

INVITATION TO BID

CBD 1

BID NUMBER	BID 15 2026
CLOSING DATE AND TIME	TUESDAY 20 th OCTOBER 2026 STRICTLY @ 12:00
COMPULSORY SITE MEETING	FRIDAY 9 OCTOBER 2026 @ 12:00 SMITHSTONE FARMING , WUPPERTHAL GPS COORDINATES: 32°00'32.6"S 19°12'20.5"E Any person arriving late will not be allowed to sign the attendance register and therefore would not be allowed to participate in the bid BIDDERS (INCLUDING ALL PARTNERS OF A JOINT VENTURE/CONSORTIUM) WHO FAIL TO ATTEND THE COMPULSORY SITE AND INFORMATION MEETING SHALL BE DEEMED NON-RESPONSIVE AND ANY BIDS SUBMITTED BY SUCH BIDDERS WILL NOT BE CONSIDERED FOR EVALUATION
DESCRIPTION	WUPPERTHAL: SMITHSTONE FARMING: SUPPLY OF MATERIAL AND INSTALLATION OF NEW SOLAR PANELS WITH BACKUP BATTERIES.
NAME OF TENDERER/BIDDER	
CSD NUMBER	
TOTAL BID PRICE (VAT INCLUDED)	
VALIDITY PERIOD OF BID	90 DAYS

SUBMISSION OF DOCUMENTS

Sealed tenders, endorsed as indicated in the bid document, must reach **Casidra** SOC Ltd at their Head Office, 22 Louws Avenue, Southern Paarl, placed in the bid box available at Reception.

FAILURE TO PROVIDE ANY OF THE COMPULSORY DOCUMENTATION AND PARTICULARS MAY RENDER THE BID INVALID.

PLEASE NOTE:

Documents must be bound as **Casidra** will not take responsibility for any information that is lost due to unbound submissions of tenders.

Bidders are requested, where possible, to provide an electronic copy of their complete tender submission on a USB flash drive together with the hard-copy submission. The electronic copy is intended for administrative and record-keeping purposes only and is not a compulsory requirement and will not form part of the bid evaluation

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Bids must be delivered by the stipulated time to the correct address. **LATE BIDS WILL NOT BE ACCEPTED.** Casidra will not take responsibility where bidders submit responses via courier's services. Bidders are responsible to ensure that the bid document is submitted in the tender box on/before the closing date and time.

Questions Regarding The Tender Will Be Entertained Until 7 Working Days Before Closure Of Tenders. Answers Will Be Formulated And Distributed To Each Service Provider Who Attended The Clarification Meeting.

**BIDS WILL NOT BE ACCEPTED AFTER THE CASIDRA'S STIPULATED BUSINESS HOURS
(08:00 – 16:30)**

THE FOLLOWING RETURNABLE DOCUMENTS (INCLUDING THE CBD FORMS AS PART OF THE BID) MUST BE VALID FOR A PERIOD OF 90 CALENDER DAYS AFTER CLOSURE OF THE BID AND SUBMITTED AS PART OF THE BID PACKET

Document	Description	Compulsory	Comment
CBD 1	Invitation to bid	✓	
CBD 2	Conditions to submit bid	✓	
CBD 3	Terms of Reference	✓	
CBD 4	Pricing schedule	✓	
CBD 5 (a)	Supply Chain – Preferential Procurement Regulations 2022 and Codes of good practice	✓	
CBD 5 (b)	Declaration	✓	
COMPENSATION FOR OCCUPATIONAL INJURIES AND DISEASES ACT (COIDA)	Valid Letter of good standing	✓	
COMPANY PROFILE	Detailed company profile including but not withstanding core business activities, background, resources, etc.	✓	
CONSTRUCTION MANAGER COMPETENCY	Provide proof of competency of a construction manager in terms of Construction Regulations 2014 Clause 8 in format of CV showing competency in field of construction as well as health & safety	✓	

