Contribution to socio-economic activity (per site)

	Truck 	Car 
Energy sales	R3.5m – R4m/ha/annum	R6m – R7m/ha/annum
Convenience revenue	R100 000 – R125 000/ha/annum	R250 000 – R330 000/ha/annum
Rent	R160 000 – R200 000/ha/annum	R250 000 – R350 000/ha/annum
Community upliftment	R30 000 – R40 000/ha/annum	R50 000 – R70 000/ha/annum



# Executive Summary: Meta study on the socio-economic impact



**Energy sales:** Annual estimate, with an impact on shareholder return, convenience revenue, rent, and community upliftment



**Convenience revenue:** Limited to annual estimate, given that it is a function that will be outsourced



**Rent:** Annual estimate scaled over the initial project lifetime on a constant and inflation adjusted basis



**Community upliftment:** Annual estimate scaled over the initial project lifetime on a constant and inflation adjusted basis

## Contribution to economic activity (per site)

	Truck	Car
Energy sales	R3.5m – R4m/ha/annum	R6m – R7m/ha/annum
Convenience revenue	R100 000 – R125 000/ha/annum	R250 000 – R330 000/ha/annum
Rent	R160 000 – R200 000/ha/annum	R250 000 – R350 000/ha/annum
Community upliftment	R30 000 – R40 000/ha/annum	R50 000 – R70 000/ha/annum

Scaled to total sites



Upscaling the economic impact (total impact in Year 1, on 100 truck sites @ 75% productivity)

	12ha (min)	186ha (max)
Rent	R184.78 million	R2 771.72 million
Community upliftment	R36.96 million	R554.34 million

Upscaling the economic impact (total impact in Year 1, on 120 car sites @ 75% productivity)

	0.6ha (min)	19.7ha (max)
Rent	R13.01 million	R633.81 million
Community upliftment	R2.60 million	R126.76 million



Scaled to lifetime with inflation

The annual productivity of the 120 car and 100 truck sites can be scaled over the lifetime of the initial phase (25 years) at an annual inflation of 5%. **If the area is expanded to the maximum potential return to all landowners in the initial phase in nominal terms (5% annual inflation assumed) @ 100% productivity** equates to:

- R176.38bn on 100 truck sites over 25 years.
- R40.33bn on 120 car sites over 25 years.

The **maximum potential contribution to Sumbandila in the initial phase in nominal terms (5% annual inflation assumed) @ 100% productivity** equates to:

- R35.28bn on 100 truck sites over 25 years.
- R8.07bn on 120 car sites over 25 years.



# Executive Summary: Meta study on the impact on Agriculture



The planned 220 **Charge sites (Truck and Car sites)** have a total surface area of **10 823ha**, which is **0.01% of total agricultural land** in South Africa.

The 10 823ha used by Charge, consists of the following:



**4 845ha (34.8%)** consists of Grassland & Shrubland which can be used as **grazing for animal production**.



**3 406 (31.5%)** of this area can be **classified as cultivated fields**: fields, that are currently or have been previously cultivated for agricultural field crop production.

- Majority of these fields are currently under rainfed annual cultivation (87%).
- Followed by horticulture (0.04%), Subsistence farming (0.03%) and Pineapples (0.02%).



The remaining **2 572ha** consists of **natural forests, barren land, wetlands & water and built-up area**.



Agricultural land use is by far the biggest contribution in the total land use categorisation.

- The total charge site area falling under agricultural land use categories, represents less than 1% of the respective national totals. These categories include: field crops, irrigation, grazing (number of cattle), plantation forests, orchards and sugarcane.
- BFAP estimated that **1% or less** of the national production of respective field and horticultural crops would be impacted by the charge site land use change away from agriculture. Selected potential production statistics are highlighted below:
  - Maize: 11 100 tonnes (0.07% of total production. 5-year average annual variation in production was 7% from 2018 - 2022)**
  - Wheat: 1 740 tonnes (0.09% of total production. 6% 5-year average annual variation)**
  - Cabbage: 360 tonnes (0.22% of total production)**
  - Avocados: 730 tonnes (0.54% of total production)**
  - Beef: 49 tonnes (0.007% of total production)**



# Executive Summary: Meta study on the impact on Agriculture



Crops on **currently cultivated fields** include: planted pastures and natural grazing, maize and soybeans in the summer production region and wheat, canola, lucerne and barley in the Western Cape (winter production region).



**2 731ha (25%)** of the total Charge site area (10 823ha) currently falls under **Protected Agricultural Areas (PAAs)** as defined by the DALRRD.



The total **potential income** that can be generated through agricultural activities on agricultural land within the Charge sites is summarised as follows:

- Field crops: average R12 520/ha per annum; total income of R40 534 110 per annum at current prices.
- Livestock: R477/ha per annum; total income of R1 543 892 per annum at current prices.
- Horticulture: R87 641/ha per annum; total income of R16 480 536 per annum at current prices.
- This equates to roughly **0.015% of total agricultural gross production value** (DALRRD, 2022).





## Executive summary:

### Socio-economic impact

Upper bound for **rent income (5% of energy sales)**

	Truck 	Car 
Rent	R160 000 – R200 000/ha/annum	R250 000 – R350 000/ha/annum

\*variation based on number of vehicles charged per day

### Total **job opportunity** impact:

- Providing a total of **13 300 temporary**, and **2 750 permanent job opportunities**.
- Each household head, earning an income, has on average 3 dependents (varying slightly by province), that is, **39 900 dependents** for all temporary jobs and **8 250 dependents** for all permanent jobs (construction and operational phases).

### Agricultural impact

Average **potential income from agricultural activities**

	Fieldcrops	Livestock	Horticulture
Average gross margins	R12 520/ha/annum	R477/ha/annum	R87 641 /ha/annum

\*Gross Margin: income (price x volumes) less direct costs per “natural resource potential”, per site.

### Total **food crop production estimates**, on Charge site area:

	Production estimate ('000 tonnes)	National Total ('000 tonnes)	%
Soybeans	19.34	1 676	1.154%
Avocados	0.73	135	0.539%
Pecans	0.06	23	0.249%
Cabbage	0.36	165	0.221%
Carrots	0.34	222	0.153%
Sunflower	1.10	841	0.131%
Wheat	1.74	1 979	0.088%
Sugarcane	15.11	18 484	0.082%
Maize	11.10	16 017	0.069%
Wine grapes	0.82	1 292	0.063%
Macadamias	0.02	59	0.040%
Table Grapes	0.05	353	0.014%
Beef	0.049	700	0.007%
Pineapples	4.52	117	0.04%
Potatoes	0.08	2 659	0.003%

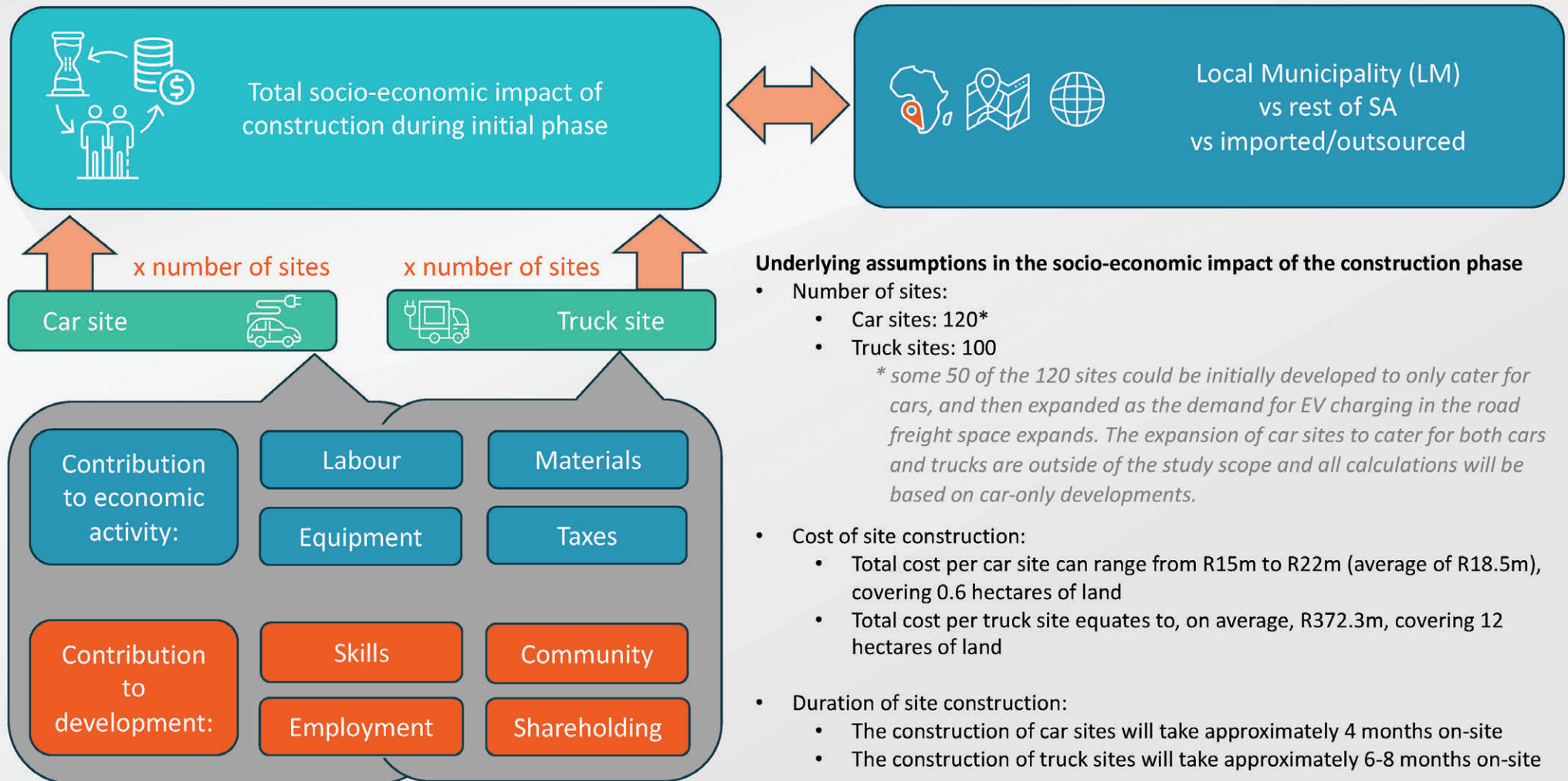


# Meta study on socio-economic impact

- The construction and operation of the Charge sites across South Africa on major routes has the potential to make significant socio-economic contributions. At local municipality level, the rest of the country and internationally, the socio-economic contributions can typically be quantified and qualified in terms of the economic activity and socio-economic development.
- Contributions to economic activity measures the impact in terms of labour use, materials, equipment, rent, operations, and taxes. As the extent of these contributions can vary significantly in terms of its impact at local municipal level, domestically and internationally, it's best to demarcate by region when quantifying and qualifying the impact.
- In a similar fashion, the contributions of the construction and operations to the development of skills, enterprises and communities are important indicators for social upliftment, especially in rural and financially challenged municipalities. In addition, economic development that aligns with social targets in terms of employment, and shareholding opportunities elevates the impact of endeavors such as the one Charge is undertaking.
- The approach to quantify and qualify the socio-economic impact of Charge's construction and operation of zero carbon EV charging sites considers the impact for the construction phase and one year of the operational phase per type of site. To measure the total impact on landowners and community development, the impact of the total number of sites and over the typical lifetime of the initial construction is necessary.
- The methodology and impact, together with how it relates to the different provinces, are described in this section.

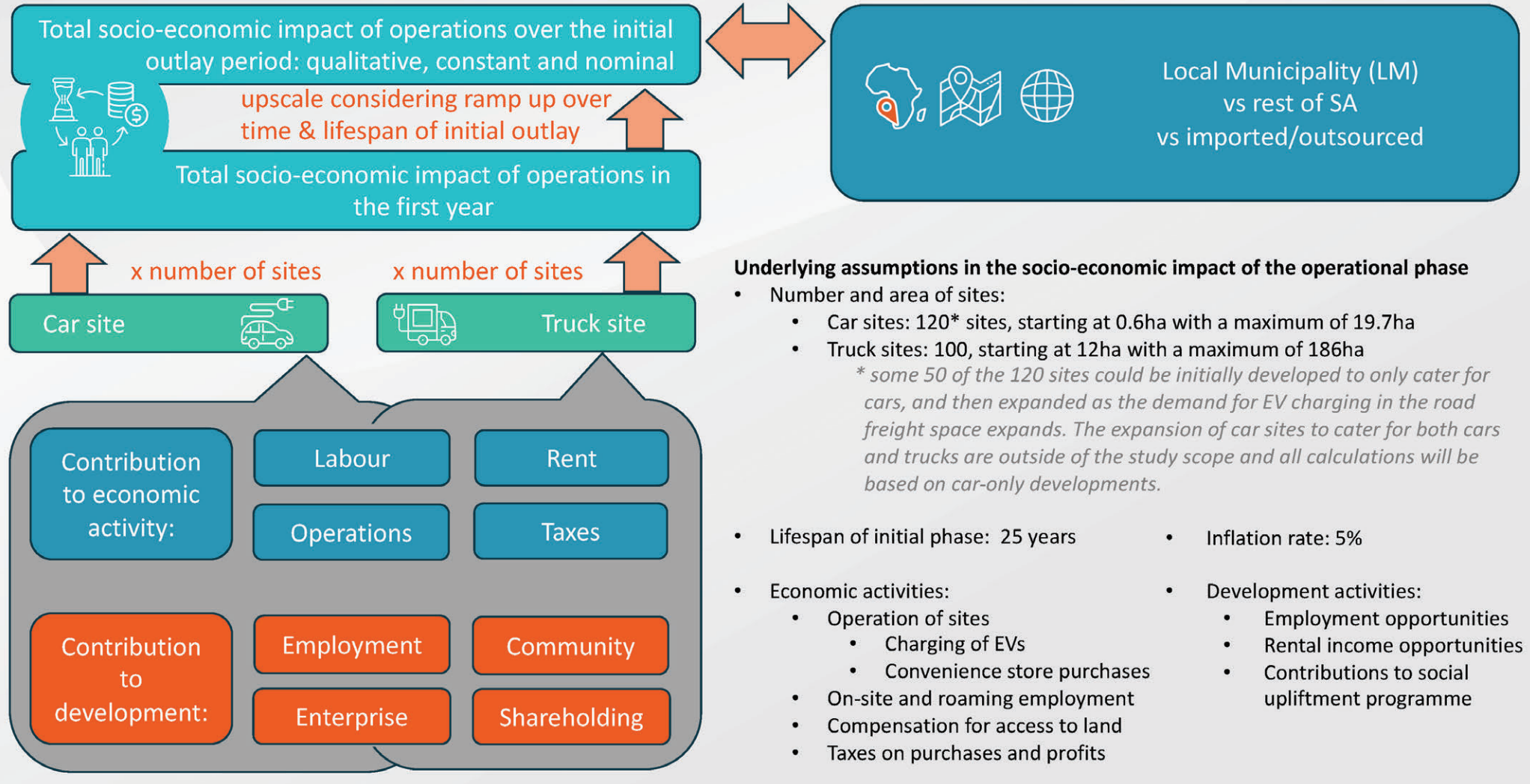


# Framework for measuring impact of construction phase





# Framework for measuring impact of operational phase

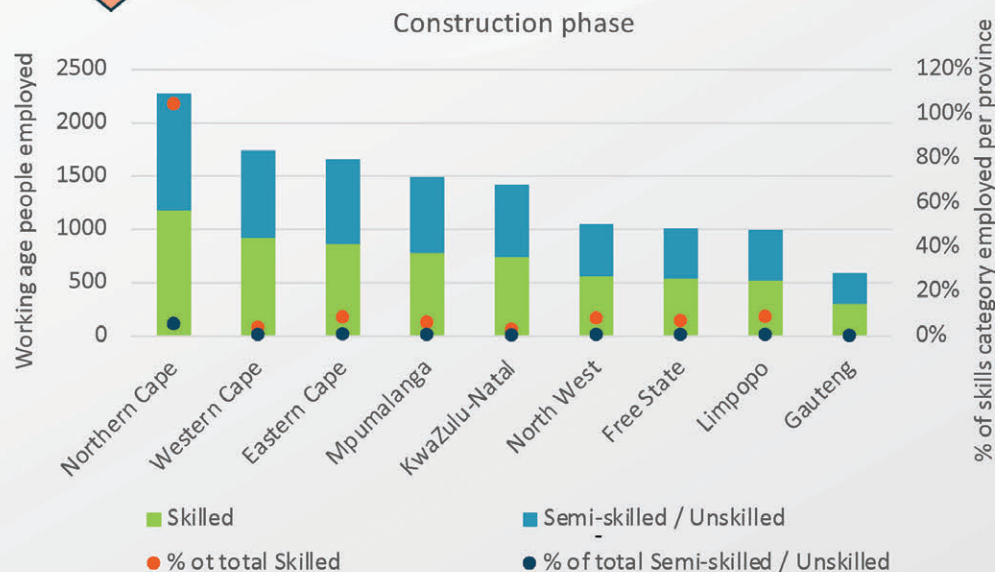




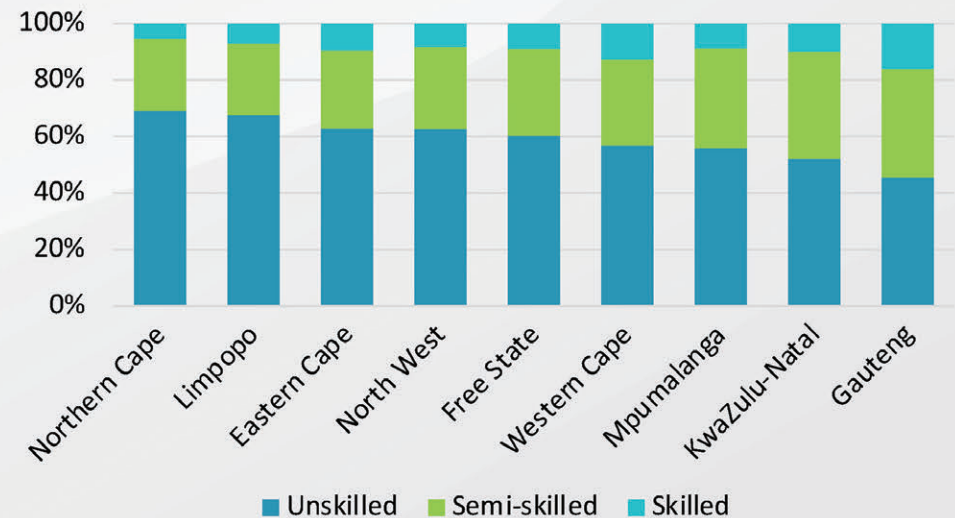
# Contextualising impact of construction phase

## Total socio-economic impact of construction during initial phase:

- Area developed: 1 272 hectares (12.72 million m<sup>2</sup>)
- Capital outlay: R39.45bn, with 10-20% thereof on labour (downstream impact on South African economy)
- **Employment: Project based job creation (4-8 months) with a total of 12 200 job opportunities created, of which 48% is earmarked for semi-skilled/unskilled workers in local municipalities**
- Significant downstream and indirect contributions to local economy



## Level of skills of working age population



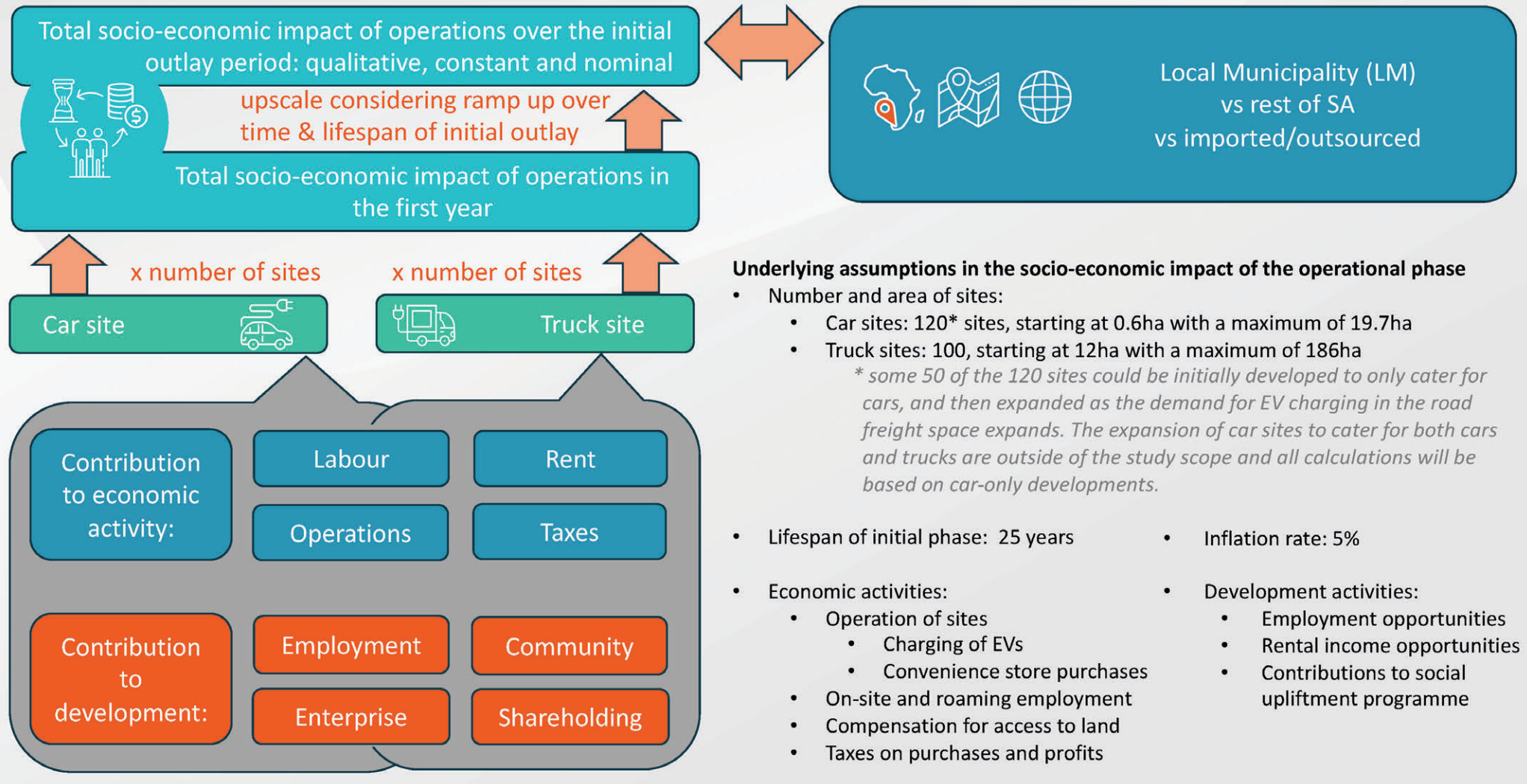
During the construction phase, a total of 6 400 skilled and 5 800 unskilled / semi-skilled jobs will be created (for a period of 4-8 months).

