



SMEC INTERNAL REF. JT0064

Struisbult Photovoltaic (PV) 2

Traffic Management Plan (TMP)

Client Reference No. [N/A]

Prepared for Environmental Impact Management Services (EIMS)

11 March 2022

Document Control

Document	Traffic Management Plan (TMP)
File Location	Z:\Projects\JT0064 Struisbult PV 2\3_Working\3-4_DivT\Reports\TMP
Project Name	Struisbult Photovoltaic (PV) 2
Project Number	JT0064
Revision Number	0

Revision History

Revision No.	Date	Prepared By	Reviewed By	Approved for Issue By
0	11/03/2022	M Mthethwa & N Miya	N Miya / M Jablonski	N Miya Pr Tech Eng

Issue Register

Distribution List	Date Issued	Number of Copies
Environmental Impact Management Services (EIMS)	11/03/2022	1

SMEC Company Details

Approved by	Naye Miya		
Address	267 Kent Avenue		
	Ferndale, Randburg		
	Johannesburg	South Africa	2194
Telephone	011 369 0600	Website	www.smec.com
Email	Naye.miya@smec.com		
Signature			

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Table of Contents

1	Introduction.....	4
1.1	Background.....	4
1.2	Purpose of the Plan.....	4
2	Struisbult PV2 Particulars	5
2.1	Overview.....	5
2.2	Site Access.....	5
2.3	Suitability.....	5
2.4	Sight Distances and Potential Hazards.....	6
3	Management Plan.....	7
3.1	Maintenance.....	7
3.2	Notification of Accidents.....	7
3.3	Site Access.....	7
3.4	Pedestrians	7
3.5	Seatbelts and Cellphones	7
3.6	Abnormal Loads Delivery	8
3.6.1	Permit.....	8
3.6.2	Routes	8
3.6.3	Time.....	8
3.7	Traffic Control Safety	9
3.7.1	Operating License	9
3.7.2	Safety during Construction.....	9
3.7.3	Temporal Road Signs.....	9
3.7.4	Flagmen	9
3.7.5	Speed Limit.....	9
3.8	Parking.....	10
3.9	Loading and Overloading	10
3.10	Access to Hazardous and Restricted Areas.....	10
3.11	Emergency Responses and Reporting of Hazards.....	10

Appendices

Appendix A Road Traffic Signs

Appendix B TMP Summary

List of Figures

Figure 1-1: Locality Plan.....	4
Figure 2-1: Site Access and Location	5
Figure 2-2: Horizontal Alignment (Source Google Earth)	6
Figure 3-1: Delivery Route.....	8

1 Introduction

1.1 Background

SMEC South Africa (SMEC) was appointed by Environmental Impact Management Services (Pty) Ltd (EIMS) to provide traffic engineering services during the undertaking of the Traffic Management Plan (TMP) for the Struisbult Photovoltaic (PV) Wind Energy Plant. The PV2 plant is located approximately 2.5 km south of Copperton in the Northern Cape. The site is located on the north side of R357 and currently gains access from Copperton / Alkantpan Road (See Figure 1-1).