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PUBLIC LIABILITY INSURANCE	Provide a Public Liability Insurance to the Value of R5m	✓	
REFERENCES	Provide a minimum of least three (3) different references letters from three (3) different companies	✓	
CONSTRUCTION INDUSTRY DEVELOPMENT BOARD (CIDB)	Grading certificate 3EP or higher from CIDB for contractor	✓	
EXPERIENCE	Provide detailed list of completed projects with contact numbers regarding solar projects completed as well as monetary values	✓	

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Name of bidder				
Postal address				
Street address				
Telephone number (code and number)				
Cell phone number				
E-mail address				
VAT registration number				
SARS TCC attached (Foreign suppliers with no tax obligation in South Africa must complete the SBD1 form that will be submitted to SARS for verification and issuing of a Confirmation of Tax Obligation letter.)	YES	☐	NO	☐
Originally certified B-BBEE status level certificate/Original Sworn Affidavit (A B-BBEE status level verification certificate must be delivered to Casidra SOC Ltd, 22 Louws Avenue, Paarl, in order to qualify for preference points for B-BBEE)	YES	☐	NO	☐
I, _____ as the authorised representative of the company / CC / business hereby declare that, to the best of my knowledge the information submitted is true and correct and that I am duly authorized as a signatory of this bid. On behalf of my business, I accept the terms and conditions as set out in this document. I will supply documentary proof of any information supplied herein on request and to the satisfaction of Casidra. In terms of the POPI Act I further give consent that my contact and company details as will be captured on the Casidra database may be shared with the role players/funders involved in the project and be used by Casidra for the purpose of further procurement.				
Signature of bidder		Date		
Capacity under which this bid is signed				

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AUTHORITY TO SIGN DOCUMENTS

I/We*, the undersigned, am/are* duly authorised to sign the form of tender on behalf of
..... by virtue of the
Articles of Association/Resolution of the Board of Directors*, of which a certified copy is attached, or
.....

SIGNATURE :

(Name in Print) :

DATE :

WITNESSES:

1.

2.

* Delete whichever is inapplicable or complete as indicated if none is applicable.

AND

DECLARATION BY THE COMPANY SUBMITTING THE BID:

I, _____

- A. As the authorised representative of the company / CC / business hereby declare that, to the best of my knowledge the abovementioned information is true and correct and that I am duly authorized as a signatory of this tender. On behalf of my business, I accept the terms and conditions as set out in this document. I will supply documentary proof of any information supplied herein on request and to the satisfaction of **Casidra**.