When these jobs are “allocated” to the sites by local municipality:

- 104% of total skilled labour in the Northern Cape could be employed by this project.
- Average 6% of skilled working age population in all other provinces could be employed through this project.
- An average 1% of unskilled / semi-skilled working age population could be employed temporarily by the construction of the charge sites.



# Framework for measuring impact of operational phase





# Measuring the economic impact of operational phase

## Contribution to economic activity per site:

### Labour





Unskilled &amp; semi-skilled: 16



Skilled: 1.5

Category	Employment
Maintenance team (skilled, permanent)	5 people per 10 sites
Convenience team (skilled, semi-skilled, permanent)	1 manager and 7 general workers
Site cleaning team (unskilled, permanent)	1 general worker
Solar cleaning team (unskilled, temporary)	5 general workers, once a month
Security team (unskilled, permanent)	3 security personnel (3 x 8-hour shifts)

Per site matrix	Skilled	Semi-skilled	Unskilled
Permanent 	1.5	7	4
Temporary 	0	0	5

## Contribution to economic activity:

### Taxes



Profit from energy sales



Profit from sales at convenience store



Profit from leasing out land



Personal income



Levies and licenses

Significant and multi-faceted contribution to treasury, including, but not limited to:

- VAT
- Income and company tax
- Levies



Provincial taxes, e.g., licenses

Local taxes, e.g., municipal levies

National taxes, e.g., VAT, income tax, company tax, energy levies

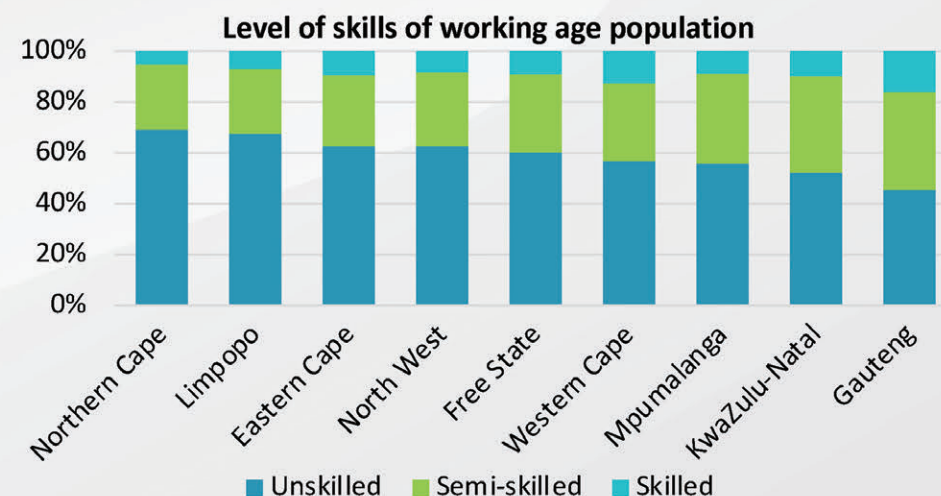
Additional tax measures that could come into play over time:

- Tax on energy sold (e.g., on petrol and diesel fuel currently)
- Incentives (tax rebates) to convert from conventional vehicles to EVs



# Contextualising impact of operational phase

Total employment	Skilled	Semi-skilled	Unskilled
Permanent	330	1 540	880
Temporary	0	0	1 100



During the operational phase, the sites can contribute 330 skilled, 1 540 semi-skilled and 880 unskilled permanent jobs and 1 100 unskilled temporary jobs.

These jobs are “allocated” to the sites by local municipality and compared per province:

- Due to the Northern Cape’s relatively small working age population, the sites contribute up to 2.4% of jobs per skills categories.
- On the other hand, due to Gauteng’s large working age population, and small number of sites, the project contributes 0.1% of jobs per skills category.
- In the other provinces, an average of 0.19% of skilled, 0.27% of semi-skilled and 0.17% of unskilled working age population could have permanent (or temporary in the case of the unskilled) jobs during the operational phase of this project.



# Measuring the economic impact of operational phase



Contribution to economic activity:

Operations



Gross revenue generated from energy sales

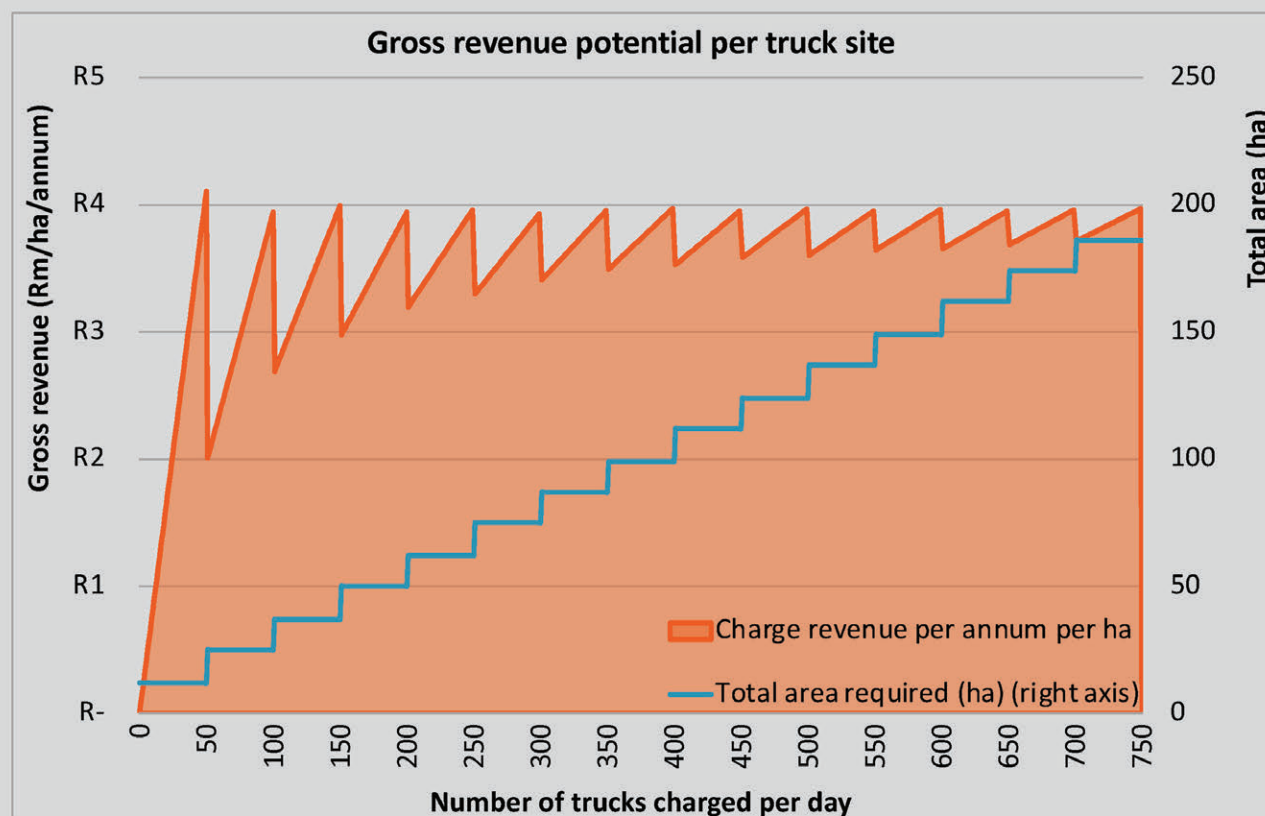


Assumptions	
kWh charge per truck	450
R/kWh charged	R6.00
Share or revenue	100%

Under these assumptions, the total upper bound for economic activity from energy sales is estimated at R3.5m-R4m per developed hectare per annum

Maximum potential per phase:

Phase	Total trucks to charge per day	PV (MWp)	Total (ha)	kWh sold per day
1	50	7	12	22 500
2	100	14	25	45 000
3	150	21	37	67 500
4	200	28	50	90 000
5	250	35	62	112 500
6	300	42	75	135 000
7	350	49	87	157 500
8	400	56	99	180 000
9	450	63	112	202 500
10	500	70	124	225 000
11	550	77	137	247 500
12	600	84	149	270 000
13	650	91	162	292 500
14	700	98	174	315 000
15	750	105	186	337 500





# Measuring the economic impact of operational phase

Contribution to economic activity:

Operations



Gross revenue generated from energy sales



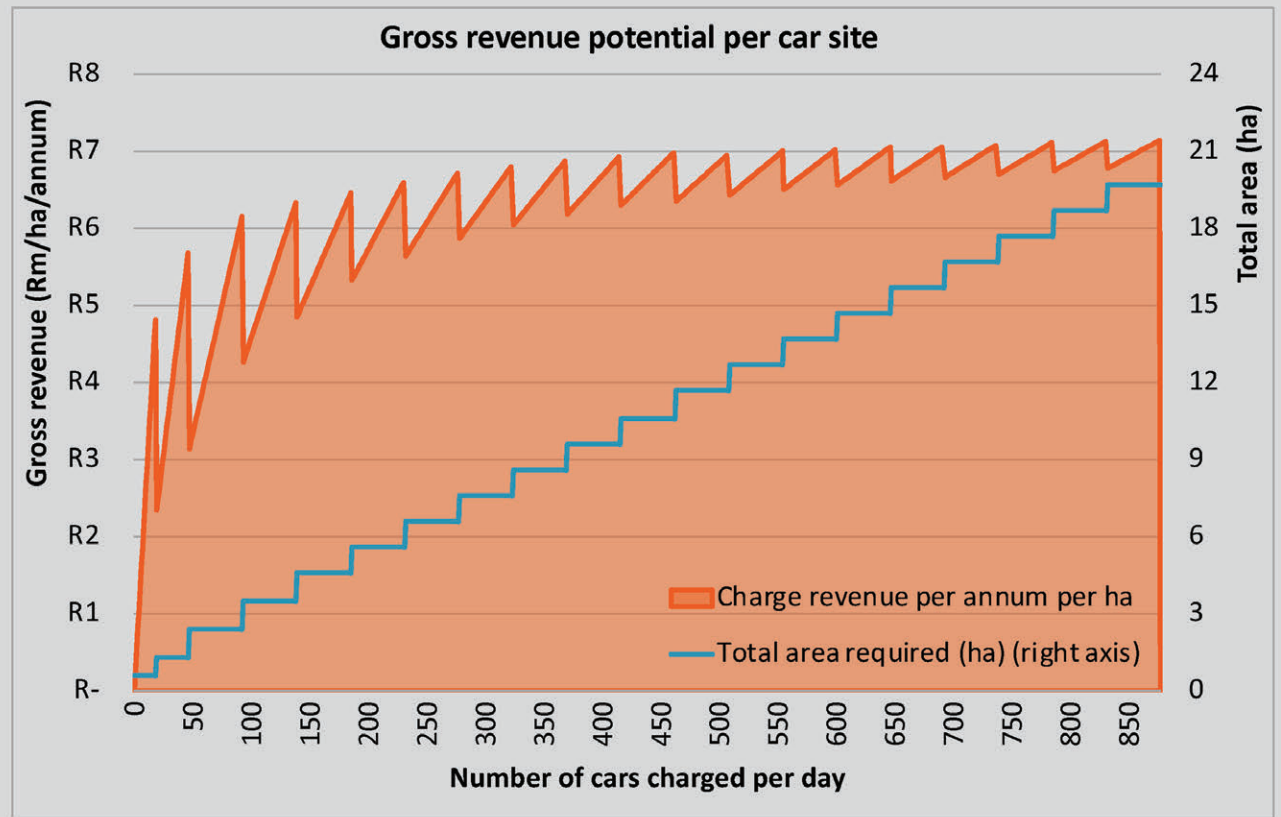
## Assumptions

kWh charge per car	55
R/kWh charged	R8.00
Share of revenue	100%

Under these assumptions, the total upper bound for economic activity from energy sales is estimated at R6m-R7m per developed hectare per annum

## Maximum potential per phase:

Phase	Total cars to charge per day	PV (kWp)	Total (ha)	kWh sold per day
1	18	260	0.6	990
2	46	667	1.3	2 530
3	92	1 333	2.4	5 060
4	138	2 000	3.5	7 590
5	185	2 667	4.6	10 175
6	231	3 333	5.6	12 705
7	277	4 000	6.6	15 235
8	323	4 667	7.6	17 765
9	369	5 333	8.6	20 295
10	415	6 000	9.6	22 825
11	462	6 667	10.6	25 410
12	508	7 333	11.7	27 940
13	554	8 000	12.7	30 470
14	600	8 667	13.7	33 000
15	646	9 333	14.7	35 530
16	692	10 000	15.7	38 060
17	738	10 667	16.7	40 590
18	785	11 333	17.7	43 175
19	831	12 000	18.7	45 705
20	877	12 667	19.7	48 235





# Measuring the economic impact of operational phase



Contribution to economic activity:

Operations

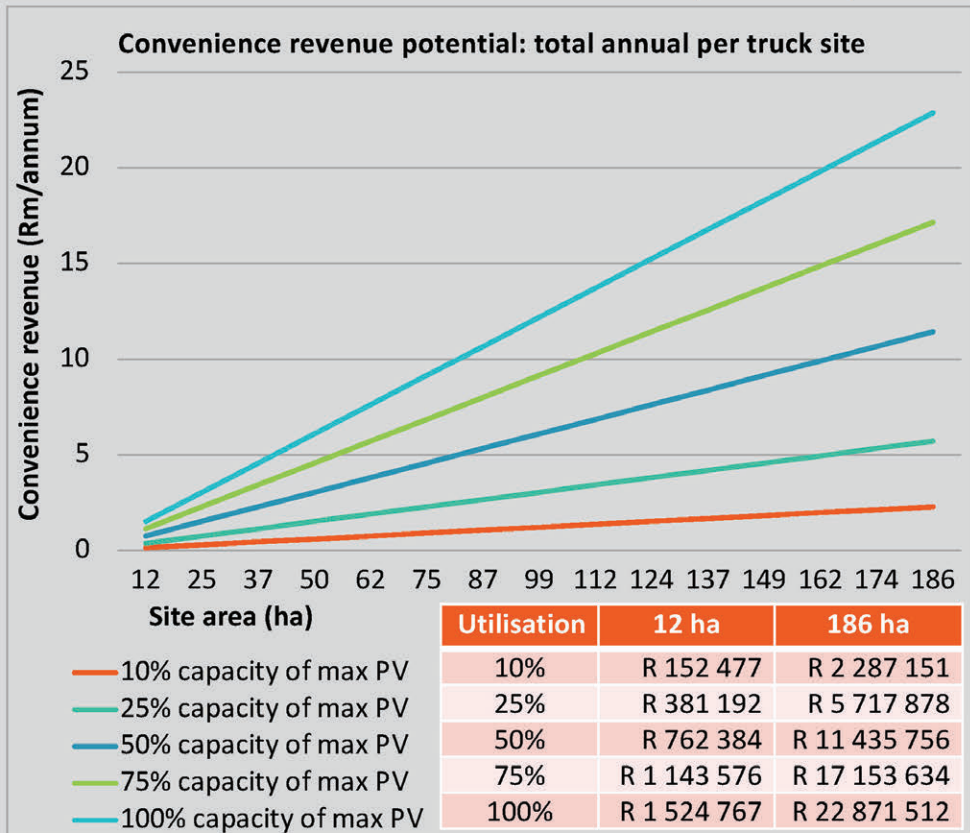
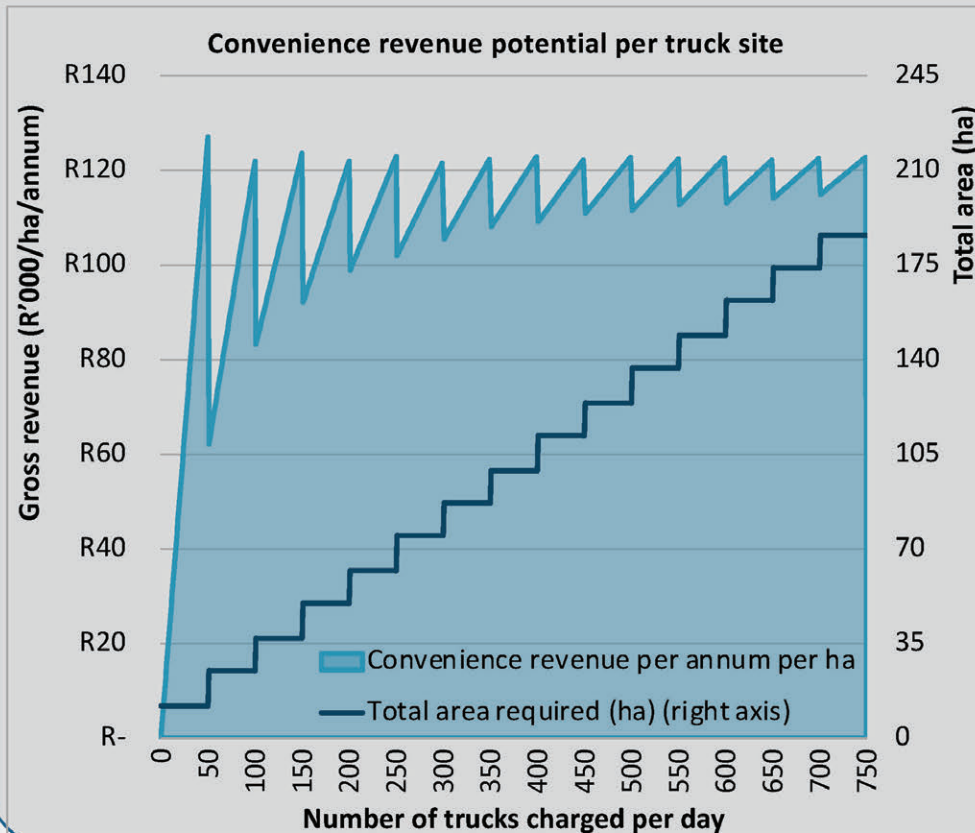


Gross convenience revenue linked to energy sales scale

**Assumption: 50% of R0.37 convenience purchases/kWh**

Based on convenience retail data from Nielsen (2017), inflation data from Stats SA (2024), retail fuel sales from DoE (2024), fuel station data from SAPIA (2024), EV fuel equivalents from Cardino (2024), and 50% vehicle occupancy compared to cars

**Under these assumptions, the total upper bound for convenience retail is estimated at R100 000-R125 000 per developed hectare per annum**





# Measuring the economic impact of operational phase

Contribution to economic activity:

Rent



Gross rent payment to landowner from energy sales linked to scale

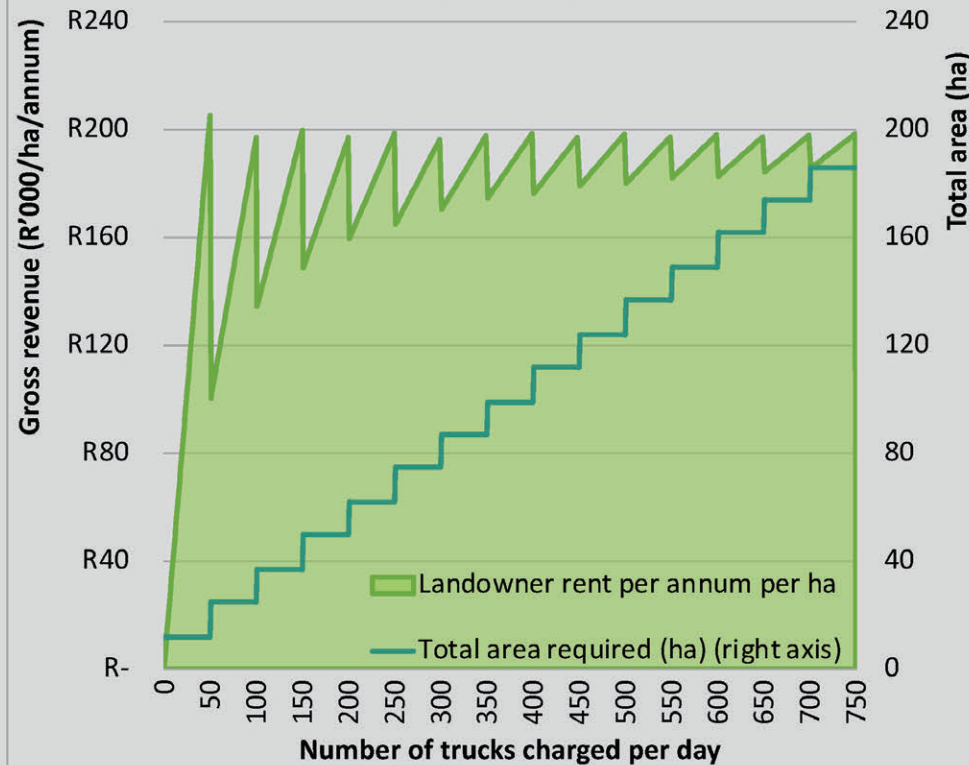


## Assumptions

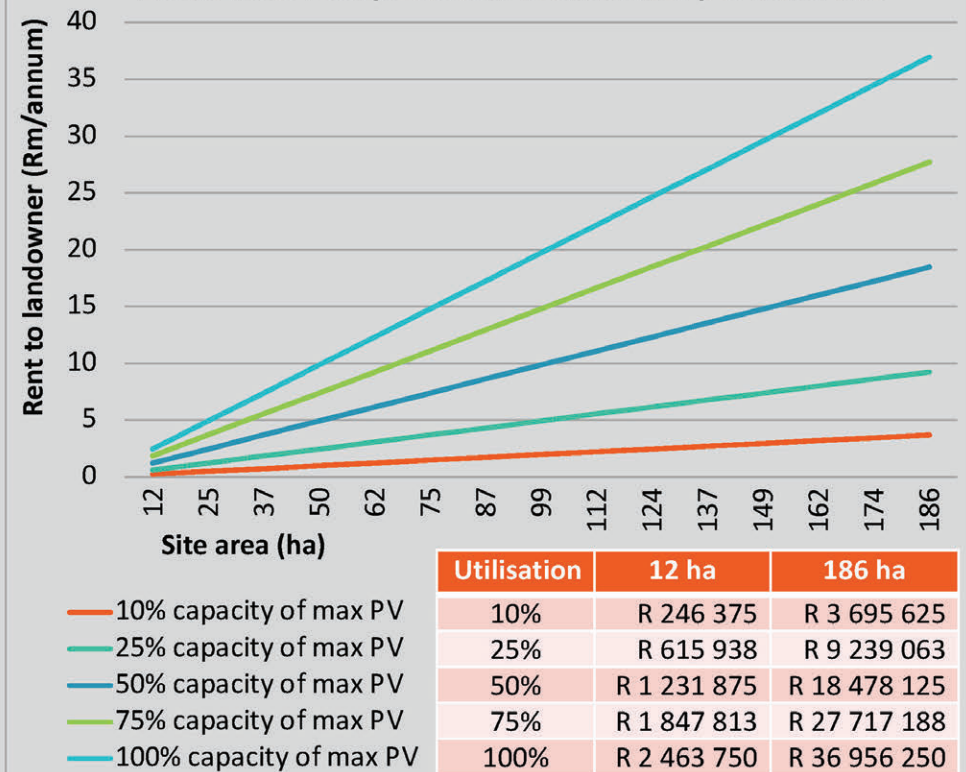
kWh charge per truck	450
R/kWh charged	R6.00
Share of revenue	5%