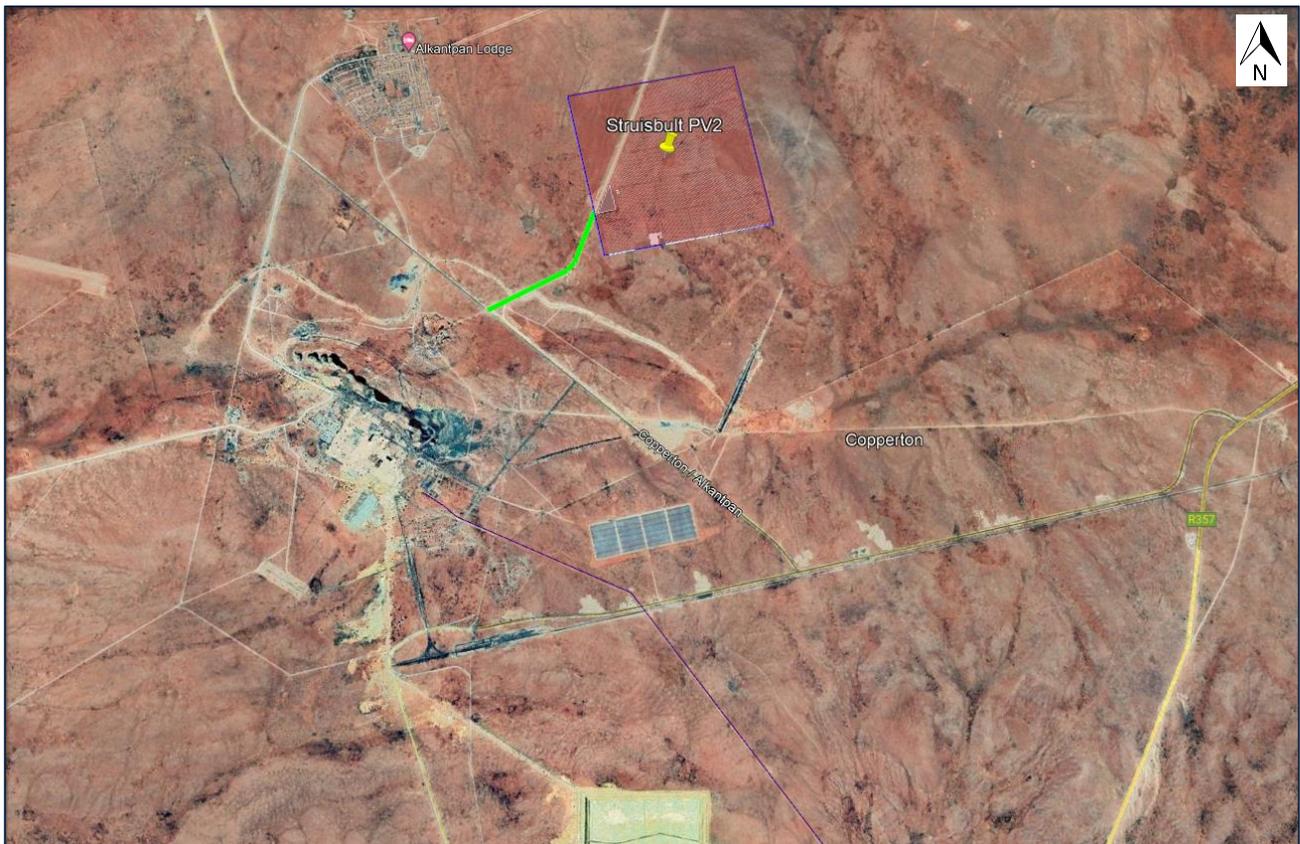


Figure 1-1: Locality Plan

EIMS was requested by Mulilo Renewable Energy (Pty) Ltd to assist with undertaking an update of the Struisbult PV2 Environmental Management Programme (EMP). This Traffic Management Plan will form part of the updated EMP. It is our understanding that the PV plant is currently operational and as such, this plan focuses more on the safety operations around the plant accesses, safety during any construction and safety around delivery and use of abnormal vehicles than on capacity as the existing transport network.

1.2 Purpose of the Plan

The purpose of this TMP is to ensure that no hazards would result from the increased traffic due to operations or periodical construction and to ensure that minimal to no impact is maintained on normal traffic flow. The operational aspect deals with the impact the management of vehicles (delivery and otherwise) and equipment would have on local commuters and business operations in areas in close proximities to the Struisbult PV2 Energy Plant site. This TMP is applicable in conjunction with the following acts:

- Occupational Health and Safety Act, Act No 85 of 1993; and
- National Road Traffic Act, Act No 93 of 1996.

2 Struisbult PV2 Particulars

2.1 Overview

The Wind energy facility is located within Farm No. 104 Portion 1 also known as Vogelstruisbult near Copperton in the Northern Cape. The Wind plant is designed to generate power in the region of 100 – 300 MW. It is our understanding that the plant is currently operational and therefore connected to the general power grid through a provided 132Kv line.

2.2 Site Access

Struisbult PV2 Wind energy facility site is currently accessible along Copperton / Alkantpan Road. The site access forms a T-junction and is priority controlled. The site leg forms a minor leg on the east approach and is currently unpaved. Figure 2-1 depicts the access layout and location.