Signature

Date

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1. BID SUBMISSION:		
1.1. Bids must be delivered by the stipulated time to the correct address. LATE BIDS WILL NOT BE ACCEPTED. 1.2. All bids must be submitted on the official forms provided (not to be re-typed). 1.3. Bidders must be registered on the Central Supplier Database (CSD). 1.4. Original Sworn Affidavit and originally certified B-BBEE certificates must be submitted to bidding institution to qualify for preference points for B-BBEE. 1.5. Bids are subject to the Casidra SOC Ltd Financial Regulations, Preferential Procurement Policy Framework Act and the Preferential Procurement Regulations, 2022, the General Conditions of contract (GCC) where applicable, and if applicable other special conditions of contract. 1.6. The GCC may be downloaded at https://ocpo.treasury.gov.za/Legislation/Instruction%20Notes/General%20Conditions%20of%20Contract.pdf		
2. TAX COMPLIANCE REQUIREMENTS		
2.1. Bidders must ensure compliance with their tax obligations. 2.2. If a discrepancy exists between CSD and SARS, a printed version of the Tax Clearance Certificate (TCC) must be supplied by the supplier and the e-Filing PIN number for verification of authentication by Casidra SOC Ltd. 2.3. Foreign suppliers with no tax obligation in South Africa must complete SBD1 that will be submitted to SARS for verification and the issuing of a Confirmation of Tax Obligation letter. 2.4. Consortia/joint ventures/sub-contractors must each submit a separate TCC.		
3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS		
3.1. Is the bidder a resident of the Republic of South Africa (RSA)	Yes ☐	No ☐
3.2. Does the bidder have a branch in RSA?	Yes ☐	No ☐
3.3. Does the bidder have a permanent establishment in the RSA?	Yes ☐	No ☐
3.4. Does the bidder have any source of income in the RSA?	Yes ☐	No ☐
IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO OBTAIN A TAX COMPLIANCE STATUS/TAX COMPLIANCE SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.		
4. TENDER CONDITIONS		
CASIDRA reserves the right to: - disregard any bids where the declaration has not been signed; - accept parts of the bid items or split bids based upon item prices; - disclose the results of the points awarded on request; - evaluate and award points according to the documentation supplied and evaluate functionality at its own discretion; - award the bid to the qualifying bidder with the highest number of points scored, unless the prices are not market related or on the basis of objective criteria stated in the tender documents, and - to award the bid to a bidder which does not necessarily have the lowest price.		
The bid may be cancelled if: - all the bid offers received exceed the available budget - circumstances change and there is no longer a requirement for this service; - funds are no longer available or if there are insufficient funds available in the budget for the work; - no acceptable bids and/or market related prices are received; - there is a material irregularity in the tender process (administrative non-compliance of prescribed legislation); - false information was supplied by the bidder; - Cancellation of bid will be placed in the same media as initially advertised.		
Other notes: - Final points scored will be rounded off to the nearest 2 decimal places. - In the event of equal scores, the offer with the highest B-BBEE score will be successful. If scores are still equal, and where functionality is part of the bid, the offer with the highest functionality score will be successful. If the scores are still equal, the drawing of lots will determine the outcome. Casidra SOC Ltd retains the right to amend financial/accounting calculations and to accept the amended amount as the new bid amount.		
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PROJECT: WUPPERTHAL, SMITHSTONE FARMING: SUPPLY OF MATERIAL AND INSTALLATION OF NEW SOLAR PANELS WITH BACKUP BATTERIES		
GENERAL REQUIREMENTS The works, as described, is situated in the Cederberg municipality on R364 towards Doringbos. The quoted amount will be a lump sum bid and must include labour and machinery. The successful bidder must have the capacity to start the works within 7 (seven) days of appointment.		
Conditions that may pose a risk: Works will occur on acidic, nutrient-poor, grey to brown sandy and sandy loam soils derived from sandstone group and Cape Granite Suite. The contractor must provide security measures of material whilst work on location B – 8 ha Centre Pivot System and location A – Pallet Machine System is closer to farm house or storage which will be provided by the farm up on request by the contractor. The distance between Location A and B is approximately 1.7 km apart whereas location B is considered high risk, it close to main road R364 to Doringbos. The Contractor must put all necessary precautions in place to work under these conditions.		
CONTRACT PERIOD	The completion period of this service is (Four) 4 months starting from the day of appointment.	
RETENTION	Retention is 10% of contract sum for 3 months not bearing interest, with no upper limit.	
PENALTY CLAUSE	The penalty R 550.00 per calendar day will be applied for late completion of works.	
CIDB GRADING (If marked YES under Procurement Strategy above)	Tenderers must have a CIDB contractor grading designation of 3 EP or higher. Joint ventures/Consortiums are eligible to submit tenders provided that: 1. Every member of the joint venture/consortium is registered with the CIDB; 2. The lead partner has a contractor grading designation in the (above indicated) class of construction work; 3. The combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with Table 9 of the <i>Construction Industry Development Regulations, 14 November 2008, GG 31603</i>.	
SUB CONTRACTING Bidder to complete sub-contracting section on CBD 5A if applicable	Under CIDB Practice note 7 of 2007, one of the following subcontracting will apply: 1. Domestic subcontractor (appointed by the main contractor at his/her discretion);	
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FUNCTIONAL REQUIREMENTS

Functional refers to: A service or product that is designed to be practical, useful, working or operating, taking into account factors like quality, reliability, viability, and durability and the technical capacity (time and resources) and ability (knowledge and skills) of the bidder to execute the works.

This bid is subject to the evaluation of functional requirements: **NO**

LABOUR LOG SHEETS

One of Casidra's agreed mandate with the Western Cape Department of Agriculture is to report on jobs created for the individual projects. To assist Casidra with accurate reporting it is a condition of this bid document that the successful bidder will have to submit labour log sheets with all required information properly completed.