Under these assumptions, the total upper bound for rent payment (5% of energy sales) is estimated at R160 000-R200 000 per developed hectare per annum

Landowner rent potential per truck site



Landowner rent potential: total annual per truck site





# Measuring the economic impact of operational phase

Contribution to economic activity:

Rent



Gross rent payment to landowner from energy sales linked to scale

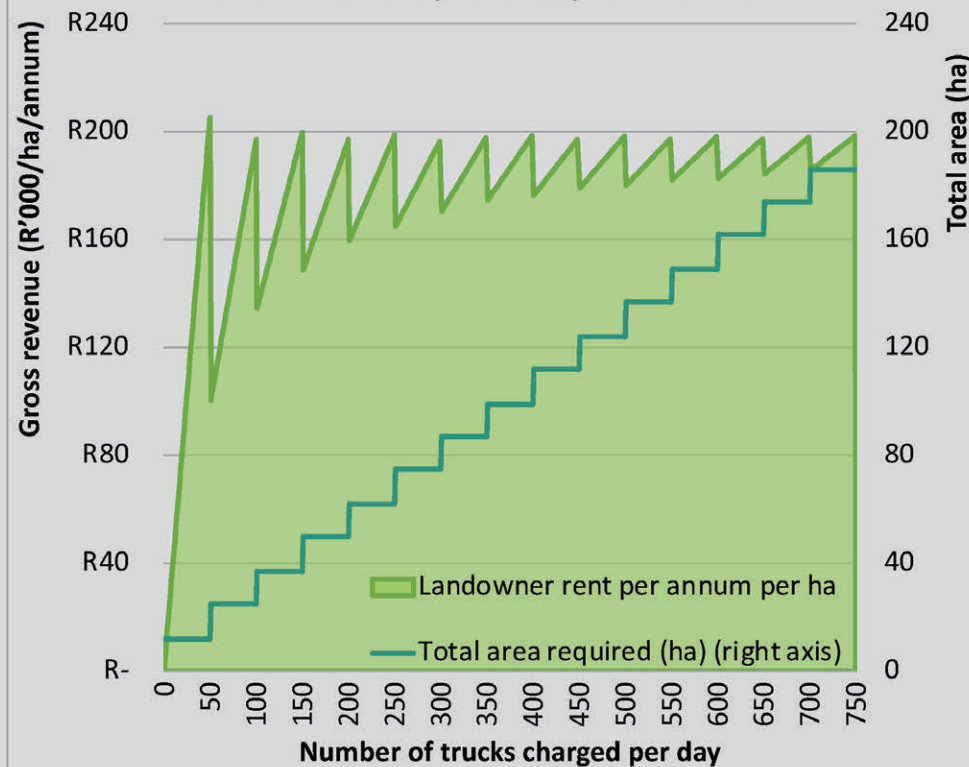


## Assumptions

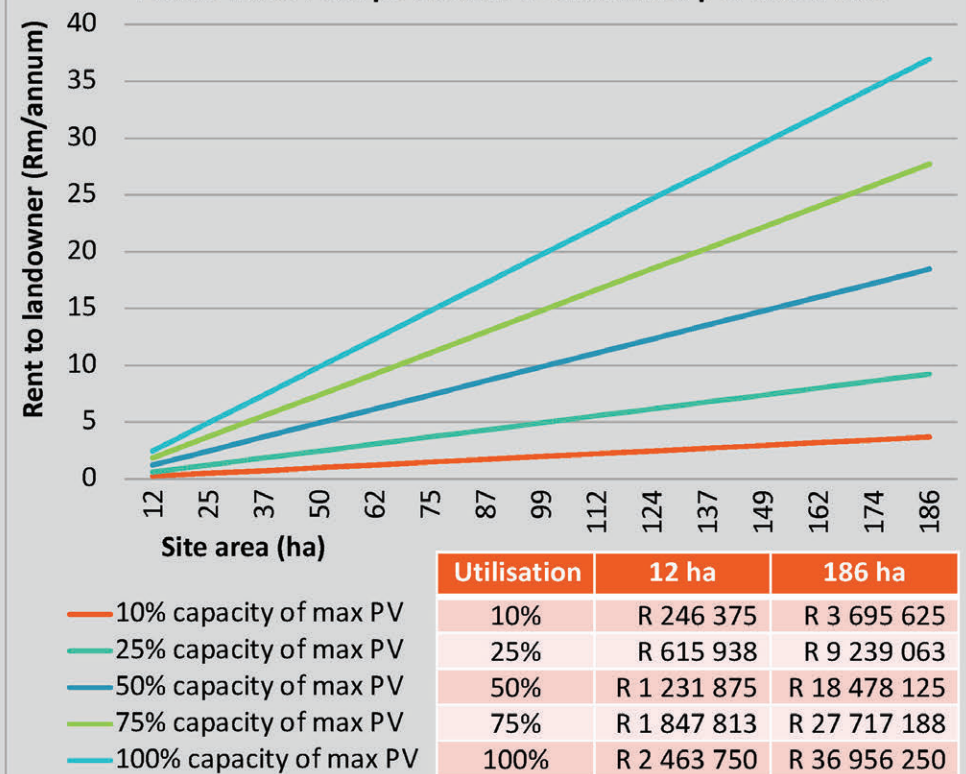
kWh charge per truck	450
R/kWh charged	R6.00
Share of revenue	5%

Under these assumptions, the total upper bound for rent payment (5% of energy sales) is estimated at R160 000-R200 000 per developed hectare per annum

Landowner rent potential per truck site



Landowner rent potential: total annual per truck site





# Measuring the economic impact of operational phase

Contribution to economic activity:

Rent

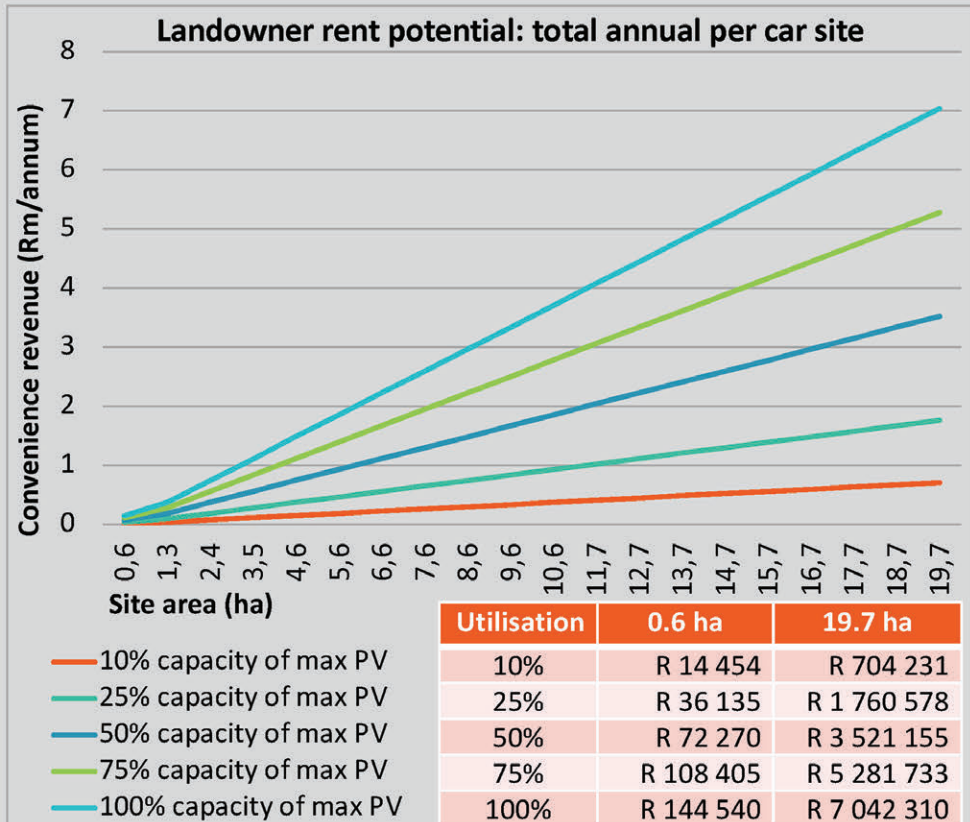
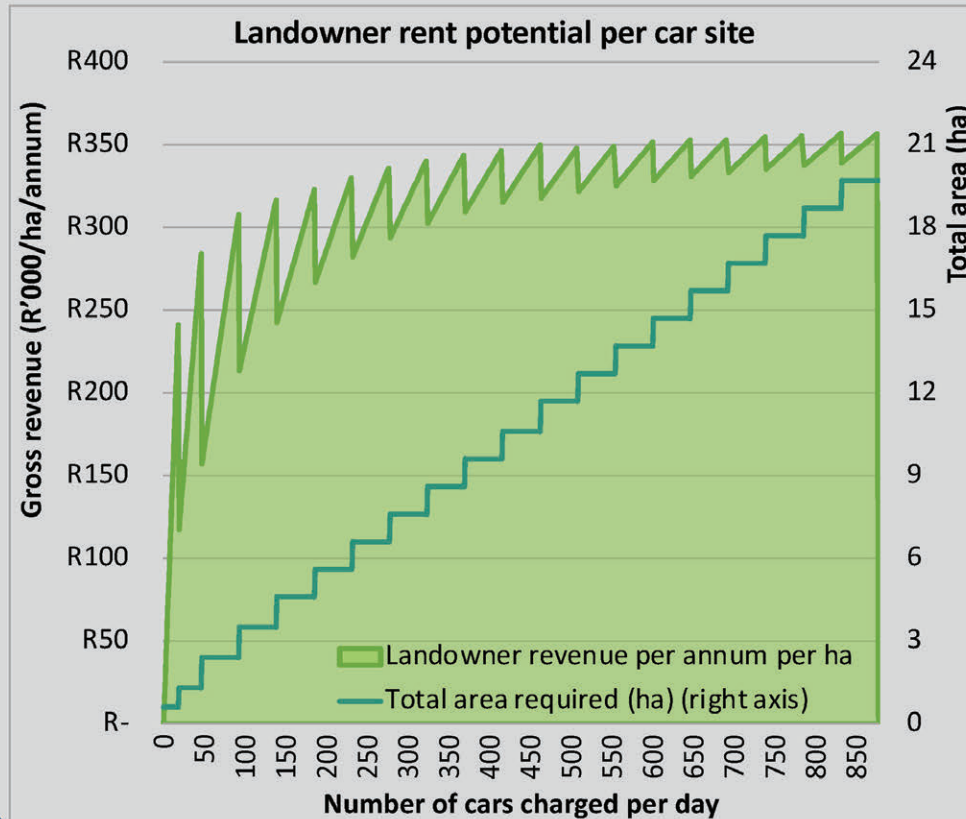


Gross rent payment to landowner from energy sales linked to scale



Assumptions	
kWh charge per car	55
R/kWh charged	R8.00
Share of revenue	5%

Under these assumptions, the total upper bound for rent payment (5% of energy sales) is estimated at R250 000-R350 000 per developed hectare per annum





# Measuring the social impact of operational phase

## Contribution to development:

### Employment



Unskilled &  
semi-skilled



Skilled

## Contribution to development:

### Shareholding



Creating long run opportunity to generate returns from investment (looking to raise about R2bn over time)

## Contribution to development:

### Enterprise



Large congregation of stakeholders to provide services to EV users that stimulate enterprise development locally and nationally

Activity	Site users	Direct engagement	Backed up by a network
	EV cars EV trucks	Employees & facilities - EV chargers - Convenience store	Consultants   Contractors   Service providers   Industry partners



Impact	Developing communities & enterprises: <ul style="list-style-type: none"> <li>Contributing to upliftment and development of local communities (1% of energy sales)</li> <li>Creating long-run employment opportunities (2100 jobs)</li> <li>Compensation for land use (5% of energy sales)</li> <li>Returns for capital invested</li> </ul> Stimulate downstream economic activity
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Formal and informal/occasional collaborators include, but is not limited to:

## CONSULTANTS | CONTRACTORS | SERVICE PROVIDERS & INDUSTRY PARTNERS



TAX & ACCOUNTING ADVISORS

FINANCIAL ADVISORS

ENGINEERS

TOWN PLANNERS

ENVIRONMENTAL ADVISORS

ARCHITECTS

QUANTITY SURVEYORS

VISUAL IMPACT SPECIALISTS

INTERIOR DESIGNER

FOOD SERVICE CONSULTANT

LANDSCAPE ARCHITECT

SOFTWARE SPECIALISTS

SAFETY & ACCESSIBILITY ASSESSOR

LEGAL ADVISORS

MEDIA COMMUNICATIONS SPECIALIST





# Measuring the social impact of operational phase

## Contribution to development :

### Community



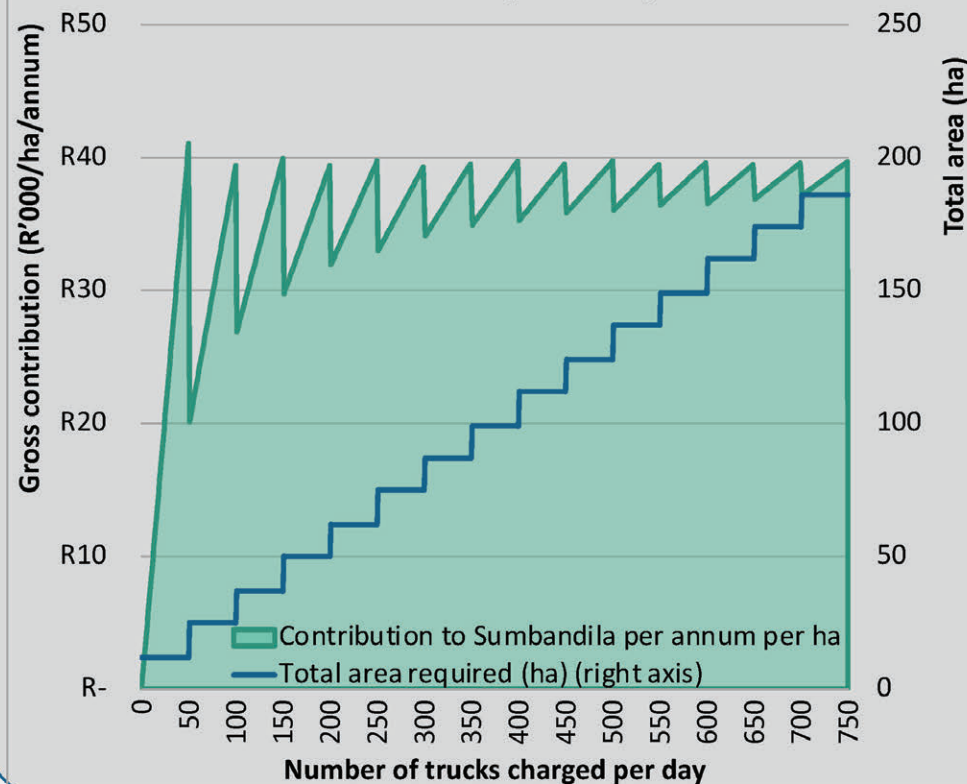
Gross contributions to Sumbandila Scholarship Trust from energy sales linked to scale



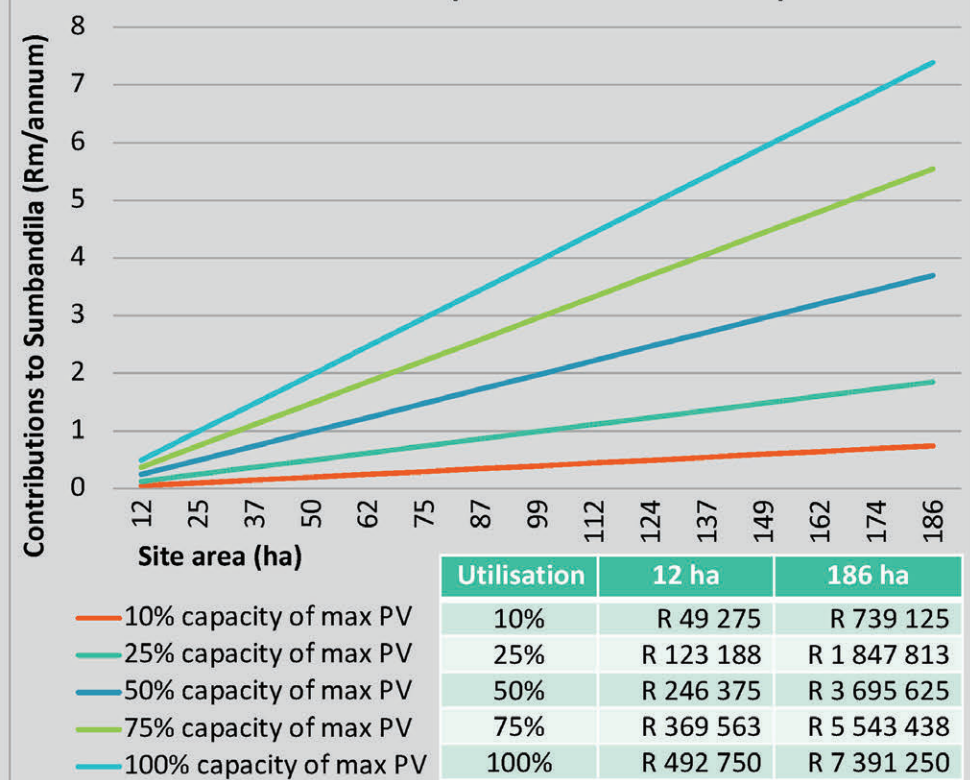
Assumptions	
kWh charge per truck	450
R/kWh charged	R6.00
Share or revenue	1%

Under these assumptions, the total upper bound for contributions (1% of energy sales) is estimated at R30 000-R40 000 per developed hectare per annum

Sumbandila contribution potential per truck site



Sumbandila contribution potential: total annual per truck site





# Measuring the social impact of operational phase

## Contribution to development:

### Community

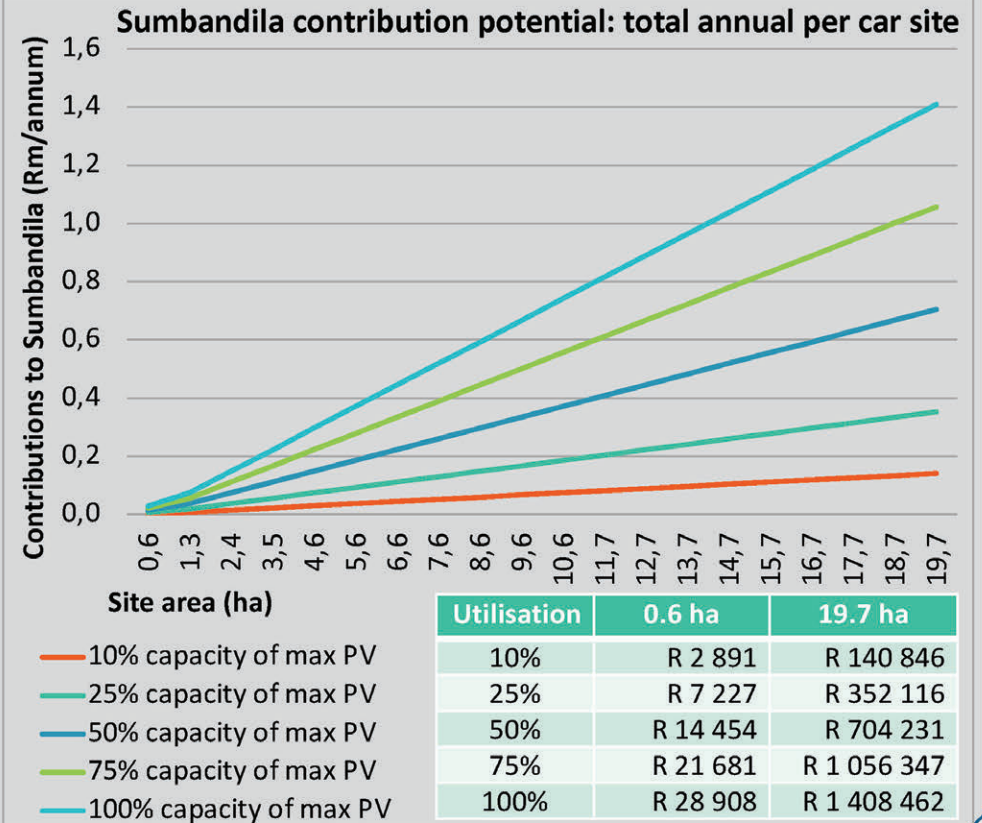
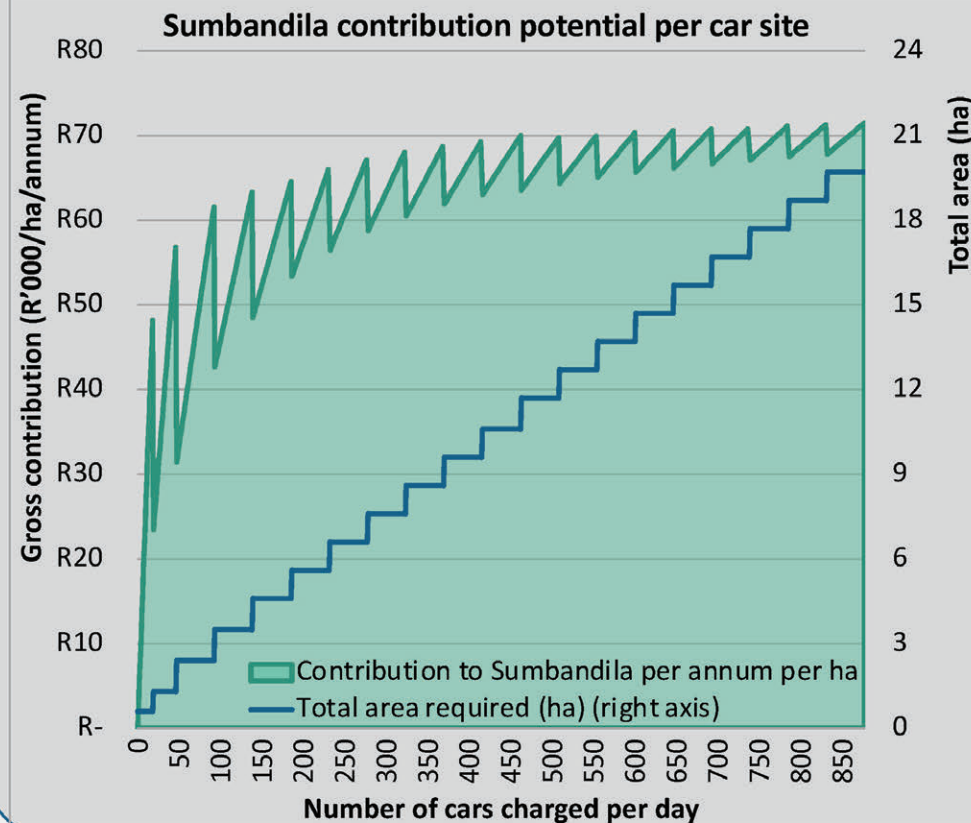