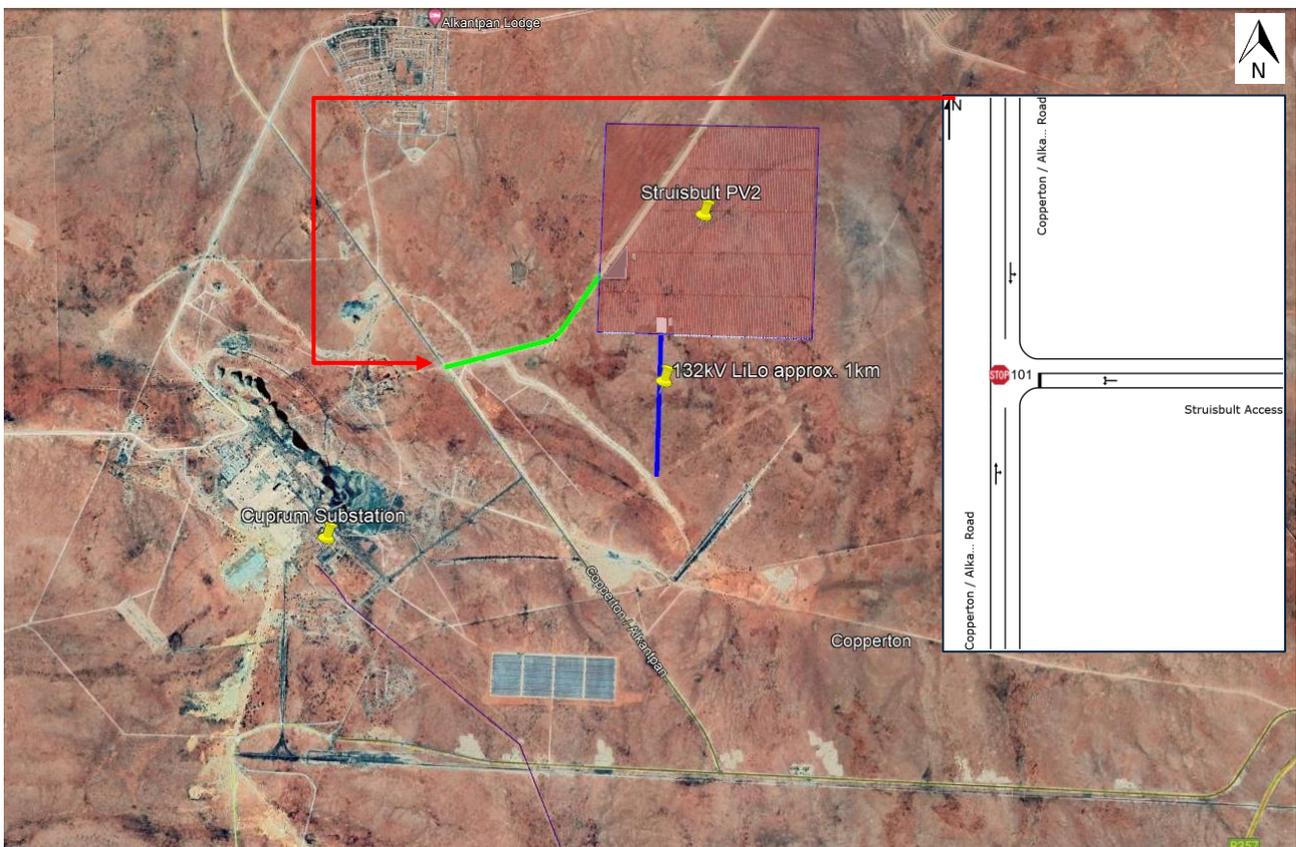


Figure 2-1: Site Access and Location

Copperton / Alkantpan Road connects the power plant to R357 located approximately 9 km south of the site (following the road alignment). Road R357 is a class 3 road traversing east west of the wind energy plant. It provides connection for the energy plant to major towns both inland and coastal.

2.3 Suitability

The current access is served by a single lane in and a single lane out. It is suitable for use by all forms of vehicles including cars, buses and trucks (heavy and light). Based on the observations made, the traffic on the main road (Copperton / Alkantpan Road) is low and therefore an exclusive right turn lane on the south approach is not warranted. The likelihood of the right turning traffic impeding through traffic during peak periods is minimal. There are no changes recommended to the current access given the above.

2.4 Sight Distances and Potential Hazards

The Struisbult PV2 Energy Plant access is located on a fairly flat land with no physical features (both naturally and man-made) impairing visibility for drivers leaving the site. The horizontal sight distance from the north and south approaches along Copperton / Alkantpan Road is excellent. Copperton / Alkantpan Road presents a straight alignment for at least 2km in both directions from the centreline of the access. The vertical alignment is excellent as shown in Figure 2-2.