Documentation **MUST be submitted with every payment claim** from the Contractor on a monthly basis. Failure to submit this information will result in default by the contractor and may affect payment certificates being issued.

Documentation will consist of excel spreadsheet combined total person days, weekly log timesheet & relevant copies of South African ID Documents of workers claimed for under person days. This documentation will be emailed to the successful bidder. Weekly log sheet MUST be signed by workers on the site. The person days claimed for workers must have South African citizenship.

The Protection of Personal Information Act 4 of 2013 (also known as POPIA), regulates and controls the processing, usage and storage of personal information. In order to be compliant with POPIA, Casidra commits not to share your information with any third party outside Provincial & National Departments of Agriculture, project management agencies, co-workers and associates / partners as per our business approval and evaluation, and reporting processes.

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SPECIAL CONDITIONS OF CONTRACT

PROJECT: WUPPERTHAL: SMITHSTONE FARMING: SUPPLY OF MATERIAL AND INSTALLATION OF NEW SOLAR PANELS WITH BACKUP BATTERIES.

This project consists of the following elements:

SUPPLY OF MATERIAL AND INSTALLATION OF NEW SOLAR PANELS WITH BACKUP BATTERIES

1. DESCRIPTION OF THE WORKS:

The proposed systems are designed to supply the following agricultural loads:

- Solar PV and BSS system supplying the pallet machine.
- Solar PV and BSS system supplying the 8-ha centre pivot irrigation system.

As the two loads are located approximately 1.7 km apart and the site has no available utility grid connection, separate standalone off-grid power systems have been proposed for each installation location.

2. Project location

The project is located at the Smithstone farm, Wuppertal in the Western Cape.

Coordinates: 32°00'32.6"S 19°12'20.5"E

Figure 1: Site Location



3. System description

Smithstone Farm does not have access to a utility grid supply. The pallet machine and the 8 ha centre Pivot irrigation system are located approximately 1.7 km apart. Consequently, two independent standalone off-grid power systems have been proposed to meet the electrical and operational requirements of each installation location.

Each system comprises a solar photovoltaic (PV) array, hybrid inverter, Battery Storage System (BSS),

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electrical protection equipment, monitoring and control equipment, and associated electrical and civil infrastructure.

The proposed systems have been sized based on the project requirements, technical specifications, available load profiles and operational information provided in the tender documentation, together with additional information and clarifications obtained during the site meeting.

Location A – Pallet Machine System
 Location B – 8 ha Centre Pivot System

Figure 2: Installation Locations



4. Proposed System

Location A

The proposed off-grid system for Location A comprises a 74.4 kWp solar PV array, a 50 kW ATESS HPS50 hybrid inverter, and a 514.456 kWh IES Battery Storage System.

The PV array comprises eight parallel strings, with each string consisting of 15 PV modules connected in series. The eight PV strings are connected through a suitably rated PV combiner box before connection to the inverter PV input.

The proposed system comprises the following major equipment:

- 1 × 50 kW ATESS HPS50 hybrid inverter
- 1 × suitably rated PV combiner box
- 4 × 128.614 kWh IES LFP battery banks
- 120 × 620 Wp monocrystalline PV modules

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- Associated DC and AC protection equipment
- Monitoring, communication and control equipment (internet required)

Location B

The proposed off-grid system for Location B comprises a 74.4 kWp solar PV array, a 50 kW ATESS HPS50 hybrid inverter, and a 385.842 kWh IES Battery Storage System.

The PV array comprises eight parallel strings, with each string consisting of 15 PV modules connected in series. The eight PV strings are connected through a suitably rated PV combiner box before connection to the inverter PV input.

The proposed system comprises the following major equipment:

- 1 × 50 kW ATESS HPS50 hybrid inverter
- 1 × suitably rated PV combiner box
- 3 × 128.614 kWh IES LFP battery banks
- 120 × 620 Wp monocrystalline PV modules
- Associated DC and AC protection equipment
- Monitoring, communication and control equipment (internet required)

5. Design Considerations

Inverter: The ATESS HPS50 transformer-based hybrid inverter was selected based on the off-grid operating requirements and the characteristics of the connected agricultural loads. The transformer-based topology provides electrical isolation and is suitable for applications involving motor-driven equipment with variable loading and elevated starting-current requirements.

