

Appendix G

Traffic and Transport Management Sub-Plan

1.1 INTRODUCTION

During the construction of the Drennan PV Power Facility, PV components will be delivered to site using road transport. Infrastructure required for the proposed PV power facility, including support structures, PV modules, frames, as well as machinery will be transported to and from the site from various locations in the region. The purpose of a Traffic Management Plan (TMP) is to minimise the potential traffic related incidences on the project site, as well as impact of project related traffic on other road users and people living along transport routes.

The Drennan PV Power Facility is still in the early planning phase, therefore contractors and the final route from port to site has not yet been confirmed. A detailed Traffic and Transport Study covering this aspect will be undertaken at least three months prior to construction and the findings and any additional mitigation measures should be incorporated into this TMP.

1.2 OBJECTIVES OF THE TMP

The TMP has the following objectives:

- Provide an overview of the project site, associated activities, and key project activities influencing traffic and transport;
- Provide a framework description and plan of the traffic and transport management elements involved with undertaking the construction and operation of the proposed project;
- Provide a structure within which Solaire Direct can further develop more detailed traffic and transport plans as a result of a detailed traffic and transport study; and
- Serve as key management and mitigation measures that are adopted by Solaire Direct, and receive final approval from relevant authorities.

1.3 LEGAL REQUIREMENTS

Due to the size and quantity of components, trucks will be used to deliver components. It is not anticipated that trucks carrying large enough loads to be considered abnormal loads in terms of the Road Traffic Act (Act No 29 of 1989) will be required. If such loads are required to be used, a permit for a vehicle carrying an abnormal load must be obtained from the relevant Provincial Authority. The vehicle must comply with the Administrative Guidelines for Granting of Exemption Permits for the Conveyance of Abnormal Loads, issued by the Department of Transport, 2009.

1.4

SITE ACCESS

The site will be accessed from the R390 road at the existing site entrance (32°26'17.12"S 25°44'12.91"E). An existing gravel road on the western side of the railway line will be upgraded to approximately 6 m in width, and used to cross the railway line. The railway line crossing will be upgraded to decrease the slope to between 26-45 degrees and 5 m width on either side of the railway line. The existing gravel road on the east side of the railway line running south will be used and upgraded to approximately 6 m in width in order to reach the PV power facility's direct footprint. Internal paths will be created to enable access within the PV power facility.

Within the PV arrays, a minimum spacing of 6.2 m is required between each row to avoid shadowing of the panels by adjacent rows. These spaces will not be gravelled or paved. PV power facility maintenance will consist mainly of PV panel replacement, PV panel cleaning and other minor mechanical and electrical infrastructure repairs. Access will be needed primarily for light service vehicles entering the site for maintenance, inspection and PV panel cleaning purposes.

1.5

VEHICLE MOVEMENTS

It is anticipated that the following number of trips would be required:

- Delivery of panels: 200 loads consisting of 18.9 tons each on 12 m long trailers.
- Delivery of electrical equipment and components: 28 loads of 20 tons each.
- Delivery of frames: 21 loads of 20 tons each.
- Earthworks: potentially 1400 loads of 10 m³ each to the identified Local Authority Landfill Site.

During the operational phase, it is expected that potential traffic impacts will be reduced, with vehicles only required to transport infrastructure during routine maintenance and upgrading phases.

It is therefore expected that up to 1649 vehicle movements would be required to deliver the PV components and remove the earthworks to a landfill site over the construction period. The construction will, however, be phased and the above mentioned vehicle movements will be spread throughout the construction period of 18 to 24 months. During the construction phase of the project, increases in traffic levels would be intermittent and temporary in nature.

During the construction phase, up to 291 workers would also have to travel to and from the site on a daily basis.

Once all phases are operational, there would be an operations team comprising of full time personnel. These employees would have to commute to and from the site on a daily basis. During the operational phase, it is expected that potential traffic impacts will be reduced, with vehicles only required to transport infrastructure during routine maintenance and upgrading phases. Potential traffic impacts associated with the operation of the facility would be largely limited to the site and the local access road.

1.6 *DAILY TRAFFIC MOVEMENTS*

Considering the total schedule of vehicle movements to the site and likely construction period, it is estimated that typical daily traffic movements will be minimal.

The peak period for construction deliveries will be related to the construction of the PV framework and panel assembly. Considering the total number of deliveries expected, it is anticipated that a maximum of approximately 10 truck deliveries per day will take place.

1.7 *PROPOSED WORKING HOURS*

It is anticipated that the working hours for construction and operation will be standard working hours from 08:00 to 17:00, Monday to Friday.

1.8 *PARKING*

In order to ensure efficient movement of traffic along the site access roads it is proposed that a parking area will be provided within the site, adjacent the guardhouses.

1.9 *SITE DELIVERY ROUTE*

All project components will be sourced from Cape Town in the Western Cape. The most likely delivery route is outlined below and can be seen in *Figure 1.1*.

Project components will leave Cape Town and travel north east on the N1 national road to Beaufort West. From Beaufort West the route will continue north east on the N1 to Three Sisters. At Three Sisters the route heads north on the N12 through Victoria West and Britstown to Hopetown. From Hopetown the route carries on north east on the N12 to the Drennan site. The site will be accessed from the N12.