Figure 2-2: Horizontal Alignment (Source Google Earth)

Based on the above, the access layout and location presents no hazards to the commuting public and to the Struisbult PV 2 energy plant daily transport operations.

3 Management Plan

The Traffic Management Plan aims to ensure that hazards resulting from increased traffic including truck traffic are avoided and minimised. The increased traffic could be as a result of operations or temporal construction, however the impact on daily local commuters should be minimised. The measures outlined below aim to minimise the hazard or impact for local commuters and the operational staff operating the PV energy plant.

3.1 Maintenance

All vehicles and machinery used for either construction or operational purposes shall be regularly maintained and repaired by an appropriately qualified professional mechanic for a period not exceeding six months. Regular checks by the person responsible for the site (operational manager or contractor) should be undertaken in order to ensure compliance.

Gravel roads in case of access roads for the Struisbult PV2 Energy plant shall be sprayed with water in order to limit dust where possible. If the use of water is deemed unsafe or economically unviable, other dust suppressants must be used.

3.2 Notification of Accidents

All incidents (minor or major) shall be reported to the Health and Safety department within 24 hours. All parties or individuals involved shall partake in a drug and alcohol test. Damage to the vehicles including any injuries shall be reported to respective supervisors.

3.3 Site Access

Access to site is reserved. The access is currently controlled and will continue to be controlled by personnel appointed by the operating company (Mulilo Renewable Energy (Pty) Ltd). The operating company reserves a right to appoint security personnel or entity that will control access including the implementation of daily safety procedures such as drug and alcohol testing procedures. The posted signs for the access should be clear and should be visible from all approaches.

3.4 Pedestrians

No pedestrians were spotted during the site visit on 08 March 2022. It is assumed that employees accessing the site via public transport are picked up and dropped off inside the premises of the PV2 Energy Plant. In light of this, this TMP states that no employees shall be transported on the back of open bakkies and trucks. The designated safety officer should ensure that this requirement is adhered to.

Assembly points for passengers within the premises and away from Copperton / Alkantpan Road shall be located a safe distance from routes of high traffic including routes heavily used by construction traffic. Appropriate pedestrian routes shall be demarcated where appropriate.

3.5 Seatbelts and Cellphones

Seatbelts should be worn by drivers and passengers at all times in a moving vehicle in and out of site. This is applicable to all drivers irrespective of ownership of the supposed vehicle. Use of cell phones whilst driving should be prohibited regardless of whether a hands free kit is used.

3.6 Abnormal Loads Delivery

3.6.1 Permit

The contractor shall be responsible for obtaining abnormal load permits from relevant authorities. The National Road Traffic Act No. 93 of 1996 states describes the vehicles permissible to travel on public roads based on prescribed dimensions and mass. Vehicles exceeding the prescribed requirements are described as abnormal (abnormal loads) and therefore should apply for exemption in terms of Section 81 of the NRTA.

3.6.2 Routes

The main delivery route (hauling route) for equipment suppliers for the Struisbult PV2 Energy Plant is expected to be mainly along the R357 Road as shown in Figure 3-1.



Figure 3-1: Delivery Route

The main source of construction suppliers including abnormal loads is expected to be Cape Town and Coega in Gqeberha. These destinations can easily be reached from site using the R357 Road as a connecting route. The site and the hauling route are both located south of the Copperton Town. This will allow the delivery of materials using heavy vehicles to avoid densely populated areas including schools, retail and commercial operations. In an effort to minimise hazards by heavy vehicles intended for the Struisbult PV2 Energy Plant, delivery of heavy materials should be limited to the route outlined above. No deviation from this route must be allowed by the operator and contractor. In the case of unavoidable delays due to transport requirements for the site, the operator through the contractor must coordinate directly with the relevant road authority on the events that might lead to delays and the planned response.

3.6.3 Time

The movement of construction vehicles and heavy delivery vehicles shall not be undertaken during the AM (05:00 – 09:00) and PM (15:00 – 18:00) peak periods. This is aimed at minimising the impact on daily commuters for local residents and business operations.