Gross contributions to Sumbandila Scholarship Trust from energy sales linked to scale



Assumptions	
kWh charge per car	55
R/kWh charged	R8.00
Share or revenue	1%

Under these assumptions, the total upper bound contribution (1% of energy sales) is estimated at R50 000-R70 000 per developed hectare per annum





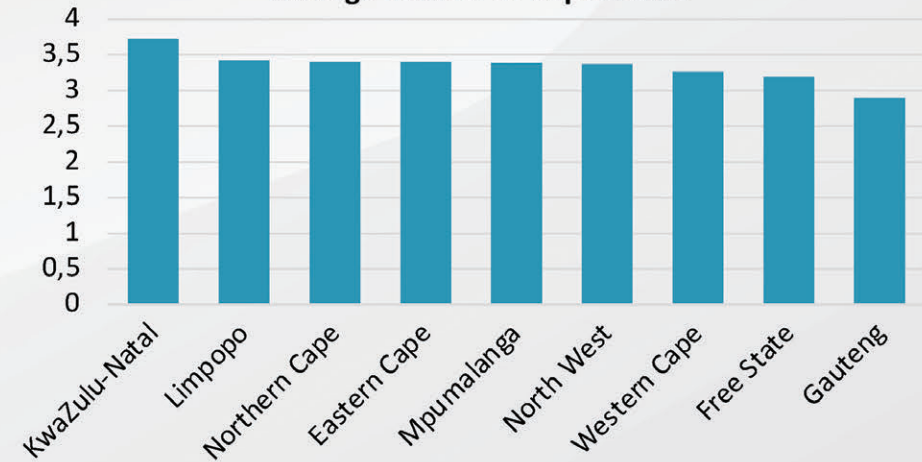
# Total job creation impact



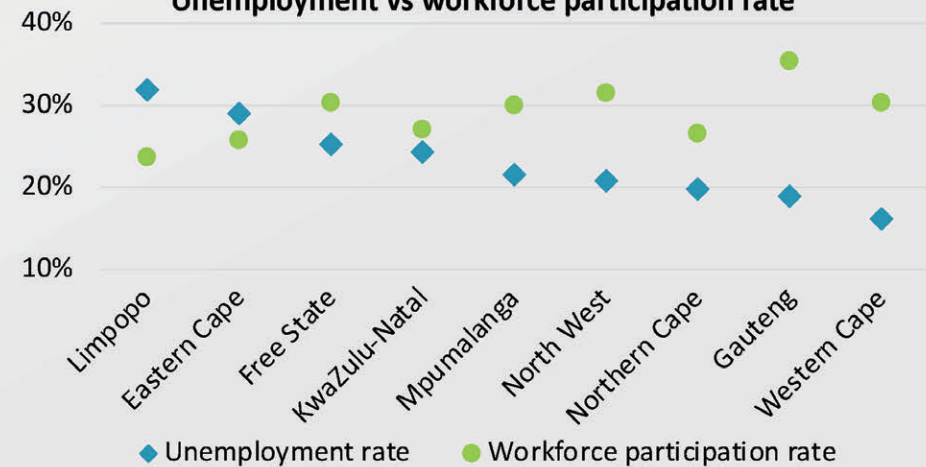
- Construction phase:
  - Project based job creation (4-8 months) with a total of
    - 5 800 job opportunities created for semi-skilled/unskilled workers
    - 6 400 job opportunities created for skilled workers
- Operational phase:
  - Permanent, local job creation:
    - 880 job opportunities for unskilled workers
    - 1 540 job opportunities for semi-skilled workers
    - 330 job opportunities for skilled workers
  - Temporary, local job creation:
    - 1 100 job opportunities for unskilled workers

- Each job created, will have significant downstream and indirect contributions to the local economy.
- Each household head, earning an income, has on average 3 dependents (varying slightly by province), that is, 39 900 dependents for all temporary jobs and 8 250 dependents for all permanent jobs (construction and operational phases).
- The unemployment rates presented per province (Source: Census 2011, which means that given the national unemployment trajectory, is likely significantly worse now), illustrates the need for additional job creation.

Average number of dependents



Unemployment vs workforce participation rate





# Summary of demographics on sites

The demography, according to StatsSA published census and community survey data, in each Local Municipality (LM) where the Charge sites are planned to be placed are summarised per province.

This serves as a high-level description of the populations / demographics where these investments are planned. In summary:

- Gauteng is the most populous province where Charge stations are planned (>18 million people, 2011 Census).
- The Western Cape and Gauteng have 93% and 89% urban households respectively while the majority of households in the Northern Cape (61%), Mpumalanga (65%) and Limpopo (81%) provinces are in non-urban settings.
- The largest share of the working-age population resides in Gauteng (52%), KwaZulu-Natal (12%), Western Cape (9%) and Mpumalanga (7%).
- The unemployment rate is the highest in Limpopo (32%) and the Eastern Cape (29%), coinciding with the lowest workforce participation rates.
- Interestingly, the Northern Cape has one of the lowest unemployment rates (20%), but the highest proportion of unskilled working-age population: 69%.
- Gauteng (16%) and the Western Cape (13%) have the highest proportion of skilled working-age populations.
- The Western Cape (10%) and Gauteng (11%) provinces also have the highest proportion of top 10% earners in terms of provincial income distributions.
- Gauteng and KwaZulu-Natal house the highest number of “no income” and “bottom 50%” earners.



# Upscaling the economic impact of operational phase

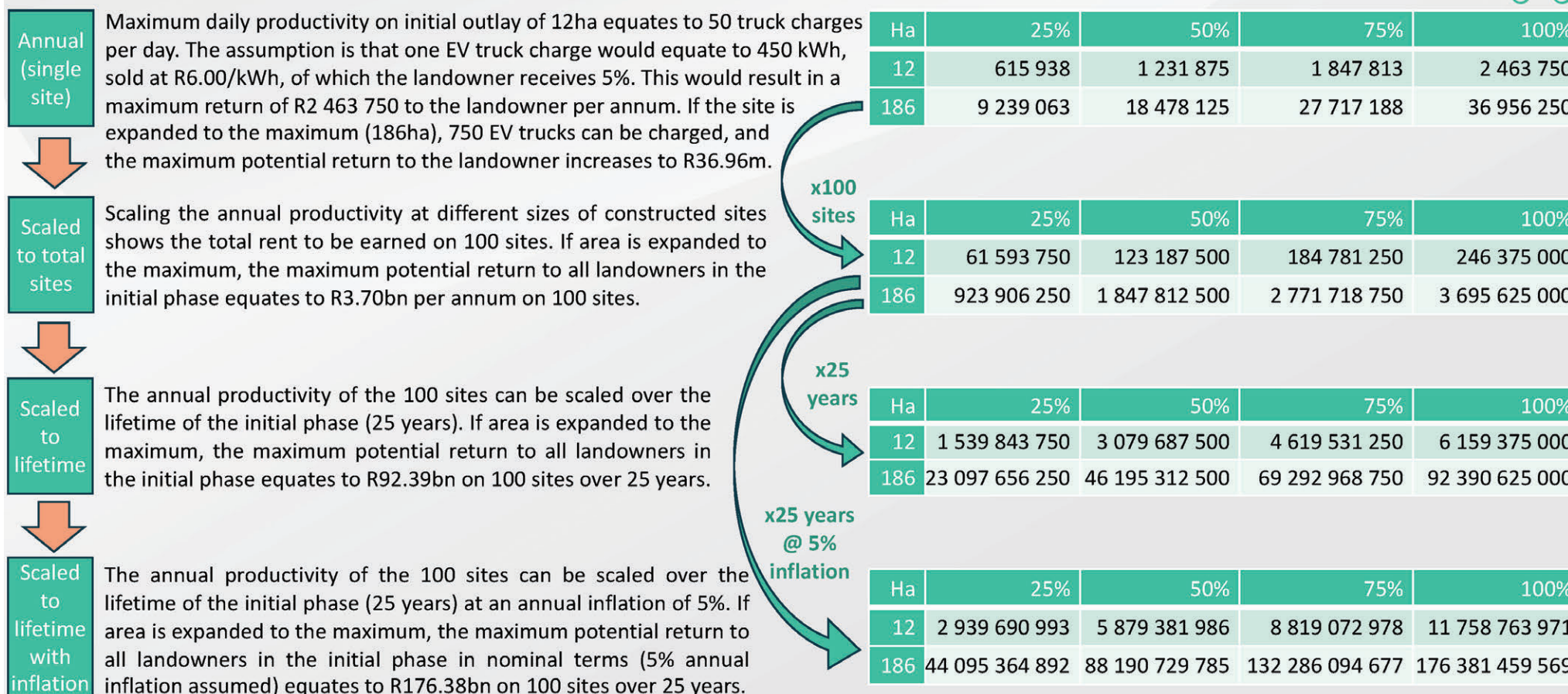


Contribution to economic activity:

Rent



Gross rent payment to landowner from energy sales linked to scale





# Upscaling the economic impact of operational phase

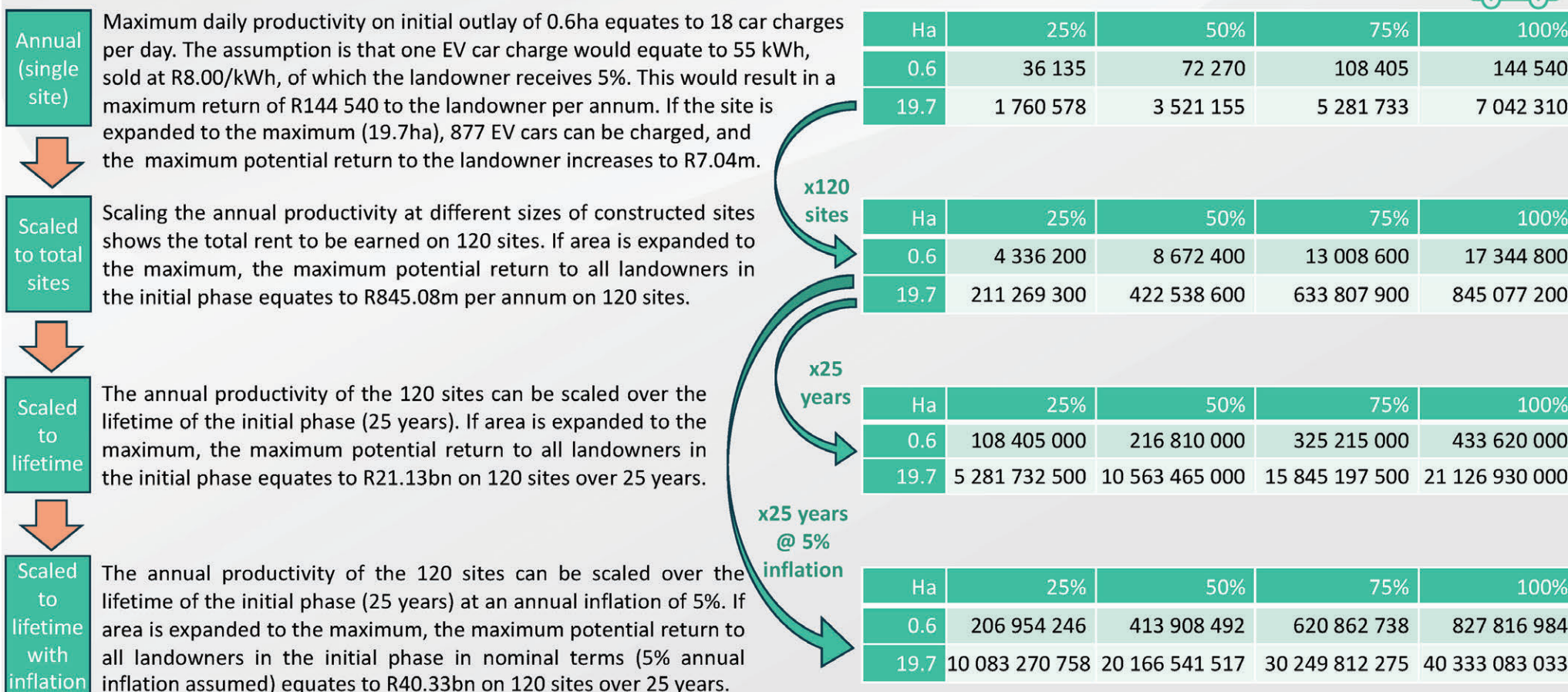


Contribution to economic activity:

Rent



Gross rent payment to landowner from energy sales linked to scale





# Upscaling the economic impact of operational phase



Contribution to development:

Community



Gross contributions to Sumbandila Scholarship Trust from energy sales linked to scale



Productivity:

	Ha	Productivity:			
		25%	50%	75%	100%
Annual (single site)	12	123 188	246 375	369 563	492 750
	186	1 847 813	3 695 625	5 543 438	7 391 250
Scaled to total sites	12	12 318 750	24 637 500	36 956 250	49 275 000
	186	184 781 250	369 562 500	554 343 750	739 125 000
Scaled to lifetime	12	307 968 750	615 937 500	923 906 250	1 231 875 000
	186	4 619 531 250	9 239 062 500	13 858 593 750	18 478 125 000
Scaled to lifetime with inflation	12	587 938 199	1 175 876 397	1 763 814 596	2 351 752 794
	186	8 819 072 978	17 638 145 957	26 457 218 935	35 276 291 914

x100 sites

x25 years

x25 years @ 5% inflation



# Upscaling the economic impact of operational phase



Contribution to development:

Community



Gross contributions to Sumbandila Scholarship Trust from energy sales linked to scale

Annual  
(single site)

Maximum daily productivity on initial outlay of 0.6ha equates to 18 car charges per day. The assumption is that one EV car charge would equate to 55 kWh, sold at R8.00/kWh, of which Sumbandila receives 1%. This would result in a maximum contribution of R28 908 to Sumbandila per annum. If the site is expanded to the maximum (19.7ha), 877 EV cars can be charged, and the maximum potential contribution to Sumbandila increases to R1.41m.



Scaled to total sites

Scaling the annual productivity at different sizes of constructed sites shows the total contribution to be made on 120 sites. If area is expanded to the maximum, the maximum potential contribution to Sumbandila in the initial phase equates to R169.02m per annum on 120 sites.



Scaled to lifetime

The annual productivity of the 120 sites can be scaled over the lifetime of the initial phase (25 years). If area is expanded to the maximum, the maximum potential contribution to Sumbandila in the initial phase equates to R4.23bn on 120 sites over 25 years.



Scaled to lifetime with inflation

The annual productivity of the 120 sites can be scaled over the lifetime of the initial phase (25 years) at an annual inflation of 5%. If area is expanded to the maximum, the maximum potential contribution to Sumbandila in the initial phase in nominal terms (5% annual inflation assumed) equates to R8.07bn on 120 sites over 25 years.

Productivity:

Ha	25%	50%	75%	100%
0.6	7 227	14 454	21 681	28 908
19.7	352 116	704 231	1 056 347	1 408 462

x120 sites

Ha	25%	50%	75%	100%
0.6	867 240	1 734 480	2 601 720	3 468 960
19.7	42 253 860	84 507 720	126 761 580	169 015 440

x25 years

Ha	25%	50%	75%	100%
0.6	21 681 000	43 362 000	65 043 000	86 724 000
19.7	1 056 346 500	2 112 693 000	3 169 039 500	4 225 386 000

x25 years @ 5% inflation

Ha	25%	50%	75%	100%
0.6	41 390 849	82 781 698	124 172 548	165 563 397
19.7	2 016 654 152	4 033 308 303	6 049 962 455	8 066 616 607



# Meta study on the impact on Agriculture

Charge (the client) aim to establish a network of car and truck electric vehicle charging stations along South Africa's highways and main roads. The aim of this report is to provide the client with an independent analysis of how much agricultural land will be affected in each category of agricultural land-use, and what is the potential loss (or gain) in agricultural income and jobs in each of the Local Municipalities where sites will potentially be located.

The analysis is based on a range of spatial datasets (i.e. South African National Land Cover, Grazing Capacity, Land Capability, Protected areas, Crop Types etc.) from which the extent of the Charge site area will be characterized. Finally, the prevalent crop, horticulture and / or livestock income that could potentially be generated on each charge site was summarised per local municipality and a high-level demographic overview of the local municipalities is provided.



## Spatial contextualisation

The actual locations identified by Charge, have a total surface area of 10 823ha. These locations and boundaries change continually as the company negotiates with individual land owners<sup>1</sup>.

2 863ha (26%) of this area can be classified as field crop boundaries: fields, that are currently or have been previously cultivated for agricultural production. For 1 866ha (65%) of the field crop area (in Limpopo, Free State, Mpumalanga, North West and Western Cape only) the detail of crops produced on these fields is available.

Table 1: Current land use of the Charging sites

	Area (ha)	% contribution
Grassland & Shrubland	4 845	34.8%
Agricultural Land use	3 406	31.5%
Natural Forrest	1 822	16.8%
Barren land	593	5.5%
Wetlands	53	0.5%
Water	28	0.3%
Village	24	0.3%
Roads	23	0.2%
Mines	14	0.1%
Residential	8	0.1%
Offices & Industrial	6	0.0%
Eroded land	1	0.0%
Urban parks	0	0.0%
<b>Total</b>	<b>10 823</b>	

Source: South African National Landcover (2020)

<sup>1</sup>The spatial analysis is based on the planned site boundaries, shared by Charge in October 2023. Where there were multiple boundaries per location, the 1ha / 20ha equivalent boundary was selected as the “initial site” for each location – for which this land use impact study was done.

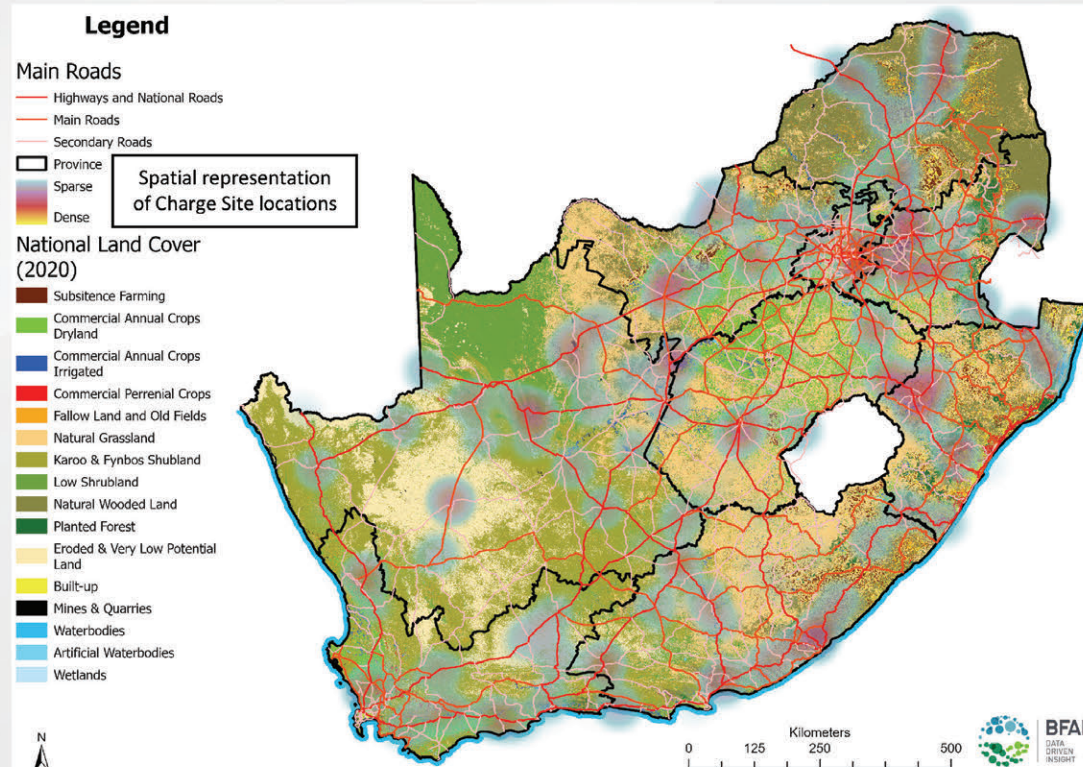


Figure 1: South African national land cover with Charge site density map and road infrastructure. (DEA, 2020 & BFAP, 2023)



# Cultivated fields

Field crop boundaries (cultivated fields) make up only 2 861 hectares (23%) of the total site area. The majority of these field crop boundaries are classified as rainfed, annual cultivation fields, consisting of both cash crops and planted pastures (2 497ha, 87%) whereas horticulture, subsistence farming and pineapple fields contribute an additional 128ha, 96ha and 73ha each (10% in total).