Figure 1.1 Proposed Transport Route



2 *SPECIFIC TRAFFIC AND TRANSPORT MANAGEMENT MITIGATION*

Mitigation and compliance monitoring measures required to be undertaken by Solaire Direct or the ECO, are presented in this section under the following headings:

- Pre-Construction Planning Phase;
- Construction Phase; and
- Operational Phase.

Mitigation and compliance monitoring measures listed in this section must be implemented by Solaire Direct during the various phases of the project. These measures are based on best practice and specialist recommendations to minimise impacts on the Drennan site.

Table 9.1 PRE-CONSTRUCTION PLANNING PHASE

Aspect		Objective	Actions to be undertaken to Mitigate Environmental Impact		Parameters for Monitoring	Responsibility	Frequency / Timing
#	Description of Aspect		#	Commitment / Actions Required / Key Controls			
1	Permit Requirements	Ensure compliance with legal and other permitting requirements.	1.1	All necessary transportation permits will be applied for at this stage and obtained from the relevant authorities, including permits for abnormal loads if required.	Permits	Solaire Direct	Prior to construction
			1.2	Oversee development of permits required by contractors.			
2	Transport routes	Ensure the selection of the most suitable route from Cape Town to site.	2.1	A transport study must be undertaken at least three months prior to construction.	Traffic and Transport Study	Solaire Direct	Prior to construction
3	Site layout and laydown area	Ensure that layout of the laydown area and temporary construction camp allow for ease of vehicle movement.	3.1	The layout of the construction camp must allow for sufficient space for vehicles to turn on site and avoid the need to reverse as far as possible.	Engineering drawings	Solaire Direct	Prior to construction
			3.2	Ensure potential blind spots are eliminated when layout is being finalised.			
			3.3	Ensure adequate crossing points (roads and delivery zones) for pedestrians are indicated in the final layout.			
			3.4	Ensure storage areas, particularly Above Ground Storage Tanks (ASTs), are protected from potential impacts with vehicles.			
			3.5	Ensure adequate parking exists on site for all construction vehicles.			
			3.6	Internal roads must have adequate turning circles and over taking zones for delivery vehicles.			

Table 9.2 CONSTRUCTION AND OPERATION PHASE

Aspect		Objective	Actions to be undertaken to Mitigate Environmental Impact		Parameters for Monitoring	Responsibility	Frequency / Timing
#	Description of Aspect		#	Commitment / Actions Required / Key Controls			
1	Driver Education	To ensure all drivers are aware of driving protocols and familiar with the TMP.	1.1	Driver education must be included in the contractor's induction process.	Induction	Contractor	Prior to construction
			1.2	A copy of the TMP must be readily available on site at all times.	TMP on site		
2	Route Management	To minimise risk to other road users and residents along the transport route.	2.1	Prior to the transport of abnormal loads, if required, the hauler must liaise with local authorities, police and emergency services to ensure they are aware of the abnormal load movements.	Proof of communication	Contractor/ Haulier	Prior to transportation
			2.2	Any conditions given in the abnormal load permit must be adhered to (if required).	Abnormal Load Permit (if required)	Contractor	During construction
			2.3	Construction vehicles must obey all road signs on public roads.			During construction
3	On site driving	To minimise risks to drivers and other site users while vehicles are moving on site.	3.1	The vehicles of the contractor and his suppliers shall not exceed a speed of 40 km/h on gravel or earth roads on site and within 500m of the site.	Grievance Procedure	Contractor	During construction and operation
			3.2	One way systems must be implemented to ensure the flow of vehicles and to reduce the need to reverse vehicles.			During construction and operation
			3.3	All vehicle traffic routes must be kept clear of obstruction.			During construction and operation
			3.4	Ensure suitable signage to warn pedestrians about vehicle movements are clearly visible in appropriate zones, such as delivery zones.			During construction and operation
			3.5	Ensure vehicle reverse warning lights and			

Table 9.2 CONSTRUCTION AND OPERATION PHASE

Aspect		Objective	Actions to be undertaken to Mitigate Environmental Impact		Parameters for Monitoring	Responsibility	Frequency / Timing
#	Description of Aspect		#	Commitment / Actions Required / Key Controls			
				alarms are in working order.			During construction and operation
4	Deliveries	Minimise potential risks during deliveries to the site.	4.1	Deliveries must be limited to working hours.	Log of deliveries and timing	Solaire Direct and Contractor	Through construction and operation
			4.2	Prior notice must be given for abnormal load deliveries to ensure that adequate staff are available to guide vehicles.			
			4.3	Deliveries should be scheduled to prevent congestion on site.			
5	Lighting	Reduce the potential impact of lighting on other road users.	5.1	Any security lighting at the contractor's camp is to be placed in such a way as to not cause a nuisance to traffic on adjacent roads.	Grievance Procedure	Contractor	During construction
6	Road Maintenance	Ensure public and internal roads are maintained and losses are compensated for.	6.1	All internal and access roads that will be used during the construction and operation phase of the project will be maintained by Solaire Direct.	Visual Inspection by ECO	Solaire Direct	Throughout construction and operation
			6.2	Solaire Direct will develop a policy and procedure for assessing all damages and losses (e.g. damage to property, injury or death of people or livestock) resulting from project vehicles.	Policy outlining procedure for assessing and compensation for damages due to project vehicles.		