3.7 Traffic Control Safety

3.7.1 Operating License

Only individuals with valid vehicle operating licences may operate any vehicle or mobile equipment. In case of permits, only permits issued and authorised by the site operations manager may be recognised for operations within the site. The operator shall ensure the following:

- All project vehicles comply with relevant traffic and transport licencing requirements including licensing requirements relating to the transportation of over-sized loads or hazardous material and waste;
- All drivers of vehicles used during the project shall have the requisite licenses to operate any vehicle, machinery operated by them on site or on any public roads; and
- All vehicles related to the project shall have valid roadworthy certificates and licences.

3.7.2 Safety during Construction

In order to improve personal safety, any personnel working on the roadway shall wear appropriate safety clothing that meets the project requirements. This shall be in a form of reflective vests. No work should be undertaken without a risk assessment in place clearly identifying potential risks associated with the works and appropriate mitigation measures against the potential risk.

A proper detour route should be designed by properly qualified professional for major construction events that might affect traffic flow across the public roads. The detour route plan should be provided in a form of diagram (drawing) clearly directing traffic around the work zone. The detour plan should be submitted and approved by the relevant road authority.

3.7.3 Temporal Road Signs

All temporary signage that is used to control traffic through and around the work zone should conform to the specifications of shape, colour, reflectivity, message and size as set out in South African Road Traffic Signs Manual (SARTSM) as shown in Appendix A. The provided temporal signs should be in accordance with the SABS 1519 specifications. The placing and the mounting of temporal road signs for construction purposes should be conducted according to specifications outlined in the South African Road Traffic Signs Manual Vol 2, March 2015.

3.7.4 Flagmen

The traffic around the site is low and therefore the use of flagmen during construction is deemed appropriate. The flagmen should be stationed as specified in the South African Road Traffic Signs Manual Vol 2, March 2015. The flagmen on duty should wear distinctive choice of clothing making them easily visible to the public and road users. The flagmen should be properly trained and vetted prior to being appointed for the task.

3.7.5 Speed Limit

All speeds applicable to public roads shall be strictly adhered to by all drivers operating vehicles including employees and operators of Struisbult PV2 Energy Plant. There were no posted speeds observed during the site visit along Copperton / Alkantpan Road. Relevant road authority should be informed in order to improve signage along this public road. The following maximum speeds shall be permitted for vehicles driving on site:

- Light Vehicles (passenger cars, taxis, bikes etc) – 30 km/h; and
- Other vehicles including construction vehicles – 20 km/h.

The placing and the mounting of road signs should be conducted according to specifications outlined in the South African Road Traffic Signs Manual Vol 2, March 2015.

3.8 Parking

Parking along Copperton / Alkantpan Road adjacent the PV2 Energy Plant shall be prohibited at all times. Designated parking areas within the site shall not be used as storage areas. The site is fairly flat with cases of cars rolling onto other vehicles and objects are not expected. The provision of parking should be to the specification of the local authority but shall be cognisant of heavy vehicles. The parking layouts shall accommodate heavy trucks waiting to pick or drop off deliveries.

In addition, when heavy vehicles are parked or in stopped in queues on the site they should make use of stop blocks at the wheels.

3.9 Loading and Overloading

All vehicles including passengers and trucks shall be loaded according to specifications and weight allowed for in their respective permits. The height coverage should be adhered to at all times. The loading and unloading shall be undertaken at designated areas approved by the site manager.

3.10 Access to Hazardous and Restricted Areas

Access to restricted areas shall be limited to persons appropriately inducted to the site as per the site access procedure. The Health and Safety officer shall keep and maintain records of all inducted persons in order to ensure safety of all person's accessing restricted areas. Restricted areas shall be clearly demarcated.

3.11 Emergency Responses and Reporting of Hazards

In the event that any hazard including traffic hazard is identified on site by any person, such hazard shall immediately be reported to the site manager or safety officer. The safety officer and site manager shall take the appropriate measures to avoid an incident or accident from occurring. All persons including the safety officer dealing with hazardous material will be required to undertake first aid training. Vehicles shall carry first aid supplies which should be adequate to cater for the number of passengers on board. All incidents occurring on site, the onsite emergency procedure shall be followed. Incidents occurring off site shall immediately be reported to the relevant emergency authorities.

4 Conclusions

A summary of the Traffic Management Plan is summarised in Appendix B. The summary provides an overview of the Plan and safety mitigation measures.

Appendix A Road Traffic Signs

Appendix B **TMP Summary**

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