The inverter incorporates a single PV input channel. The eight PV strings are therefore connected in parallel through a suitably rated and protected PV combiner box before connection to the inverter DC input. The combiner box shall incorporate individual string protection, DC surge protection and a suitably rated main DC isolation arrangement.

The inverter selection was further evaluated against the proposed PV array voltage, current and power characteristics, the BSS interface requirements and the operational requirements of the connected loads.

PV Plant: During a previous site assessment, it was agreed that a ground-mounted PV array would be utilized at each installation location to consolidate the PV generation system within a centralized area and maximize the available solar generation capacity.

Each proposed array comprises 120 × 620 Wp PV modules, providing a total installed DC capacity of 74.4 kWp. The modules are configured as eight parallel strings of 15 modules connected in series.

With a nominal inverter output capacity of 50 kW, the resulting DC-to-AC ratio is 1.488. The increased DC capacity supports simultaneous load supply and battery charging while improving energy availability during periods of reduced irradiance.

Battery Sizing: The Battery Storage System (BSS) capacity was sized based on the required load demand and operating autonomy for each installation location. The required battery energy was calculated by multiplying the connected load by the required runtime, with an operational depth of discharge of 80% applied to determine the minimum nominal battery capacity.

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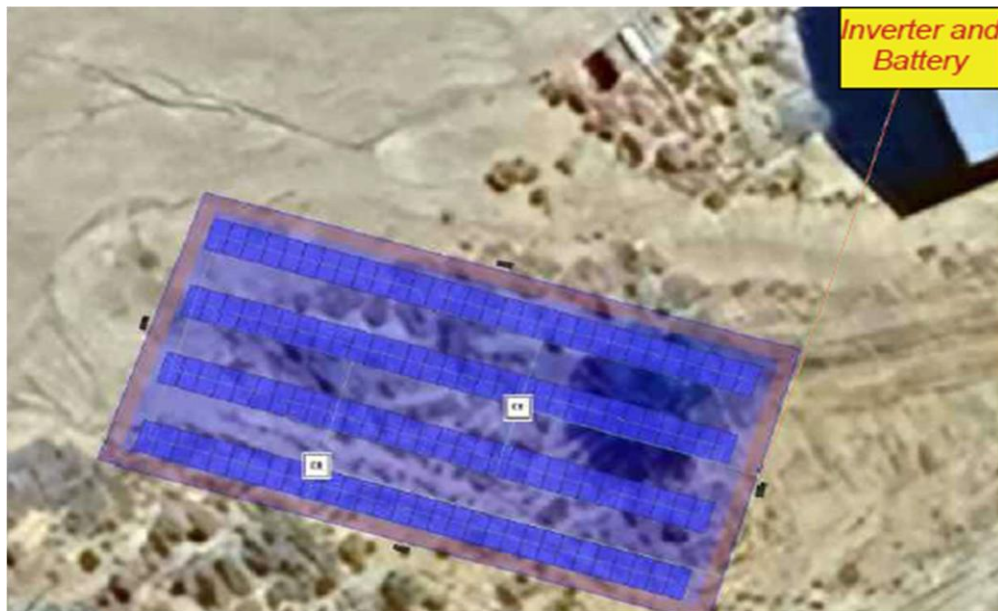
Location A: The connected load for Location A is 40.25 kW, with a required runtime of 9 hours. The required usable battery energy is therefore 362.25 kWh. The proposed BSS capacity is 514.456 kWh. At 80% depth of discharge, the theoretical usable energy capacity is 411.565 kWh.

Location B: The connected load for Location B is 29 kW, with a required runtime of 8 hours. The required usable battery energy is therefore 261 kWh. The proposed BSS capacity is 385.842 kWh. At 80% depth of discharge, the theoretical usable energy capacity is 308.674 kWh.