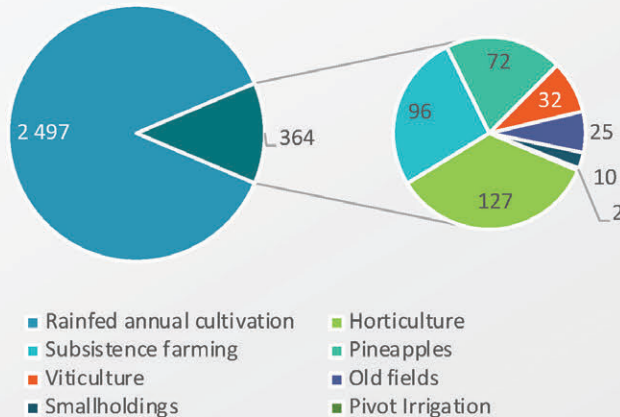


Figure 2: Field crop boundaries on Charge sites

## Legend

### Main Roads

- Highways and National Roads
- Main Roads
- Secondary Roads

### Province

- Sparse
- Dense

Spatial representation of Charge Site locations

### Field Crop Boundaries

- Food Gardens
- Horticulture
- Horticulture / Viticulture
- Non-pivot irrigated Annual Crop Cultivation / Planted Pastures
- Nursery
- Old Fields
- Pineapples
- Pivot Irrigation
- Rainfed Annual Crop Cultivation / Planted Pastures
- Rooibos
- Shadenet
- Small Holdings
- Subsistence Farming
- Tea Plantations
- Viticulture

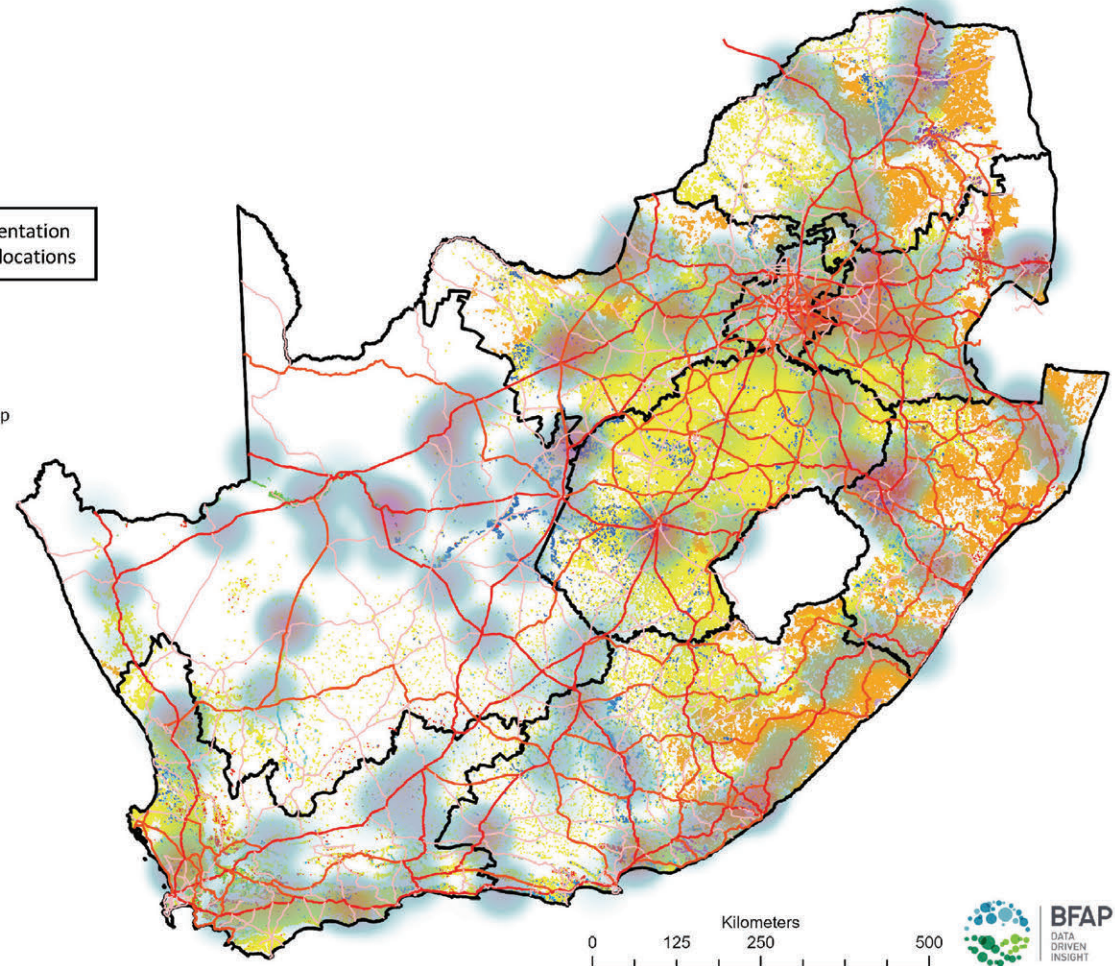


Figure 3: Field crop boundaries overlayed with Charge site densities (DALRRD, 2021 & BFAP, 2023)



## Crop type information

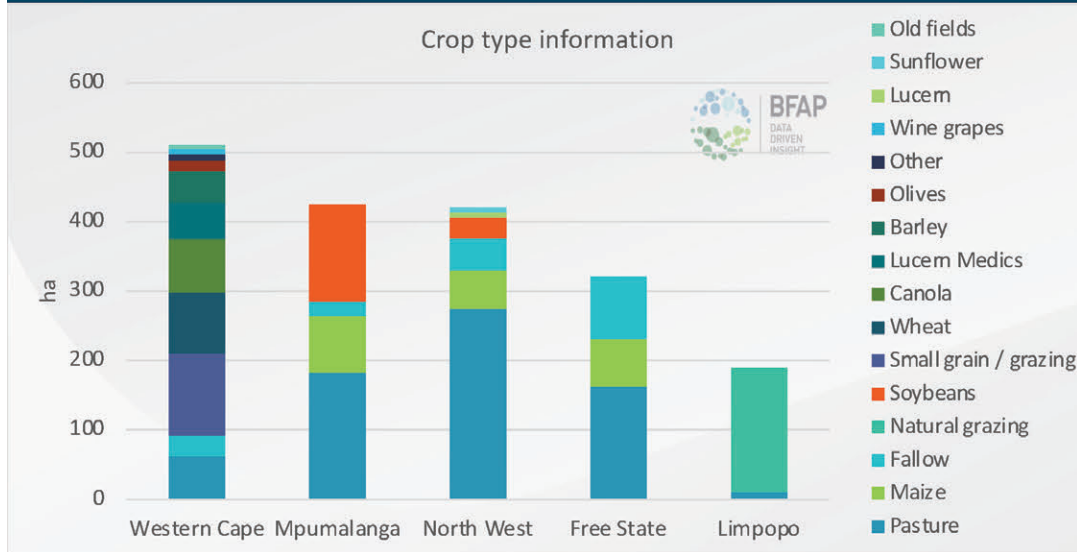


Figure 3: Crop type information on site areas (DALRRD, 2021 & WCDa, 2017; BFAP, 2023)

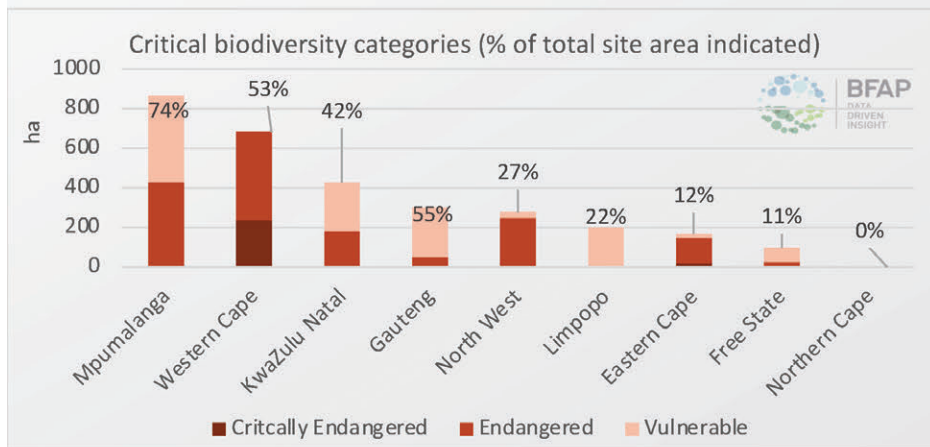


Figure 5: Critical biodiversity on site areas (SANBI 2022 & BFAP, 2023)

The 2021 crop type information (DALRRD) is available for the main summer crop producing provinces: North West, Free State and Mpumalanga. The Western Cape has conducted two flyover censuses, the latest published set from 2017 will be used. Finally, Limpopo has also conducted a flyover census in 2011, this is very outdated but some indication of the composition of the field crop boundaries in the province is an improvement on no data at all.

The available crop type information accounts for 1 866ha (65% of all cultivated fields on charge sites). The majority of cultivated fields in the 5 provinces where data is available are under a combination of pasture crops: natural grass and planted pastures (869ha, 47%) followed by maize production (204ha, 11%) and fallow fields (189ha, 10%). Together, these account for 68% of all cultivated fields in these provinces.

In the Western Cape, 327ha (64%) of cultivated fields are field crops (typically wheat, barley, canola), 25% of the cultivated fields are pastures and other fodder crops (130ha) and fallow fields & horticultural crops make up the rest of the cultivated fields.

The Critical Biodiversity Areas (CBA's) vegetation categorization by SANBI aims to support sustainable development through sustainable land use management. **These vegetation categorisations cover the total country's extent and therefore include areas where natural vegetation would have been classified as endangered, but where land use has already changed in the past.** Critical and Endangered biodiversity vegetation categories of land make up a significant portion of the Western Cape Charge site areas (53%), with less representation in other provinces. These classifications on natural vegetation will likely pose some limitations on land use change applications, mainly in the Western Cape.



# Land capability, representing land use potential



The land capability dataset (see Figure 7) classifies South Africa's surface area into most to least suitable profiles for "natural or unimproved rain-fed (dryland)" production, based on soil (30% consideration), climate (40%) and terrain (30%) capabilities. A land capability class is an interpretive grouping of land units with similar potentials and continuing limitations or hazards. It is a more general term than land suitability and is more conservation oriented. The land capability classification does not take current crop cultivation, crop suitability nor unique agricultural land into consideration. It involves consideration of (i) the risks of land damage from erosion and other causes and (ii) the difficulties in land use owing to physical land characteristics, including climate.

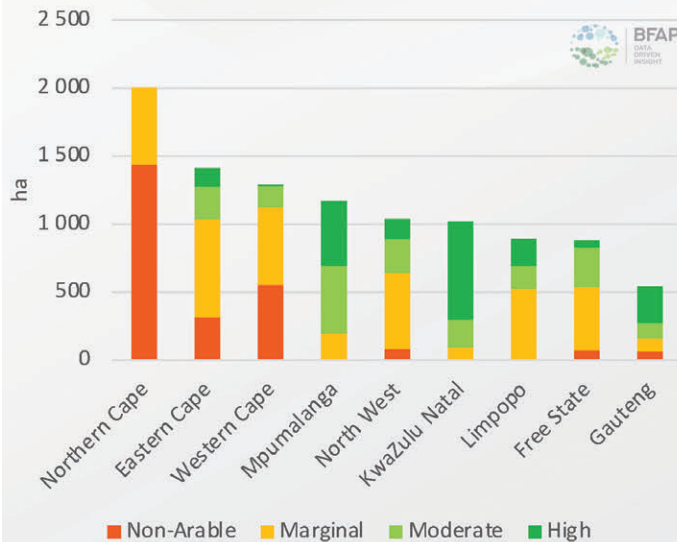


Figure 6: Land capability class per province for total site areas

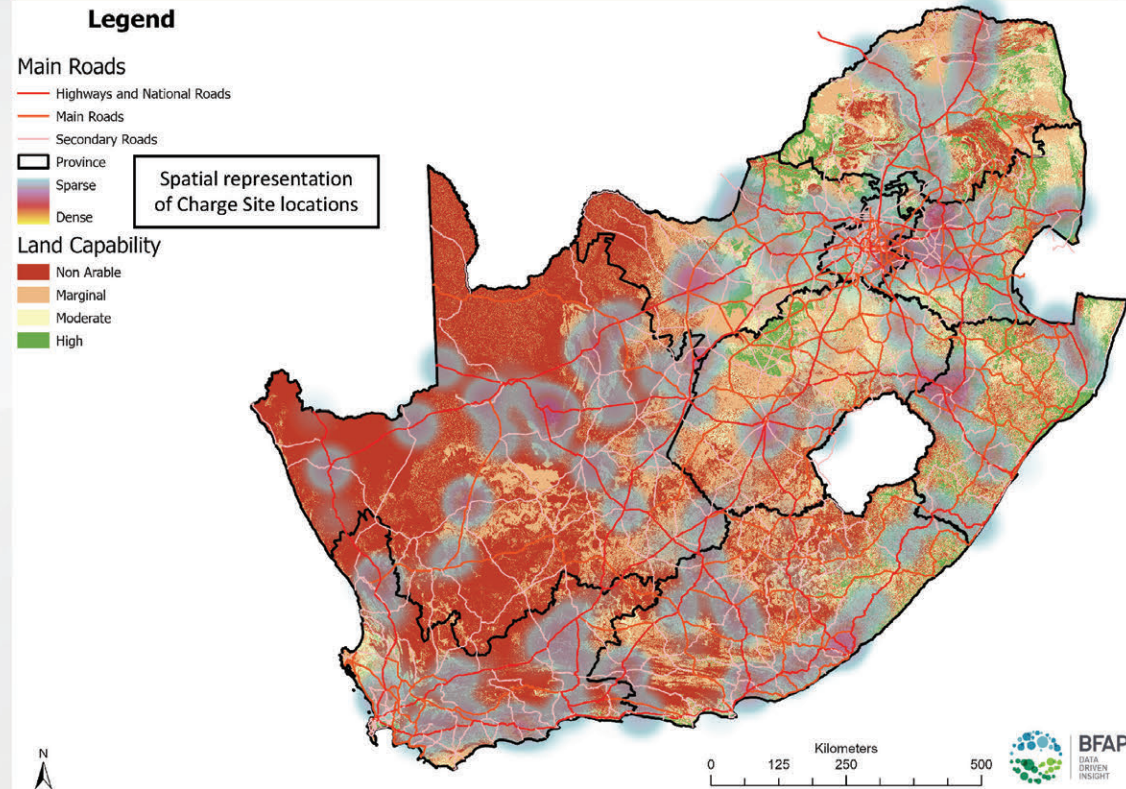


Figure 7: Land capability overlaid with Charge site location density map (DAFF, 2019 & BFAP, 2023)

Figure 6 shows that the Northern Cape Charge sites represent the largest area, but has only non-arable to marginal land capability class. Whereas Mpumalanga and KwaZulu Natal site areas comprise of mostly moderate to high land capability classes.

In summary, 25% of all the Charge site area falls in non-arable land capability, 37% is classified as marginal, 19% as moderate and 20% as high land capability class.



# Protected Agricultural Areas, as developed by DALRRD

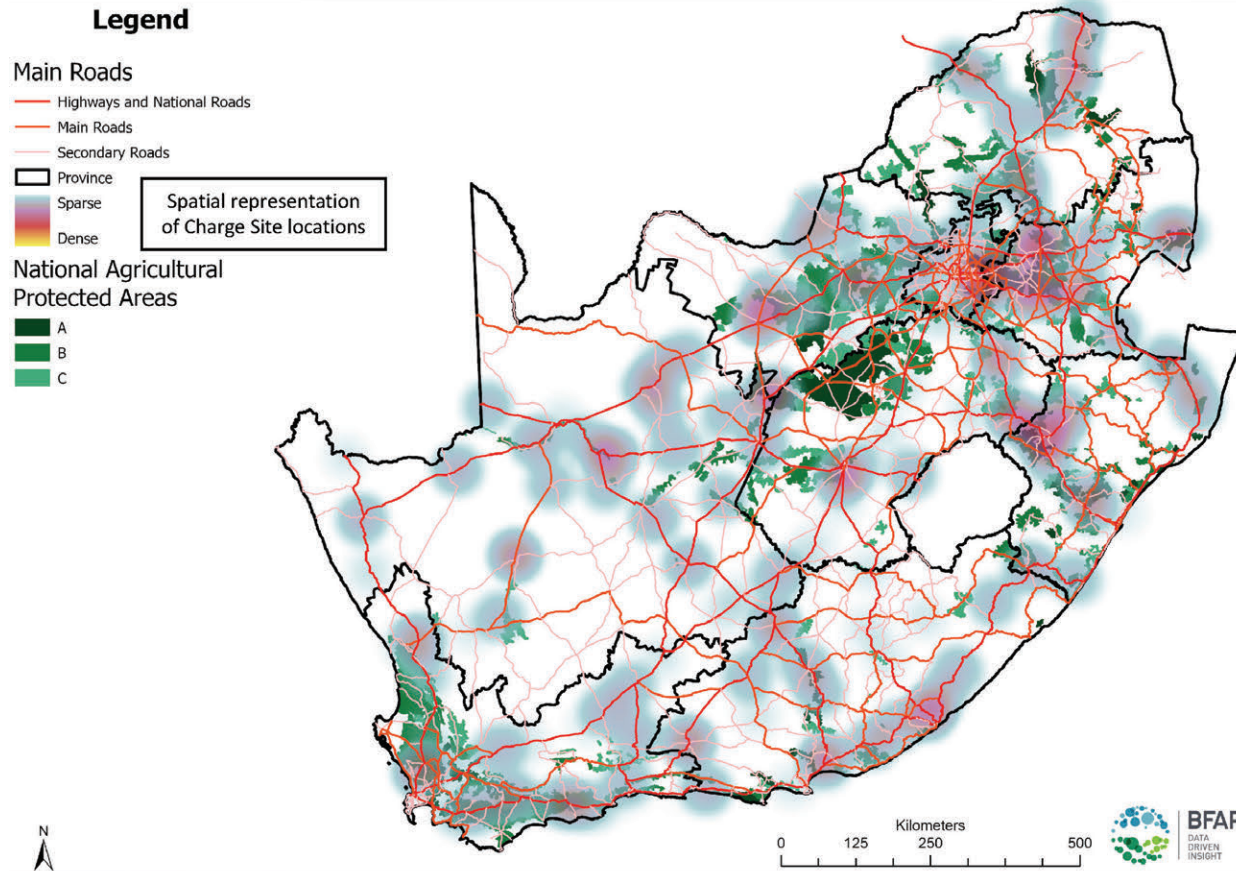


Figure 8: Protection of high-potential agricultural land (DALRRD, 2023 & BFAP, 2023)

A “Protected Agricultural Area (PAA)” is defined as a:

*“cartographic delineated area of agricultural land, preserved for purposes of ensuring high value agricultural land is protected against non-agricultural land uses in order to promote the long-term agricultural production and food security”.*

PAAs are therefore regarded as large, relatively homogeneous portions of high value agricultural land that have the potential to sustainably, in the long-term, contribute significantly to the production of food.

The aim of these areas is to:

- Be included and gazetted as PAAs as defined under PDALB, when it is enacted (process is underway);
- Be incorporated within current spatial planning mechanisms.

A total of 2 731ha (25%) of Charge site area currently falls under PAA categories A – C, which will be designated as national protected areas.

Figure 9 below lists the contribution per province.

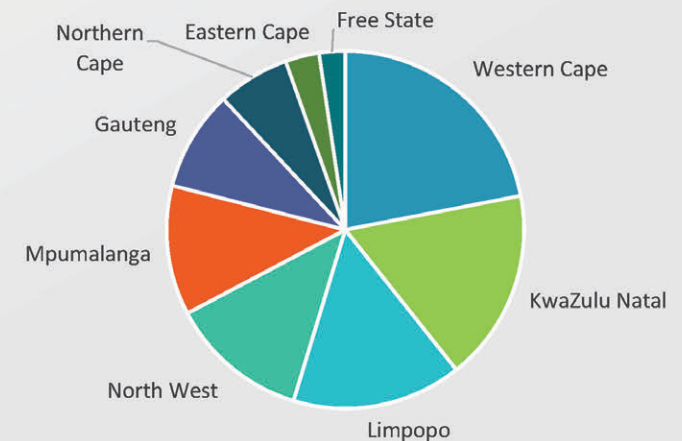


Figure 9: Total national Protected Agricultural Areas per Province (DALRRD, 2023 & BFAP, 2023)



## Protected Agricultural Areas, as developed by DALRRD



Table 2 below details the top 3 landcover classes currently occurring on the National Protected Agricultural Areas (Landcover, 2020).

Most of these areas are currently under cropland production (1 216ha, 45% of all National Protected Agricultural Areas), followed by orchards (397ha, 15%), grassland (356ha, 13%) natural forests (309ha, 11%) and shrubland (295ha, 11%). The remaining area is made up of fallow land, plantations and some other landcover classes. These National Protected Agricultural Areas contribute 44% to the total charge site area in the Western Cape, up to 48% of the charge site area in Limpopo and 34% of the charge site area in both KwaZulu Natal and the North West provinces.

Table 2: Summaries on the current land use of national protected agricultural areas (DALRRD, 2023 & BFAP, 2023)

	Western Cape	KwaZulu Natal	Limpopo	North West	Mpumalanga	Gauteng	Northern Cape	Eastern Cape	Free State
Top 3 Landcover classes on National Ag. Protected areas.	Commercial cropland	Orchard	Natural Forrest	Commercial cropland	Commercial cropland	Commercial cropland	Shrubland	Grassland	Commercial cropland
	Shrubland	Grassland	Commercial cropland	Grassland	Orchard	Grassland	Grassland	Shrubland	Grassland
	Orchard	Fallow land	Fallow land	Fallow land	Grassland	Wetlands	Orchard		Fallow land
Sum of top 3 land cover classes	565	426	416	332	310	246	175	83	63
Total National Ag Protected Area	599	474	419	343	320	247	178	83	64
Total Charge Site Area	1 287	1 267	872	990	3 224	615	2 007	1 326	1 019
% of Charge site area, that is a national protected area	44%	34%	48%	34%	10%	40%	9%	6%	6%



# Grazing capacity and livestock production



Figure 10 below shows South Africa's grazing capacity (in ha/Large Stock Unit (LSU)) overlaid with the Charge site density map while Figure 11 presents the contribution of various grazing capacity classes to the total charge site areas. The shrubland / Karoo vegetation in the Northern and Western Cape have the highest ha/LSU requirements.