Layout Drawings

Location A: The site layout below indicates the proposed ground-mounted PV array and the BSS and inverter installation area. The inverter and battery equipment will be installed within the existing barn, subject to confirmation that the installation area provides adequate ventilation, environmental protection, fire safety provisions, equipment clearances and maintenance access in accordance with the equipment manufacturer's requirements.

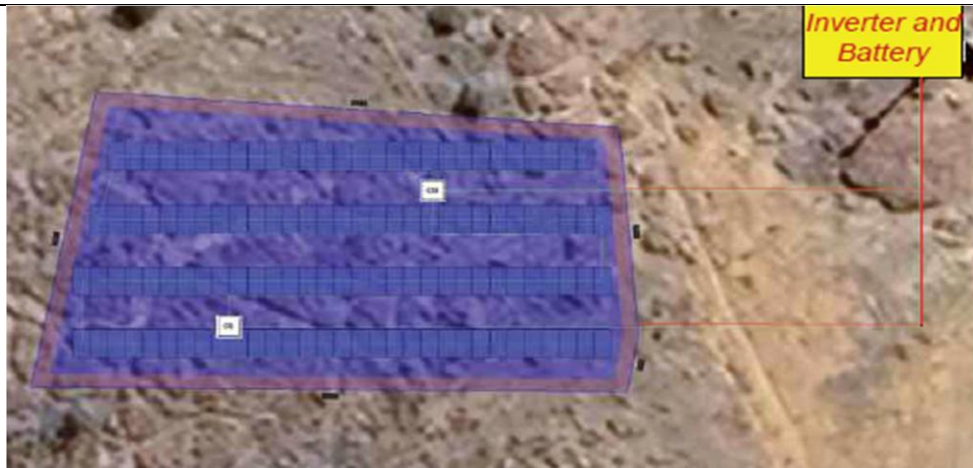
Figure 3: Location A, Site Layout:



Location B: The site layout below indicates the proposed ground-mounted PV array and the BSS and inverter installation area. The inverter and battery equipment **must** be installed beneath a suitably designed shelter to provide protection against direct solar exposure and adverse weather conditions while maintaining the ventilation, equipment clearances and maintenance access required by the equipment manufacturer.

Figure 4: Location B Site Layout:

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6. Calculations

Ensuring electrical compatibility between the inverters and the modules.

Electrical Data for the ATESS hybrid Inverter - HPS50.

Source: ATESS 50kW Inverter Datasheet

Max. PV input voltage: 1000V

Max. PV power: 75kW

MPPT module quantity: 1

PV DC voltage range: 480V-800V

MPPT voltage range @ full load: 480V-800V

Electrical Data for the Canadian Solar Solar PV Modules @ STC – TOPBiHiKu620

Source: PV Module Datasheet

Nominal max. power (Pmax): 620W

Open circuit voltage (Voc): 48.4V

Operating voltage (Vmp): 41.2V

Short circuit current (Isc): 16.08A

Operating current (Imp): 15.06A

Temperature coefficient (Pmax): -0.29%/°C

Temperature coefficient (Voc): -0.25%/°C

Temperature coefficient (Isc): 0.04%/°C

Environmental conditions

Source: PVGIS, Meteoblue and Helioscope

Max. Irradiance: 1103W/m² – Date: 14 Dec 2024 — 13:00

Minimum ambient temperature: -8°C

Maximum ambient temperature: 44°C

Calculations:

Max. module temperature (Tmax) = max ambient temp + 50°C

= 44 + 50

= 94°C

Min. module temperature (Tmin) = min ambient temp

= -8°C

Voc@Tmin = Voc@STC + ΔVoc

= Voc@STC + (Voc@STC x αvoc x ΔT)