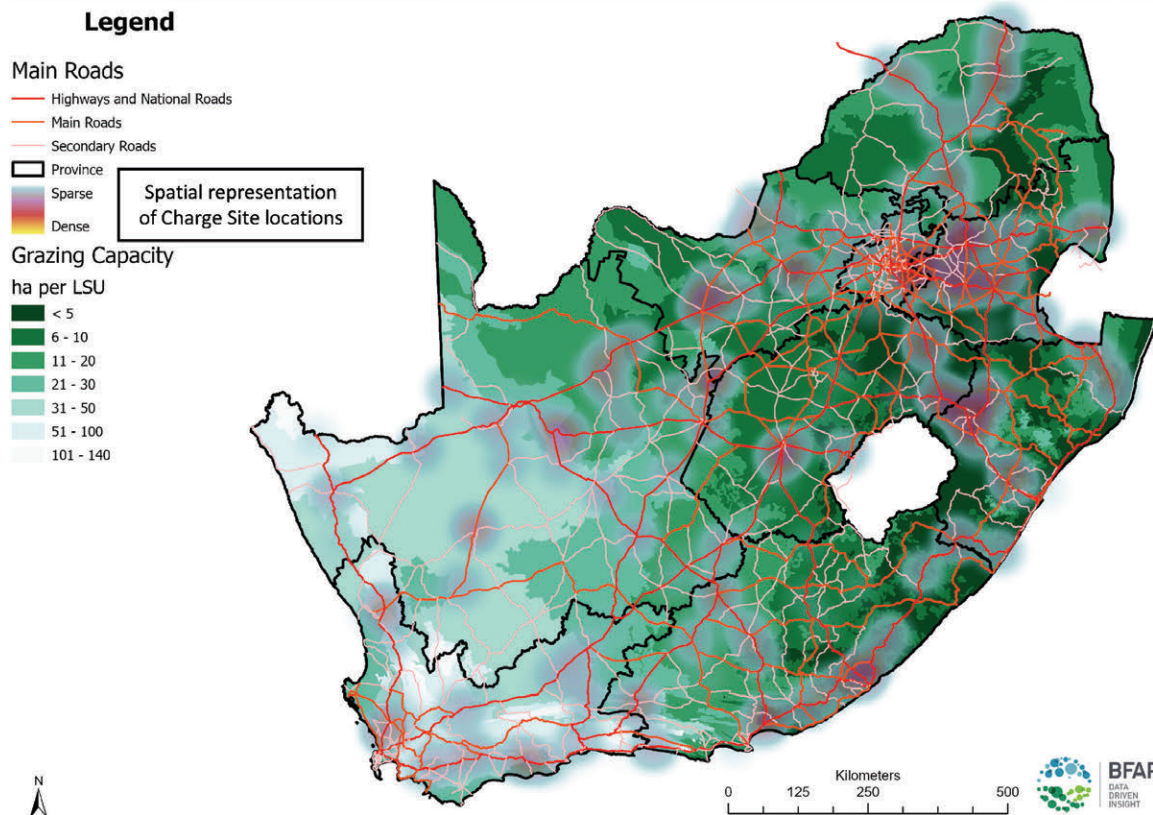


Figure 10: Grazing capacity overlaid with charge site density map (DAFF, 2019 & BFAP, 2023)

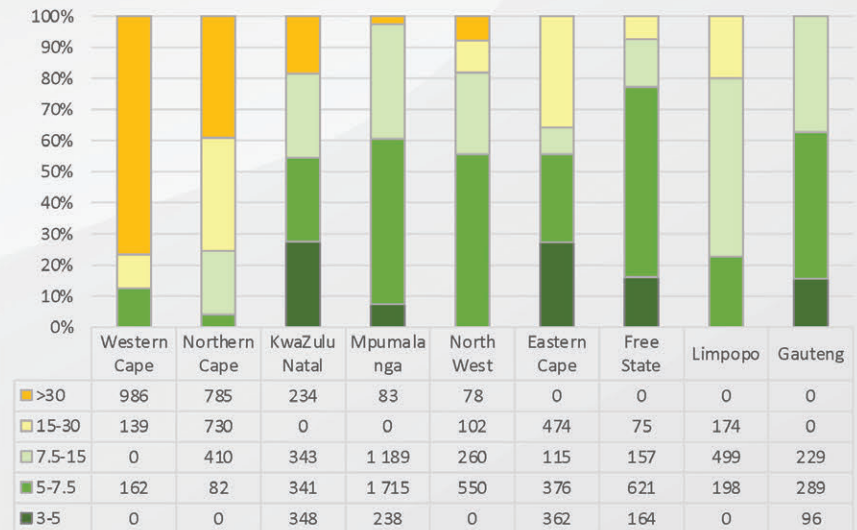


Figure 11: Grazing capacity on Charge sites, per province (DAFF, 2019 & BFAP, 2023)

A total of 1 209ha (mainly in KwaZulu Natal, Eastern Cape, Free State and Mpumalanga) represents land requiring only 3-5ha/LSU. This dataset is further used to develop potential income per hectare estimations.

Similarly to the protection of high-potential agricultural land methodology, the Department of Agriculture has defined high potential agricultural areas, specific to grazing, and has published the Western Cape set to date. The Charge site areas currently contain only category C and D grazing potential area (70ha and 390ha respectively); which are not currently classified as national protected areas.



## Representativity within total Agriculture i.t.o. Area

41% (5 190ha) of the total Charge site area is classified as various agricultural activities by the land cover (see Table 2). In Table 2, the South African total field crop, irrigation, plantation forest, orchards, sugarcane and pineapple area is presented from various sources. Finally, the percentage presents the proportion of the total agricultural activity (in ha) that could potentially be affected by developing these Charge sites.

The total intended Charge site area is considered potential grazing land and the number of LSU's that can theoretically be supported on these sites is calculated at 1 219.

This number is then compared to the 12.8 million heads of cattle that are reported as the South African cattle herd by the Department of agriculture.

Similarly crop areas for other agricultural activities are compared: **The impact is estimated to be less than 0.1% for all categories of agricultural activity with the exception of plantation forests and orchards.** None of these macro-impact metrics are larger than 1%, and therefore unlikely to significantly affect agricultural production/activities and/or result in significant agricultural job losses.

Table 2: Total charging site area compared to South African totals

	Charge Site Area (ha) <sup>6</sup>	South Africa Total (ha) (2020-2022 avg)	
Field crops	3 238	5 272 000 <sup>1</sup>	<b>0.06%</b>
Irrigation	19	1 390 000 <sup>2</sup>	<b>0.001%</b>
Grazing	1 103 cattle <sup>3</sup>	12 871 853 cattle <sup>4</sup>	<b>0.009%</b>
Plantation Forest	200	117 917 <sup>5</sup>	<b>0.17%</b>
Orchard	1 497	408 881 <sup>6</sup>	<b>0.37%</b>
Sugarcane	237	252 700 <sup>1</sup>	<b>0.09%</b>
Total	<b>5 190</b>		

<sup>1</sup> BFAP Sector Model, 2020 – 2022 average

<sup>2</sup> WRC & DAFF 2018, BFAP 2021

<sup>3</sup> Total large stock units (cattle) that can theoretically be supported by total Charge site area, based on Grazing Capacity (DAFF 2018)

<sup>4</sup> South African cattle herd (DAFF 2018)

<sup>5</sup> SACOL Annual Report (2022/2023)

<sup>6</sup> South African National Land Cover 2020 (SANBI 2020)



## Representativity within total Agriculture i.t.o. Production volumes

Table 3: Total charging site production estimates compared to South African totals

	Production estimate ('000 tonnes)	National Total ('000 tonnes)	%
Soybeans <sup>1</sup>	19.34	1 676 <sup>4</sup>	1.154%
Avocados <sup>2</sup>	0.73	135 <sup>4</sup>	0.539%
Pecans <sup>2</sup>	0.06	23 <sup>5</sup>	0.249%
Cabbage <sup>2</sup>	0.36	165 <sup>4</sup>	0.221%
Carrots <sup>2</sup>	0.34	222 <sup>4</sup>	0.153%
Sunflower <sup>1</sup>	1.10	841 <sup>4</sup>	0.131%
Wheat <sup>1</sup>	1.74	1 979 <sup>4</sup>	0.088%
Sugarcane <sup>2</sup>	15.11	18 484 <sup>4</sup>	0.082%
Maize <sup>1</sup>	11.10	16 017 <sup>4</sup>	0.069%
Wine grapes <sup>2</sup>	0.82	1 292 <sup>5</sup>	0.063%
Macadamias <sup>2</sup>	0.02	59 <sup>5</sup>	0.040%
Table Grapes <sup>2</sup>	0.05	353 <sup>5</sup>	0.014%
Beef <sup>3</sup>	0.049	700 <sup>4</sup>	0.007%
Pineapples <sup>2</sup>	4.52	117 <sup>4</sup>	0.04%
Potatoes <sup>2</sup>	0.08	2 659 <sup>4</sup>	0.003%

<sup>1</sup> It is assumed that all cultivated fields are planted to that particular crop and the yield according to crop suitability is achieved.

<sup>2</sup> Only the area currently under orchards in Local Municipalities where these crops are predominantly cultivated (CoCA, 2017).

<sup>3</sup> Based on grazing capacity and BFAP Farm & Production Modelling assumptions.

For the potential production estimation of major field crops (soybeans, sunflower, wheat, maize) it is assumed that all cultivated fields are planted toward that particular crop (therefore representing an **upper limit of potential production impact**). Given this assumption and the consequent comparison with national statistics from the 2022 season, the largest potential share of production is 1.154% of the national soybean crop. Followed by 0.131% of the sunflower crop, 0.088% of the wheat crop and 0.069% of the national maize crop. **These potential crop production contributions are minute, if compared to the typical seasonal (climate-driven) variability in production (5-year average year-on-year production changes indicated): 12% for soybeans, 7% for maize, 6% for wheat and 0.4% for sunflower.**

All estimated potential orchard production impacts, with the exception of avocados and pineapples, were 0.25% or less of national production totals. For those two commodities, the impact remains less than or close to half a percentage.

For the grazing area impact, the grazing capacity in terms of large stock units (i.e. cattle) was used to estimate that **426 cattle (0.003% of the national cattle herd) could be potentially be sustained on the grazing area** falling in the charge sites and from these cattle, **an estimated 49 tonnes of meat could be produced annually (0.007% of the total beef production in South Africa).**

<sup>4</sup> DALRRD, Abstract of Agricultural Statistics 2022.

<sup>5</sup> BFAP and South African industry organisations' statistics, 2022.



# Income estimation from agricultural activities on proposed Charge sites: Potential income substitution calculation



# Illustration of potential gross margin (income) estimations

## Area:

Landcover 2020  
summary  
per site

Cultivated  
fields (ha)

Grazing area  
(ha)

Orchard area  
(ha)

## Field crops

Quantifying attainable yield for the main field crops  
Calculate the potential income per hectare per LM  
Impose this potential income on field crop hectares of sites and choose the crop for which potential income is the highest

## Livestock

Derive number of LSU's that can be supported per site using the national grazing capacity data.  
Calculate estimated potential income per hectare.  
Impose this potential income on grazing hectares of sites

## Horticulture

Determine the dominant commodity grown per LM using the Agricultural Census 2017.  
Calculate the potential income per hectare.  
Impose this potential income on orchard hectares of sites.

Potential income estimation, from field crops, livestock and horticulture

1) The cultivated fields, grazing and orchard hectares were determined from the National South African Landcover 2020.

2) The BFAP farm level division compiled a set of representative farm level budgets for a selection of field crops and orchard crops as well as hectare/LSU based gross margin (income) estimates for livestock farming.

3) For fieldcrops, the GAEZ yield potential model (see next page) was used to extrapolate relevant gross margin (incomes) per crop to site locations.

4) The average potential income from each subsector (field crops, livestock, horticulture) and summarized per province and local municipality.

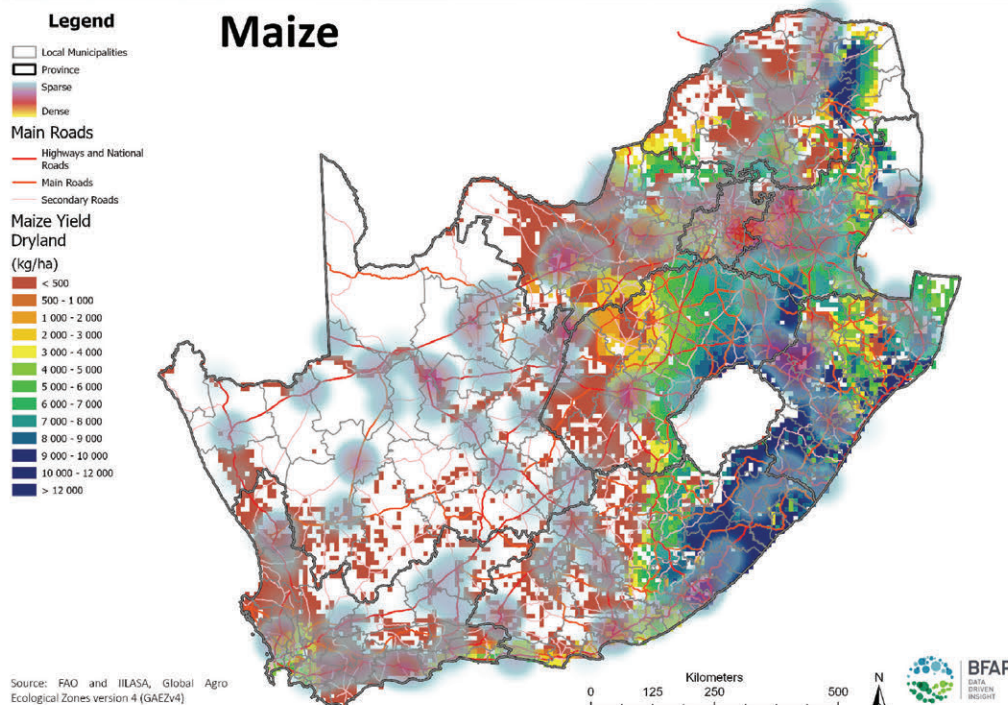
The **Gross Margin** is defined as income (price x volumes) less direct costs (e.g. seed, fertiliser, water for irrigating orchards etc.). But excluding overhead/ indirect costs (e.g. loan repayment, permanent labour etc.).



# Maize & Soybean yield potential

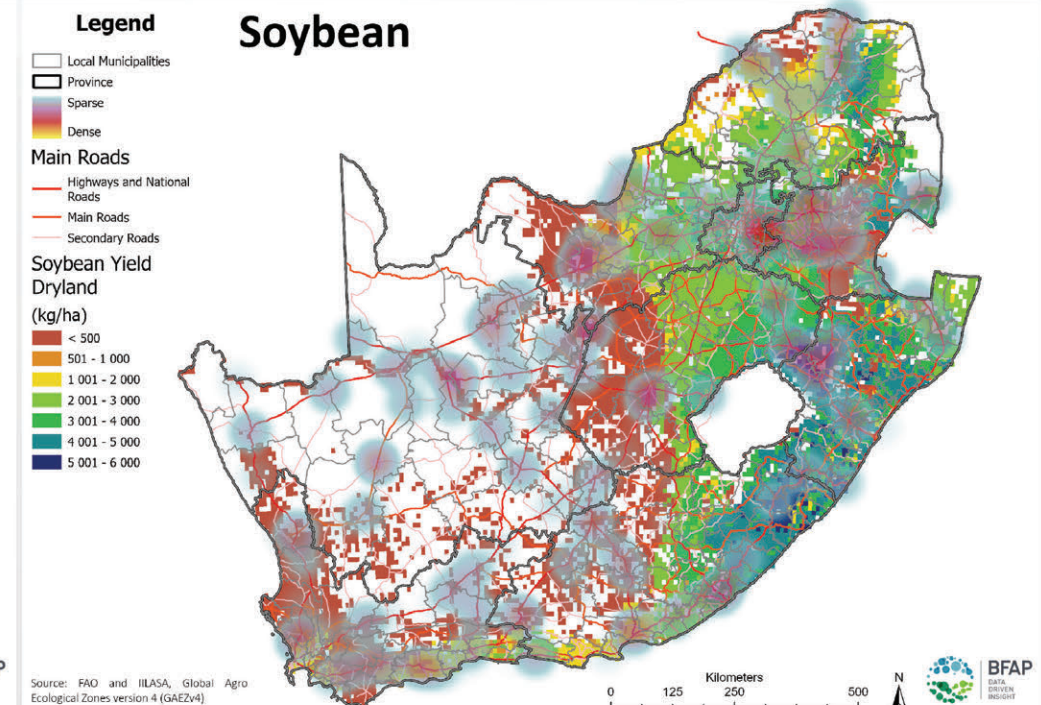


FAO and IIASA (2023) in their Global Agro Ecological Zones (GAEZ) version 4, have published yield potential values based on various agronomic variables with the assumption that high-input regimes (commercial farming equivalent in South Africa) are used. The yield potential for maize, soybeans, sunflower and wheat was linked to each site area and the relevant gross margin (income) from farming activities was calculated.



**Figure : Maize potential dryland yield**

Source: FAO & IIASA (2023)



**Figure : Soybean potential dryland yield**

Source: FAO & IIASA (2023)



## Potential income calculations - Summary



Table 3: Agricultural area per province

The cultivated fields, grazing and orchard hectares per site were determined from the National South African Landcover 2020 and are summarized in Table 3. This is the agricultural area, that could potentially generate an income from the agricultural sector perspective. This income per hectare is estimated in the next step



The BFAP farm level division compiled a set of representative farm level budgets (per natural resource productivity) for a selection of field crops and orchard crops as well as hectare/LSU based gross margin (income) estimates for livestock farming. These were in turn assigned to the site areas, based on natural resource potential proxies. The average income (gross margin) per hectare per subsector is summarised in Table 4.

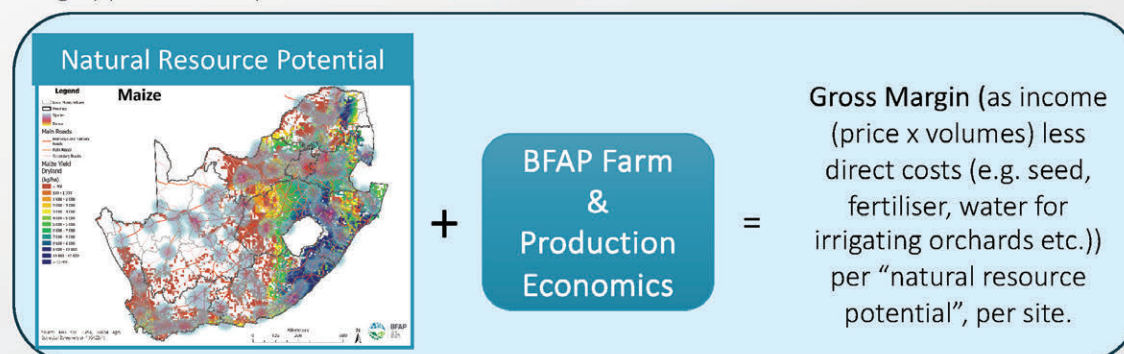


Table 4: Average potential gross margin per subsector

Landcover 2020 area estimate (ha)

Province	Total site area (ha)	Cultivated Fields	Grazing	Orchards
Northern Cape	2 008	218	1 288	2
Limpopo	872	241	92	0
North West	990	384	372	36
Mpumalanga	3 225	506	314	93
Eastern Cape	1 111	419	746	1
Western Cape	1 286	334	725	30
KwaZulu-Natal	1 114	575	411	6
Free State	1 018	302	680	0
Gauteng	614	259	217	0
	<b>10 083</b>	<b>3 238</b>	<b>4 845</b>	<b>168</b>

Average potential gross margin per ha (R/ha)

Province	Fieldcrops	Livestock	Horticulture
Northern Cape	R0	R162	R111 607
Limpopo	R13 175	R381	
North West	R9 767	R346	R101 344
Mpumalanga	R14 238	R478	R112 896
Eastern Cape	R11 222	R418	R62 997
Western Cape	R8 792	R86	R50 190
KwaZulu-Natal	R17 294	R444	R86 809
Free State	R14 396	R515	
Gauteng	R17 294	R532	
<b>Province</b>	<b>R12 520</b>	<b>R477</b>	<b>R87 641</b>

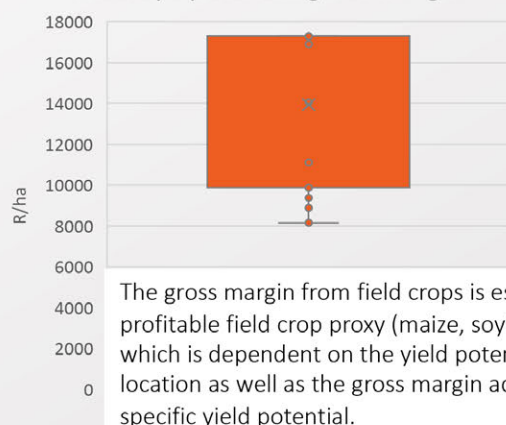


# Potential income substitution calculations - Summary

Table 5: Potential income from agriculture summary

Province	Landcover 2020 area estimate (ha)				Average potential gross margin per ha (R/ha)			Total potential income per subsector (Rands)		
	Total site area (ha)	Cultivated Fields	Grazing	Orchards	Fieldcrops	Livestock	Horticulture	Fieldcrops	Livestock	Horticulture
Northern Cape	2 008	218	1 288	2	R0	R162	R111 607	R0	R207 994	R272 320
Limpopo	872	241	92	0	R13 175	R381		R3 174 194	R35 096	R0
North West	990	384	372	36	R9 767	R346	R101 344	R3 745 849	R128 588	R3 692 993
Mpumalanga	3 225	506	314	93	R14 238	R478	R112 896	R7 200 809	R149 718	R10 449 694
Eastern Cape	1 111	419	746	1	R11 222	R418	R62 997	R4 701 041	R312 013	R93 235
Western Cape	1 286	334	725	30	R8 792	R86	R50 190	R2 932 555	R62 137	R1 489 636
KwaZulu-Natal	1 114	575	411	6	R17 294	R444	R86 809	R9 951 113	R182 659	R482 658
Free State	1 018	302	680	0	R14 396	R515		R4 352 798	R350 173	R0
Gauteng	614	259	217	0	R17 294	R532		R4 475 752	R115 514	R0
	<b>12 239</b>	<b>3 238</b>	<b>4 845</b>	<b>168</b>	<b>R12 520</b>	<b>R477</b>	<b>R87 641</b>	<b>R40 534 110</b>	<b>R1 543 892</b>	<b>R16 480 536</b>

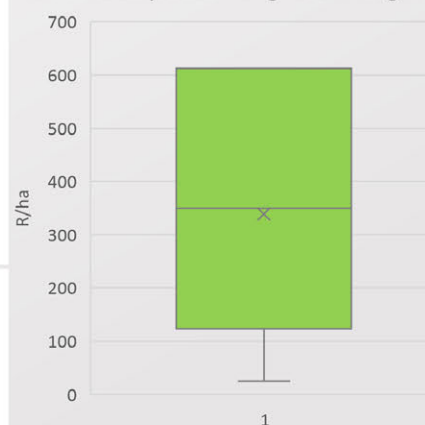
Fieldcrops potential gross margin



The gross margin from field crops is estimated based on the most profitable field crop proxy (maize, soybeans, sunflower and wheat) which is dependent on the yield potential of that crop at that location as well as the gross margin achieved on average for a specific yield potential.

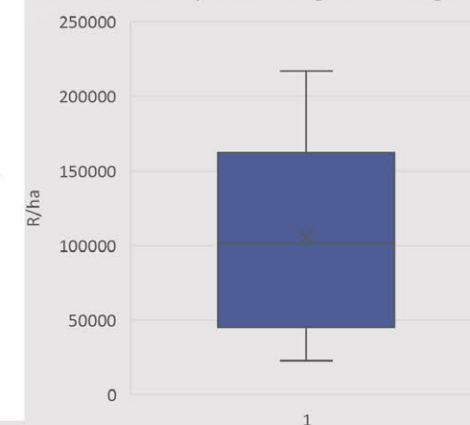
The gross margin from livestock is derived from the gross margin achievable, given levels of grazing capacity. These are then assigned to each site, given the locations' grazing capacity.

Livestock potential gross margin



The relevant horticultural crop is selected based on "orchard and sugarcane" activities located by the landcover data. Then representative gross margins are estimated for the relevant crop and assigned to the Charge sites. In this case, the variation comes primarily from the various horticultural crops that are selected per site.

Horticulture potential gross margin





## Examples and spatial analysis of higher value crop areas

In some cases, the initial charge site boundaries include significant areas / fields of higher value crops. Two examples are highlighted / demonstrated below. The impact on potential agricultural income would be significantly different if the site area was shifted a bit or when the detail of exactly which parts of the site boundary would undergo some form of land use change.

### Table Grapes in the Northern Cape

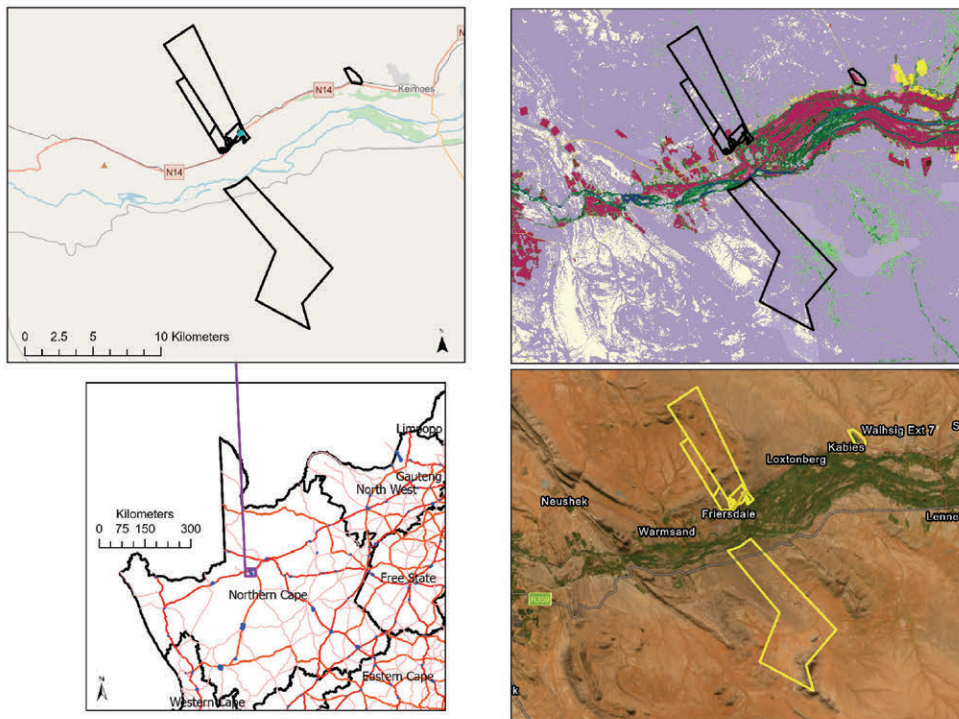


Figure 12: Table grape example in the Northern Cape

Source: Charge & BFAP (2023)

### Sugarcane in KwaZulu-Natal

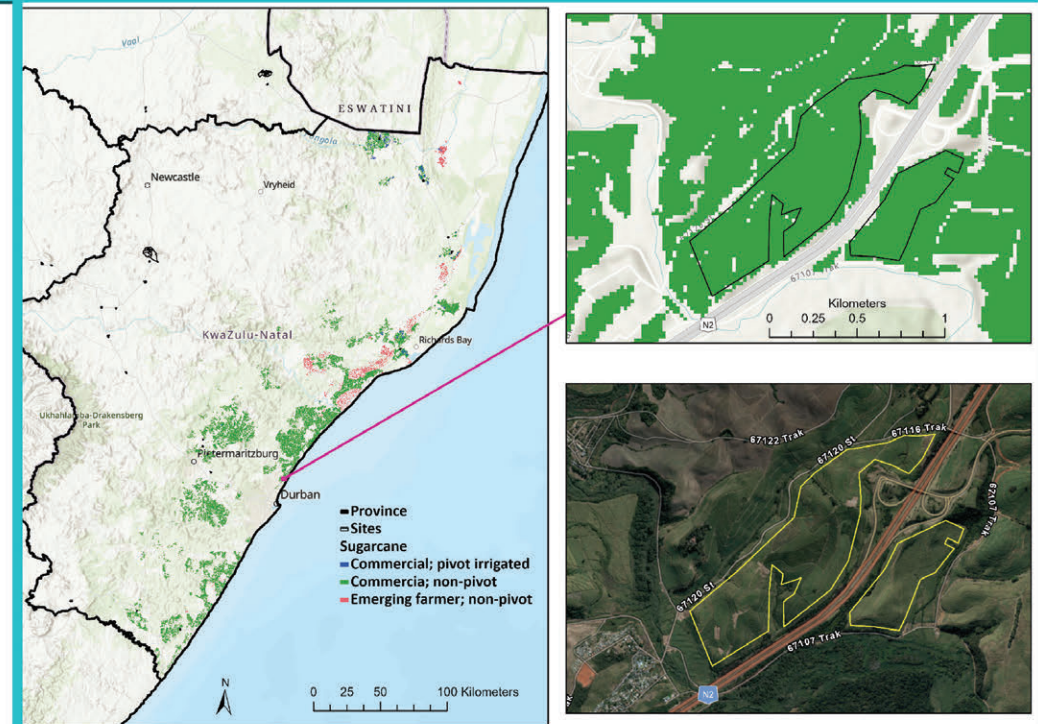


Figure 13: Sugarcane example in the KwaZulu-Natal

Source: Charge & BFAP (2023)



# Thank You



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# Visual Impact Report





# VISUAL IMPACT REPORT

COMPILED BY

Quinton Lawson and Bernard Oberholzer

Visual Specialists

**[www.charge.co.za](http://www.charge.co.za)**

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# Proposed Network of Electric Vehicle Charging Stations with Associated Renewable Energy Facilities

## **Strategic Visual Assessment**

### **Executive Summary**



Prepared for  
Zero Carbon Charge (Pty) Ltd

Prepared by  
Quinton Lawson and Bernard Oberholzer  
Visual Specialists

November 2023  
Updated January 2024



## **1. Background**

Zero Carbon Charge (Pty) Ltd (ZeroCC) plan to roll out a network of car charging stations, powered by renewable energy facilities, along all the main routes across South Africa. Approximately 120 car charging stations with mainly solar facilities, at about 150km intervals, are envisaged at this stage.

A similar number of truck charging stations with larger renewable energy sites are envisaged. In some cases, the car and truck charging stations would be combined at the same site. The intention is to locate the car charging stations in tandem with existing farm stalls or guest houses along major national and provincial routes.

The Visual Specialist Study forms part of a Strategic Environmental Assessment (SEA), the intention of which is to provide early input into the potential visual sensitivity and mitigation of possible sites identified by ZeroCC. The high-level desktop screening study is intended to assess the cumulative project as a whole, and is not a visual impact assessment (VIA) of individual sites.

The term 'visual' includes a range of aesthetic, scenic and amenity values, which contribute to an area's overall 'sense of place' for both natural and cultural landscapes. Scenic resources in particular, often viewed from the main arterial routes, play an important role in the tourism economy of each region.

## **2. Project Description**

The car charging sites would range from an initial 1ha to about 20ha to allow expansion of the solar facilities over time on a phased basis. In other words the solar farms would be modular in that the entire solar facility for each site would not necessarily be built at the same time. Some of the sites have existing farmstalls or guest houses, while new farmstalls are envisaged in other cases.

The purpose of the solar facilities, which make use of a cellular approach, is to provide energy at a local scale for the car charging stations and nearby users. The intention is not to feed into the national grid, which currently lacks capacity, and therefore no additional connecting powerlines would be required.

The mitigating effect of doing cellular generation of energy for green mobility at the local scale is aimed at negating the need to build new electrical grid infrastructure in the form of powerlines and substations to supply the additional demand.

The Developers estimate that this localised cellular network of solar facilities would avoid the need for some 18 000 km of new electrical grid infrastructure often entailing large pylons, and that this would significantly outweigh the potential visual influence of the relatively small solar facilities envisaged. They indicate the comparison of these two approaches in the images below.





The localised cellular approach using solar panels



The electrical grid approach at the national scale

The various components of a car charging station and associated solar facility are listed below, together with a typical footprint in Figure 1.

- Solar arrays (up to 3,5m height);
- Charging station control room in a standard 6m container (3m height).
- Natural gas on-site generator;
- Car charging point with canopy;
- New farmstall in some cases, approx. 100m<sup>2</sup>;
- 5 000 to 10 000 litre water storage tanks, typically behind the farmstall;
- Underground/overhead 33 kV powerlines (9m height);
- Security fencing (2m height).



Figure 1: 3-D view of a typical 1 hectare car charging station and solar facility, which includes a farmstall.



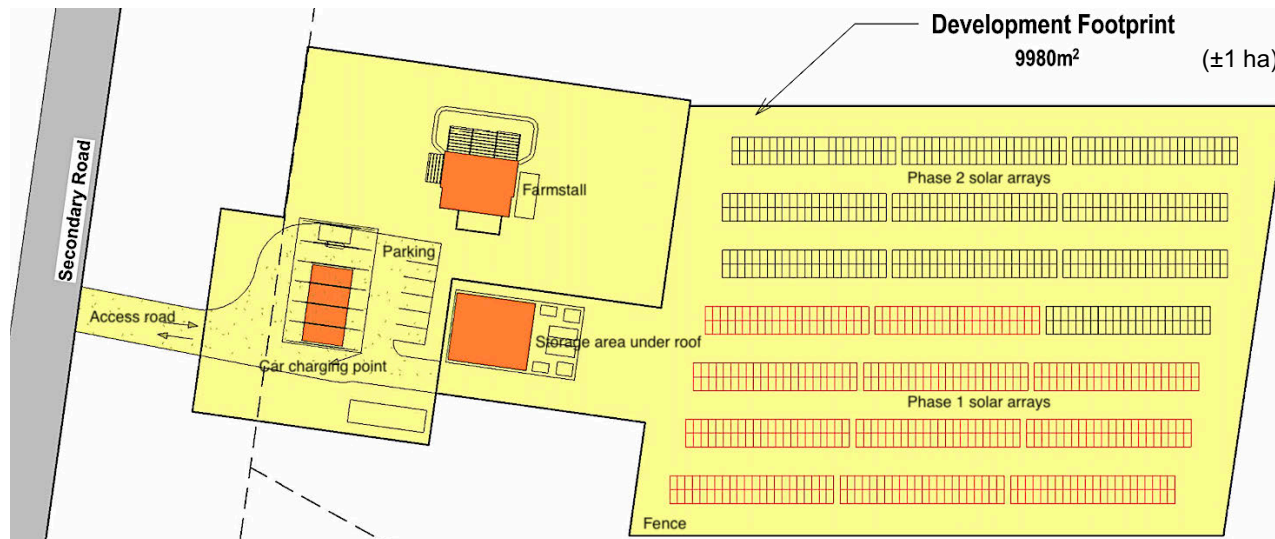


Figure 2: Typical site development plan for a 1 hectare car charging station and solar facility.



Figure 3: View of a typical solar facility adjacent to an arterial route near De Aar.



### 3. Study Methodology

The strategic visual assessment included the following:

#### *Site Description and Possible Mitigation:*

A description and possible visual mitigation measures to avoid or minimise potential visual impacts are provided for each site in a series of tables, accompanied by Google Earth ground views. A preliminary visual sensitivity rating before mitigation is provided. (See **Addendum A**).

#### *Visual Sensitivity Mapping:*

Mapping of scenic topographic features, protected areas and potentially sensitive receptors (see Table 1) for each site. General information sources for the mapping are given in Table 2. The maps indicate potential visual sensitivity on a gradient from very high to high, medium and low visual sensitivity based on criteria in Table 3. (See **Addendum B**).

*Table 1: Scenic Features and Sensitive Receptors*

<b>Topographic features</b>	Landforms such as mountains, koppies, cliffs and rock outcrops contribute to the scenic value of the area, providing visual interest or contrast.
<b>Water features</b>	Water features, including rivers, lakes and large dams provide scenic and amenity value, particularly in arid landscapes.
<b>Cultural landscapes</b>	Cultural landscapes, such as rural landscapes, historical buildings or settlements, battle sites, cemeteries etc. have cultural value, increasing visual sensitivity.
<b>Protected Areas</b>	Protected areas, such as national parks, nature reserves and other conservation areas tend to increase visual sensitivity.
<b>Human settlements</b>	Human settlements, such as farmsteads, villages or towns, and particularly residential areas, tend to be sensitive to visual intrusions such as power lines and other infrastructure.
<b>Scenic and arterial routes</b>	National roads, provincial roads, scenic routes and mountain passes or poorts tend to be visually sensitive, especially for the tourism economy.



Table 2: Information Sources

Data / Information	Source	Date	Type	Description
Project Data	Zero Carbon Charge (PTY) LTD	2023	Vector Digital Spatial Data	Project Layouts by proponent
South African Protected Areas Database	Department of Forestry, Fisheries and the Environment (DFFE) <a href="https://egis.environment.gov.za/gis_data_downloads">https://egis.environment.gov.za/gis_data_downloads</a>	2023 Q2	Vector Digital Spatial Data	Spatial delineation of Protected Areas in South Africa, updated quarterly
1:50 000 Topographic Series GIS Data	Chief Directorate National Geo-spatial Information (CDNGI) <a href="http://www.cdngiportal.co.za/cdngiportal/">http://www.cdngiportal.co.za/cdngiportal/</a>	2023	Vector Digital Spatial Data	Spatial Data 1:50 000 Topographic Series including elevational data (20m contours)
1:50 000 Topographic Series Maps	Chief Directorate National Geo-spatial Information (CDNGI) <a href="http://apollo.cdngiportal.co.za/erdas-iws/ogc/wms/CDNGI_PORTAL_BACKDROP">http://apollo.cdngiportal.co.za/erdas-iws/ogc/wms/CDNGI_PORTAL_BACKDROP</a>	2023	Georeferenced Raster Mosaic	CDNGI_50K_Current_Mosaic
1:250 000 Topo-cadastral Series Maps	Chief Directorate National Geo-spatial Information (CDNGI) <a href="http://apollo.cdngiportal.co.za/erdas-iws/ogc/wms/CDNGI_PORTAL_BACKDROP">http://apollo.cdngiportal.co.za/erdas-iws/ogc/wms/CDNGI_PORTAL_BACKDROP</a>	2023	Georeferenced Raster Mosaic	CDNGI_250K_Current_Mosaic
Spatial Cadastral Data	Cape Farm Mapper 3 <a href="https://gis.elsenburg.com/apps/cfm/">https://gis.elsenburg.com/apps/cfm/</a>	2023	Vector Digital Spatial Data	Spatial Cadastral Data of Farm Boundaries
South African Heritage Resources Agency	National Heritage Sites Inventory Database	2017	Vector (Point) Digital Spatial Data	National Heritage Sites, Graded
Open Street Map (OSM) Spatial Data	<a href="http://www.openstreetmap.org">www.openstreetmap.org</a> <a href="http://www.geofabrik.de">www.geofabrik.de</a>	2023	Vector Digital Spatial Data	South Africa Road and Waterway Data
SA Road and Terrain Data	Google Maps ( <a href="https://maps.google.com">maps.google.com</a> )	2023	Online Data	South Africa Road and Terrain Data
SA Satellite Imagery	Google Earth Pro	2023	Online Data	South Africa Satellite Imagery

The buffers recommended in Tables 3a and 3b below are based on the National Wind and Solar SEA prepared with the CSIR for the DFFE (2014), as well as on a number of other visual impact studies for solar energy facilities by the authors. The buffers have, however, been adapted to the smaller solar facilities proposed by ZeroCC.

The visual buffers indicated in the mapping are intended for the solar arrays, substations and battery storage systems (if required), and not for the car charging stations or farmstalls, which tend to be visually insignificant, and would therefore not normally require visual buffers. The buffers are nominal at this stage and need to be adapted to actual site conditions.

The separate tables for each route attached as **Addendum A** need to be read in conjunction with the maps in **Addendum B**. The tables provide a brief description of each site, together with Google Earth street views, as well as possible visual mitigation measures to reduce visual sensitivity, and therefore potential visual impact significance for each site.



The visual buffers indicated on the maps are intended to be nominal and would not apply, or would be reduced, where a proposed site is in a view shadow (i.e. not visible to receptors), or is screened by existing buildings, road embankments or vegetation.

Visual impact significance can be reduced by means of avoidance, visual mitigation or offsets. Avoidance can include relocating or changing the boundaries of the proposed site, or by reducing the footprint of the proposed solar facilities. Mitigation usually involves screen planting or mounding to reduce visual exposure of the solar facilities. Offsets could include landscape reclamation of disturbed or derelict sites.

The context of each site, such as surrounding land uses or disturbed areas, need to be taken into consideration on an individual site basis in order to determine their actual visual impact significance.

*Table 3a: Visual Sensitivity Mapping Criteria (Sites smaller than 10ha)*

Scenic Resources	Very high sensitivity	High visual sensitivity	Medium visual sensitivity	Low visual sensitivity
Scenic topographic features (koppies, outcrops etc).	Feature	Within 150m	-	-
Perennial drainage courses, wetlands, water bodies	Within 30m <sup>1</sup>	Within 60m <sup>1</sup>	-	-
Steep slopes	Slopes > 1:4	Slopes > 1:10	-	-
Sites of heritage or cultural value (historical buildings, battle sites, cemeteries etc)	within 100m <sup>2</sup>	within 200m <sup>2</sup>	-	-
Protected Landscapes / Sensitive Receptors				
Nature reserves, game farms, tourist accommodation	within 250m	within 500m	within 1 km	-
Farmsteads outside the site	within 100m	within 200m	within 300m	-
Settlements (towns, villages)	within 100m	within 200m	within 300m	-
Scenic routes	within 250m	within 500m	within 1 km	-
National Roads (non-scenic)	within 100m	within 200m	within 400m	-
Provincial / arterial routes (non-scenic)	within 60m	within 120m	within 200m	-
Main district roads (non-scenic)	within 30m	within 60m	within 100m	-
Passenger rail lines	within 100m	within 250m	within 400m	-

Notes:

<sup>1</sup> To be determined by Freshwater Specialist

<sup>2</sup> To be determined by Heritage Specialist



*Table 3b: Visual Sensitivity Mapping Criteria (Sites larger than 10ha)*

Scenic Resources	Very high sensitivity	High visual sensitivity	Medium visual sensitivity	Low visual sensitivity
Scenic topographic features (koppies, outcrops etc).	Feature	Within 150m	-	-
Perennial drainage courses, wetlands, water bodies	Within 30m <sup>1</sup>	Within 60m <sup>1</sup>	-	-
Steep slopes	Slopes > 1:4	Slopes > 1:10	-	-
Sites of heritage or cultural value (historical buildings, battle sites, cemeteries etc)	within 100m <sup>2</sup>	within 200m <sup>2</sup>	-	-
Protected Landscapes / Sensitive Receptors				
Nature reserves, game farms, tourist accommodation	within 250m	within 500m	within 1 km	-
Farmsteads outside the site	within 200m	within 400m	within 600m	-
Settlements (towns, villages)	within 200m	within 400m	within 600m	-
Scenic routes	within 250m	within 500m	within 1 km	-
National Roads (non-scenic)	within 100m	within 200m	within 400m	-
Provincial / arterial routes (non-scenic)	within 60m	within 120m	within 200m	-
Main district roads (non-scenic)	within 30m	within 60m	within 100m	-
Passenger rail lines	within 100m	within 250m	within 400m	-

Notes:

<sup>1</sup> To be determined by Freshwater Specialist

<sup>2</sup> To be determined by Heritage Specialist

The visual sensitivity categories indicated in Table 4 below have been colour-coded to reflect the colours used in the visual sensitivity mapping. The categories indicate levels of visual sensitivity before mitigation, which could reduce after mitigation measures have been applied, as shown in Table 5 for each of the charging sites.

*Table 4: Visual Sensitivity Categories*

<b>Very high</b>	Areas of high visual sensitivity, or sensitive visual receptors, which require avoidance measures or stringent mitigation.
<b>High</b>	Areas of high visual sensitivity, or sensitive visual receptors, which could be mitigated with visual buffers and/or screening.
<b>Medium</b>	Areas of moderate visual sensitivity, or sensitive visual receptors, which could be mitigated with visual buffers and/or screening.
<b>Low</b>	Areas of low visual sensitivity with few visual constraints, requiring only minimal mitigation.



Table 5: Summary of Strategic Visual Assessment

## N1 Route

Site No.	Route	Visual characteristics	Visual sensitivity before mitigation	Visual Sensitivity after mitigation
<b>C-N001-01</b> Karoo Padstal	<b>N1</b> Western Cape	Existing Karoo padstal and accommodation. Visually exposed site.	Medium-low	Low
<b>C-N001-02</b> The Barn	<b>N1</b> Free State	Existing guesthouse. Heritage site. Partly screened by trees.	Medium-low	Low
<b>C-N001-03</b> Leeuberg	<b>N1</b> Free State	Existing guesthouse. Visually exposed site	Medium	Medium-low
<b>C-N001-04</b> De Rust	<b>N1</b> Gauteng	Small site (2ha). Close to farmsteads. Visually screened by trees.	Low	Low
<b>C-N001-05</b> Whistling Bridge	<b>N1</b> Western Cape	Existing farmstall. Historic blockhouse heritage site. Partly degraded site.	High	Medium
<b>C-N001-06</b> Winburg	<b>N1</b> Free State	N1 intersection. Site partly screened by gum trees.	Medium-low	Low
<b>C-N001-07</b> Prince Albert Rd	<b>N1</b> Western Cape	Existing truck stop. Close to existing settlement. Visually exposed ridge.	Medium	Medium-low
<b>C-N001-08</b> Berry Farm	<b>N1</b> Free State	N1 intersection. Adjacent to truck stop. Visually exposed site.	Medium	Low
<b>C-N001-09</b> Musina	<b>N1</b> Limpopo	Adjacent to airstrip. Cabins nearby on N1. Dense bushveld vegetation.	Low	Low
<b>C-N001-10</b> Kuifontein	<b>N1</b> Free State	Existing farmstall and guest house. Visually exposed site.	Medium	Medium-low
<b>C-N001-11</b> Grass Valley	<b>N1</b> Limpopo	N1 intersection/toll plaza. Dense bushveld vegetation.	Medium	Low
<b>C-N001-12</b> Bela Bela	<b>N1</b> Limpopo	N1 intersection. Existing farmsteads. Dense bushveld vegetation.	Medium-low	Low
<b>C-N001-13</b> Worcester	<b>N1</b> Western Cape	Truck yard nearby. Visually exposed site.	Medium	Low
<b>C-N001-14</b>	<b>N1</b>	N1-R354 intersection. Matjiesfontein heritage site nearerby. Visually exposed site	Medium-high	Medium



Site No.	Route	Visual characteristics	Visual sensitivity before mitigation	Visual Sensitivity after mitigation
Matjiesfontein	Western Cape			
<b>C-N001-15</b> Orange R. Lodge	<b>N1</b> Northern Cape	Existing lodge nearby. Visually exposed site.	<b>Medium</b>	<b>Medium-low</b>
<b>C-N001-16</b> Murray Hill Road	<b>N1</b> Gauteng	Surrounded by smallholdings/farmsteads. Visually exposed site	<b>High</b>	<b>Medium</b>

### N2 Route

<b>C-N002-01</b> Dassiesfontein	<b>N2</b> Western Cape	Existing farmstall and restaurant. Partly screened by existing trees.	<b>Medium-low</b>	<b>Low</b>
<b>C-N002-02</b> Stilbaai Junction	<b>N2</b> Western Cape	Adjacent Schoongelegen farmstead. Visually exposed site.	<b>Medium-high</b>	<b>Medium-low</b>
<b>C-N002-03</b> Hokaai Padstal	<b>N2</b> Western Cape	Existing farmstall. Partly screened by existing trees.	<b>Low</b>	<b>Low</b>
<b>C-N002-04</b> Shabby Fufu	<b>N2</b> Western Cape	Existing farmstall. Partly screened by existing trees. Surrounding smallholdings.	<b>High</b>	<b>Medium</b>
<b>C-N002-05</b> Klein-Brakrivier	<b>N2</b> Western Cape	N2-R102 intersection. Small site (6ha). Close to residential settlement.	<b>Medium-high</b>	<b>Medium</b>
<b>C-N002-06</b> Wolf Sanctuary	<b>N2</b> Eastern Cape	Small site (1ha) between N2 and R102. Farmsteads and guest houses nearby.	<b>Medium-high</b>	<b>Medium</b>
<b>C-N002-07</b> St Albans	<b>N2</b> Eastern Cape	N2 intersection. Adjacent smallholdings. partly screened by alien vegetation.	<b>Medium-low</b>	<b>Low</b>
<b>C-N002-09</b> Piet Retief	<b>N2</b> Mpumalanga	Adjacent to a truck stop. Settlements and lodges nearby. Partly screened by trees.	<b>Medium-high</b>	<b>Medium-low</b>
<b>C-N002-11</b> Hluhluwe	<b>N2</b> Kwazulu-Natal	Nearby farmsteads and lodges. Visual screening by forest trees.	<b>Low</b>	<b>Low</b>
<b>C-N002-12</b> Harding	<b>N2</b> Kwazulu-Natal	N2 intersection. Adjacent guesthouse. Visually screened by exotic trees.	<b>Low</b>	<b>Low</b>
<b>C-N002-13</b> Kokstad NC	<b>N2</b> Kwazulu-Natal	Lodge nearby. Visually exposed and sloping site.	<b>Medium</b>	<b>Medium-low</b>



<b>C-N002-14</b> Kokstad SB	<b>N2</b> Kwazulu-Natal	Adjacent farmstead. Visually exposed site. Partly screened by gum trees.	<b>Medium</b>	<b>Low</b>
<b>C-N002-15</b> Swellendam	<b>N2</b> Western Cape	Kluitjieskraal farmstead / health spa nearby. Visually exposed site.	<b>Medium-high</b>	<b>Medium-low</b>
<b>C-N002-16</b> George Elvis Brew	<b>N2</b> Western Cape	N2-R404 intersection. Adjacent to airport. Visually exposed, partly screened by trees.	<b>Medium</b>	<b>Low</b>
<b>C-N002-17</b> Coombs	<b>N2</b> Eastern Cape	Heritage sites nearby. Existing low trees provide visual screening.	<b>Low</b>	<b>Low</b>

### N3 Route

<b>C-N003-01</b> Kopleegte	<b>N3</b> KwaZulu-Natal	N3 intersection. Small site (1ha). Visually exposed grassland site.	<b>Low</b>	<b>Low</b>
<b>C-N003-02</b> Sasol Kohler	<b>N3</b> Free State	N3 intersection. Small site (1ha). Visually exposed grassland site.	<b>Low</b>	<b>Low</b>
<b>C-N003-03</b> R34 Erfhoek	<b>N3</b> Free State	Area disturbed by diggings. Visually exposed grassland site.	<b>Medium-low</b>	<b>Low</b>
<b>C-N003-05</b> Harrismith	<b>N3</b> Free State	Platberg Private Nature Reserve. Guest house / farmsteads nearby. Visually exposed cropland site.	<b>Medium</b>	<b>Low</b>

### N4 Route

<b>C-N004-01</b> Orchid Farmstall	<b>N4</b> Mpumalanga	Existing farmstall and orchards. Partly screened by road embankment and trees.	<b>Medium-low</b>	<b>Low</b>
<b>C-N004-02</b> Marikana	<b>N4</b> North West	Bapong Royal Palace and Magaliesberg PNE to the south. Site partly screened by trees.	<b>Medium</b>	<b>Low</b>
<b>C-N004-03</b> Vaalbank	<b>N4</b> Gauteng	Surrounded by farmsteads. Visually exposed site.	<b>Medium-high</b>	<b>Medium-low</b>
<b>C-N004-04</b> Stonechat	<b>N4</b> Mpumalanga	Existing farmstall. Country Lodge to the south. Site partly screened road embankment and existing trees.	<b>Medium-low</b>	<b>Low</b>
<b>C-N004-05</b> Strathmore Malel	<b>N4</b> Mpumalanga	Kruger National Park to the north. Farmsteads nearby. Site partly screened by trees.	<b>Medium-high</b>	<b>Medium-low</b>

### N5 Route



<b>C-N005-01</b> Liddell Bethlehem	<b>N5</b> Free State	Farmsteads nearby. Visually exposed cropland site.	<b>Medium-high</b>	<b>Medium</b>
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### N6 Route

<b>C-N006-01</b> Komani Q'town	<b>N6</b> Eastern Cape	Farmsteads to north-west of the site. Partly screened by existing vegetation.	<b>Medium</b>	<b>Low</b>
<b>C-N006-02</b> Wagon Wheel	<b>N6</b> Eastern Cape	Existing farmstall. Farmsteads to east of the site. Visual screening by existing forest trees.	<b>Medium</b>	<b>Low</b>
<b>C-N006-03</b> Aliwal North	<b>N6</b> Eastern Cape	Irrigated cropland from Orange River. Visually exposed site.	<b>Medium</b>	<b>Low</b>
<b>C-N006-04</b> Reddersburg	<b>N6</b> Free State	Residential area and farmstead nearby. Visually exposed site.	<b>High</b>	<b>Medium</b>
<b>C-N006-05</b> Sterkstroom	<b>N2</b> Eastern Cape	N6-R344 intersection. Visually exposed site on rising ground.	<b>Medium</b>	<b>Medium-low</b>

### N7 Route

<b>C-N007-04</b> A. Vanrynsdorp	<b>N7</b> Western Cape	Featureless, visually exposed site. Roadside picnic site.	<b>Medium</b>	<b>Low</b>
<b>C-N007-05</b> Z. Vanrynsdorp	<b>N7</b> Western Cape	Semi-arid expansive Knersvlakte. Featureless, visually exposed site.	<b>Medium</b>	<b>Low</b>
<b>C-N007-06</b> R362 Groenhoek	<b>N7</b> Western Cape	Irrigated land along Olifants River. Numerous surrounding farmsteads. Visually exposed site.	<b>High</b>	<b>Medium</b>
<b>C-N007-07</b> Piketberg	<b>N7</b> Western Cape	Piketberg intersection. Existing Eskom powerline. Cement factory to the south. Residential area 300m to the north.	<b>Medium-high</b>	<b>Medium</b>
<b>C-N007-08</b> Atlantis Junction	<b>N7</b> Western Cape	Kalbaskraal Nature Reserve 250m to northeast. Smallholdings to the southwest. Visually exposed site	<b>Medium</b>	<b>Low</b>
<b>C-N007-09</b> S. Kamiesberg	<b>N5</b> Northern Cape	Intersection with road to Hondeklipbaai. Semi-arid visually exposed site.	<b>Medium</b>	<b>Low</b>
<b>C-N007-12</b> Tierkloof Afdraai	<b>N7</b> Western Cape	Olifants River to the east of N7. Semi-arid visually exposed sloping site.	<b>Medium</b>	<b>Low</b>
<b>C-N007-13</b> Vioolsdrif	<b>N7</b> Northern Cape	Farmsteads / irrigated land on northern boundary. Arid, visually exposed ridge. Some screening with existing trees.	<b>High</b>	<b>Medium</b>



<b>C-N007-14</b> Springbok	<b>N7</b> Northern Cape	Existing tourist accommodation. Semi-arid visually exposed site.	<b>Medium</b>	<b>Low</b>
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## N8 and N9 Routes

<b>C-N008-01</b> Knapgedaan	<b>N8</b> Free State	Small site (6ha). Smallholdings to the east. Guest accommodation in the area. Visually exposed grassland site.	<b>Medium</b>	<b>Low</b>
<b>C-N008-02</b> Three Fountains	<b>N8</b> Free State	Site slopes to the south. Visually exposed grassland site.	<b>Medium</b>	<b>Low</b>
<b>C-N008-03</b> Campbell	<b>N8</b> Northern Cape	Adjacent to Campbell settlement and mission station heritage site. Visually exposed site, screened by isolated trees.	<b>High</b>	<b>Medium-high</b>
<b>C-N008-04</b> Felidae Centre	<b>N8</b> Free State	Large pan to the south. Visually exposed grassland site.	<b>Medium</b>	<b>Low</b>
<b>C-N009-01</b> Jagpoort Padstal	<b>N9</b> Eastern Cape	Existing farmstall. Mountain Zebra-Camdeboo PNE. Visually exposed grassland with prominent slopes.	<b>Medium</b>	<b>Medium-low</b>
<b>C-N009-09</b> Aberdeen	<b>N9</b> Eastern Cape	Existing farmstall. Small sites (2ha and 10ha). Adjacent to residential area. Visually exposed grassland site.	<b>High</b>	<b>Medium</b>

## N10 Route

<b>C-N010-01</b> Britstown	<b>N10</b> Northern Cape	Intersection of N10 and N12. Visually exposed grassland site.	<b>Medium</b>	<b>Low</b>
<b>C-N010-02</b> Hanover	<b>N10</b> Northern Cape	Visually exposed grassland site. Screened from the town (Hanover) by low koppies.	<b>Medium</b>	<b>Low</b>
<b>C-N010-03</b> Kalbas Padstal	<b>N10</b> Northern Cape	Existing farmstall. Small site (1ha). Irrigated land along Orange River to the east. Visually exposed grassland site.	<b>Low</b>	<b>Low</b>
<b>C-N010-05</b> Redlands Prieska	<b>N10</b> Northern Cape	Redlands railway siding to the northwest. Visually exposed scrubland site.	<b>Medium-low</b>	<b>Low</b>
<b>C-N010-06</b> Sherborne	<b>N10</b> Eastern Cape	Existing guest house and settlement. Old rail line to the east. Visually exposed grassland site.	<b>Medium</b>	<b>Low</b>
<b>C-N0010-07</b> Daggaboer	<b>N10</b> Eastern Cape	Existing farmstall. Site mainly screened by existing trees and farmstall.	<b>Low</b>	<b>Low</b>

## N11 Route

<b>C-N011-01</b> Fort Mistake	<b>N11</b> KwaZulu-Natal	Nearby farmsteads along the Nkunzi River. Scenic mountain area. Visually exposed sloping grassland site.	<b>Medium-high</b>	<b>Medium</b>
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<b>C-N011-02</b> Ermelo Aucamp	<b>N11</b> Mpumalanga	Existing N11 truck stop at intersection. Open cast mines nearby. Visually exposed site partly transformed.	<b>Low</b>	<b>Low</b>
<b>C-N011-03</b> Biekie Padstal	<b>N11</b> Limpopo	Existing farmstall. Site screened by existing bushveld trees.	<b>Low</b>	<b>Low</b>
<b>C-N011-04</b> Loskop Padstal	<b>N11</b> Limpopo	On the boundary of Loskop Dam Nature Reserve. Visually exposed site, partly transformed.	<b>Medium-high</b>	<b>Medium-low</b>
<b>C-N011-05</b> Volksrust	<b>N11</b> Mpumalanga	Open grassland sloping site. Partly screened by road embankment and gum trees.	<b>Medium</b>	<b>Low</b>
<b>C-N0011-06</b> Elandslaagte	<b>N11</b> KwaZulu-Natal	Low rocky ridge with aloes. Partly screened by low ridge and existing trees. Visually exposed grassland on eastern part.	<b>Medium</b>	<b>Low</b>

### N12 Route

<b>C-N012-01</b> Wolmaransstad	<b>N12</b> Northern Cape	Adjacent to two farmsteads to the south. Visually exposed grassland, partly screened by trees.	<b>Medium</b>	<b>Low</b>
<b>C-N012-02</b> R374 Windsorten	<b>N12</b> North-West	South of Christiana. Nearby farmstead. Visually exposed grassland, mainly screened by trees.	<b>Medium-low</b>	<b>Low</b>
<b>C-N012-03</b> Potchefstroom	<b>N12</b> North-West	Combination of smallholdings and semi-industrial. Site partly screened by buildings and trees.	<b>Medium-low</b>	<b>Low</b>
<b>C-N012-04</b> Potchefstroom GW	<b>N12</b> North-West	Site straddles district road. Nearby farmsteads. Visually exposed grassland with scattered trees.	<b>Medium</b>	<b>Low</b>
<b>C-N0012-05</b> Christiana	<b>N12</b> North-West	Remote location. Visually exposed grassland with scattered trees.	<b>Medium</b>	<b>Low</b>

### N14 Route

<b>C-N014-01</b> Biekiesvlei	<b>N14</b> North-West	Existing Biekiesvlei Guesthouse. Small settlement of Biesiesvlei smallholdings. Site mainly screened by houses and trees.	<b>Medium-low</b>	<b>Low</b>
<b>C-N014-02</b> Ventersdorp	<b>N14</b> North-West	Large site (31ha) east of Coligny. Existing farmstead to the west. Visually exposed cultivated site.	<b>Medium</b>	<b>Medium-low</b>
<b>C-N014-04</b> Buitehof	<b>N14</b> North-West	Existing Buitehof guesthouse east of Lichtenburg on R52. Farmsteads nearby. Visually exposed cultivated site.	<b>Medium</b>	<b>Medium-low</b>
<b>C-N014-05</b> Olifantshoek	<b>N14</b> Northern Cape	'The Ranch' chalets existing. Farmsteads nearby. Site partly screened by low vegetation.	<b>Medium-low</b>	<b>Low</b>



<b>C-N0014-06</b> Pauwkoop	<b>N14</b> North-West	South of Delareyville. Visually exposed cultivated maize field. Partly screened by low vegetation. Powerline in foreground.	<b>Medium</b>	<b>Low</b>
<b>C-N014-07</b> R505 Ga Maloka	<b>N14</b> North-West	West of Coligny on N14 and R505. Rural settlement. Next to church. Visually exposed site partly screened by trees.	<b>Medium</b>	<b>Medium-low</b>
<b>C-N014-08</b> Akkerboom	<b>N14</b> Northern Cape	Existing Akkerboom farmstall east of Kakamas on the Orange River. Visually exposed grassland, partly screened by low thorn trees.	<b>Medium</b>	<b>Low</b>
<b>C-N0014-09</b> Upington	<b>N14</b> Northern Cape	Track adjacent to the site. Visually exposed grassland and scrub.	<b>Medium</b>	<b>Low</b>
<b>C-N014-10</b> Pofadder	<b>N14</b> Northern Cape	Smaller site (8ha). Visually exposed sparse grassland and scrub.	<b>Medium</b>	<b>Low</b>
<b>C-N0014-11</b> Vryburg	<b>N14</b> North-West	Existing guesthouse. Numerous homesteads nearby. Visually exposed grassland, partly screened by trees.	<b>Medium-high</b>	<b>Medium-low</b>

### N17 and N18 Routes

<b>C-N017-01</b> Ermelo Beukes	<b>N17</b> Mpumalanga	Site straddles N17. Existing rail line on boundary. Private nature reserve nearby. Visually exposed grassland partly screened by gum trees.	<b>Medium-high</b>	<b>Medium-low</b>
<b>C-N018-01</b> Mahikeng	<b>N18</b> North-West	Disanang rural settlement west of Mahikeng. Visually exposed grassland partly screened by thorn trees.	<b>Low</b>	<b>Low</b>
<b>C-N018-02</b> Stella	<b>N18</b> North-West	Soutpan salt works nearby. Visually exposed cultivated site, partly screened by trees.	<b>Medium</b>	<b>Low</b>

### Provincial 'R' Routes

<b>C-R027-01</b> Brandvlei	<b>R27</b> Northern Cape	Remote and semi-arid, low scrub vegetation, partly disturbed.	<b>Medium-low</b>	<b>Low</b>
<b>C-R027-02</b> Calvinia	<b>R27</b> Northern Cape	Semi-arid with low scrub vegetation. Remote, visually exposed wilderness landscape.	<b>Medium</b>	<b>Medium-low</b>
<b>C-R033-02</b> Albert Falls	<b>R33</b> KwaZulu-Natal	North of Pietermaritzburg near Albert Falls Dam. Partly visually exposed field, and partly screened by woodland thicket.	<b>Medium</b>	<b>Medium-low</b>
<b>C-R046-01</b> Fynbos Padstal	<b>R46</b> Western Cape	Scenic mountain area. North of Wolseley. Existing farmstall and guesthouse. Visually exposed Renosterveld. Partly screened by farmstall and pine trees.	<b>Medium</b>	<b>medium-low</b>
<b>C-R046-02</b> Nuweplaas	<b>R46</b> Western Cape	West of Riebeek-Kasteel. Existing farmstall on district road. Visually exposed cropland.	<b>Medium</b>	<b>Medium-low</b>



<b>C-R056-01</b> Elliot (Khowa)	<b>R56</b> Eastern Cape	Steep slope on western portion. Cultivated, contoured cropland on eastern portion. Visually exposed site.	<b>Medium</b>	<b>Medium-low</b>
<b>C-R060-01</b> La Berg Stud	<b>R60</b> Western Cape	West of Swellendam. Lower portion visually exposed cropland. Upper portion partly screened by gums.	<b>Medium</b>	<b>Medium-low</b>
<b>C-R075-01</b> Jansenville	<b>R75</b> Eastern Cape	Farm covered with aloes, scrub and trees. Visually exposed site, partly screened by low trees.	<b>Medium</b>	<b>Medium-low</b>
<b>C-R716-01</b> Denysville	<b>R716</b> Free State	Existing equestrian centre. Powerlines along route. Farmsteads in the area. Visually exposed, treeless grassland.	<b>Medium</b>	<b>Medium-low</b>

## 4. Cumulative Visual Impacts

There would be no cumulative visual impacts for the project, seen as a whole, as the charging stations and related solar facilities would be in the region of 150km apart. The only cumulative visual impacts would be where existing similar solar facilities or other energy infrastructure occur near the individual sites.

Some cumulative visual clutter could be experienced where infrastructure, such as service stations, existing powerlines and cell phone masts, are present in the surroundings. On the other hand, these facilities, together with the increase in the use of solar energy panels, are becoming more common as part of the landscape, and attract less visual attention over time.

A major benefit of the cellular design of the proposed solar facilities is that they not only provide localised energy in rural areas, but avoid the need for a plethora of linking powerlines to the main Eskom grid.

## 5. Regulatory Process

The current SEA is for the project as a whole, and if authorisation is forthcoming, then the approval of individual sites should generally be streamlined by individual municipalities.

The Guideline for Involving Visual and Aesthetic Specialists in EIA Processes (Oberholzer, 2005), could be used by municipalities in the assessment of individual sites. Section 8.6 of the Guideline indicates the level of visual assessment required depending on the expected visual impact. For example, where little or no visual impact is expected, only a Level 1 brief comment by a suitably experienced specialist would be required. The levels of visual sensitivity indicated in Table 5 above could be used as a guide.



## 6. Summary of Findings and Recommendations

The Summary Table 5, provided above, indicates the potential visual sensitivity for each site both before and after mitigation. Preliminary findings indicate that a few of the sites on the various routes have 'low' visual sensitivity, requiring little or no mitigation, most have 'medium' visual sensitivity and can be fairly easily mitigated, while a few have 'high' visual sensitivity, mainly because they are adjacent to residential or heritage areas, and would need more stringent mitigation measures. (See also more detailed descriptions and Google Earth street views of the proposed sites in **Addendum A**.)

In terms of the project as a whole, no fatal flaws were identified, and the project is considered acceptable from a visual perspective provided visual mitigations are implemented.

General recommendations include the following to assist with the mitigation of the project:

- The footprint of the solar facilities should be kept as compact as possible to minimise the sprawl of buildings and related infrastructure.
- Degraded or disturbed sites should be used as far as possible, to minimise intrusion into scenic or pristine areas.
- Tree-planting, mounding, hedges or fencing with creepers should be used to reduce visibility of solar energy infrastructure.
- Lighting at night should generally be kept to a minimum, particularly in wilderness and rural areas, and light sources shielded from view with reflectors.
- Outdoor signage should be kept to a minimum, and where signage is required this should be discrete and located against a background to avoid silhouette effects. Billboard-type signs should not be permitted on major routes.

## 7. References

Oberholzer, B. 2005. Guideline for Involving Visual and Aesthetic Specialists in EIA processes: Edition 1. CSIR Report no. ENV-S-C 2005 053 F. Provincial Government of the Western Cape, Department of Environmental Affairs and Development Planning, Cape Town.



The Strategic Visual Assessment was prepared by the following:

Quinton Lawson, Architect,  
8 Blackwood Drive, Hout Bay 7806  
Email: quinton@openmail.co.za

Bernard Oberholzer, Landscape Architect  
PO Box 471, Stanford, Western Cape, 7210  
Email: bernard.bola@gmail.com

### *Expertise*

Quinton Lawson has a Bachelor of Architecture Degree (Natal) and has more than 20 years of experience in visual assessments, specializing in 3D modelling and visual simulations. He has previously lectured on visual simulation techniques in the Master of Landscape Architecture Programme at UCT.

Bernard Oberholzer has a Bachelor of Architecture (UCT) and Master of Landscape Architecture (U. of Pennsylvania), and has more than 25 years of experience in visual assessments. He has presented papers on Visual and Aesthetic Assessment Techniques, and is the author of Guideline for Involving Visual and Aesthetic Specialists in EIA Processes, prepared for the Dept. of Environmental Affairs and Development Planning, Provincial Government of the Western Cape.

The authors have both been involved in visual assessments for a wide range of residential, industrial and renewable energy projects. They prepared the 'Landscape/Visual Assessment' chapter in the report for the *National Wind and Solar PV Strategic Environmental Assessment (SEA)*, as well as the *National Electricity Grid Infrastructure SEA* in association with the CSIR, for the Department of Environmental Affairs in 2014-2015.

### *Declaration*

The authors declare that they are independent practitioners with expertise and wide experience in visual impact assessments, that the assessment has been carried out in an objective manner and complies with the relevant EIA regulations, and that all material information in their possession, which may influence a decision by the competent authority and the objectivity of the assessment, has been disclosed.

Quinton Lawson, Architect  
SACAP Reg. no. 3686

Bernard Oberholzer, Landscape Architect  
SACLAP Reg. no. 87018



Separate Documents:

**Addendum A:** Description of Individual Sites, Mitigation Measures and Visual Sensitivity.

**Addendum B:** Visual Features and Visual Sensitivity Mapping for Individual Sites.