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$$\begin{aligned}
&= \text{Voc@STC} + (\text{Voc@STC} \times \alpha_{\text{voc}} \times (\text{Tmin} - 25)) \\
&= 48.4 + (48.4 \times -0.25\% \times (-8 - 25)) \\
&= 52.39\text{V}
\end{aligned}$$

$$\begin{aligned}
&\text{Max. number of modules per string} = \text{Max. PV input voltage} / \text{Voc@Tmin} \\
&= 800 / 52.39 \\
&= \mathbf{15.27 \text{ (rounded down to 15)}}
\end{aligned}$$

$$\begin{aligned}
&\text{Vmpp@Tmax} = \text{Vmpp@STC} + \Delta \text{Vmpp} \\
&= \text{Vmpp@STC} + (\text{Vmpp@STC} \times \alpha_{\text{voc}} \times \Delta \text{T}) \\
&= \text{Vmpp@STC} + (\text{Vmpp@STC} \times \alpha_{\text{voc}} \times (\text{Tmax} - 25)) \\
&= 41.2 + (41.2 \times -0.25\% \times (94 - 25)) \\
&= \mathbf{34.093\text{V}}
\end{aligned}$$

$$\begin{aligned}
&\text{Min. number of modules per string} = \text{min. MPPT voltage range} / \text{Vmpp@Tmax} \\
&= 480 / 34.093 \\
&= 14.08 \text{ (rounded up to 15)}
\end{aligned}$$

$$\begin{aligned}
&\text{Number of strings} = \text{Max PV Power} / (\text{Max number of panels per string} \times \text{Pmax}) \\
&= 75000 / (15 \times 620) \\
&= 8.06 \text{ (rounded to 8)}
\end{aligned}$$

$$\begin{aligned}
&\text{Impmax} = (\text{Max. Irradiance} / \text{Irradiance@STC}) \times \text{Imp@STC} \\
&= (1100 / 1000) \times 15.06 \\
&= \mathbf{16.57\text{A}}
\end{aligned}$$

$$\begin{aligned}
&\text{Impmax@Tmax} = \text{Impmax} + (\text{Impmax} \times \alpha_{\text{I}} \times (\text{Tmax} - 25)) \\
&= 16.57 + (16.57 \times 0.04\% \times (94 - 25)) \\
&= \mathbf{17.03\text{A}}
\end{aligned}$$

$$\begin{aligned}
&\text{Per string output Cable size} = 1.2 \text{ (Safety Factor)} \times \text{Impmax@Tmax} \\
&= 1.2 \text{ (Safety Factor)} \times 17.03\text{A} \\
&= 20.44\text{A} \\
&= 4\text{mm}^2 \text{ (44A current carrying capacity in a parallel installation)}
\end{aligned}$$

Based on the above calculations and PV module layout, the following configuration was used:

Inverter:

Combiner Box:

String 1- 1 string of 15 PV modules

String 2- 1 string of 15 PV modules

String 3- 1 string of 15 PV modules

String 4- 1 string of 15 PV modules

String 5- 1 string of 15 PV modules

String 6- 1 string of 15 PV modules

String 7- 1 string of 15 PV modules

String 8- 1 string of 15 PV modules

This configuration equates to the following:

120 PV modules

74 400Wp DC capacity

1.488 DC to AC ratio

Calculations for ensuring electrical compatibility between the inverter and the AC output combiner box

Electrical Data for the ATESS hybrid Inverter - HPS50

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Source: Inverter Datasheet
Max Inverter AC output: 72A

Calculations:

Per Inverter AC output Cable size:
= 1.2 (Safety Factor) x 72A
= 86.4A
= 25mm² (110A capacity in air installation)

7. System Design Configuration

Equipment placement and electrical boards:

Location A:

The proposed Battery Storage System (BSS) has a total installed nominal storage capacity of 514.456 kWh and comprises four LFP battery banks, each rated at 128.614 kWh. At an operational depth of discharge of 80%,

The theoretical usable energy capacity is approximately: $514.456 \times 0.80 = 411.565$ kWh

The actual available AC energy shall also consider battery round-trip efficiency, inverter conversion efficiency, auxiliary consumption, minimum reserve SOC and applicable battery operating limitations.

The BSS will be installed within the designated area identified during the site visit, subject to final confirmation of ventilation, equipment clearances, fire safety requirements, access for maintenance and compliance with the manufacturer's installation requirements.

Location B:

The proposed Battery Storage System (BSS) has a total installed nominal storage capacity of 385.842 kWh and comprises three LFP battery banks, each rated at 128.614 kWh.

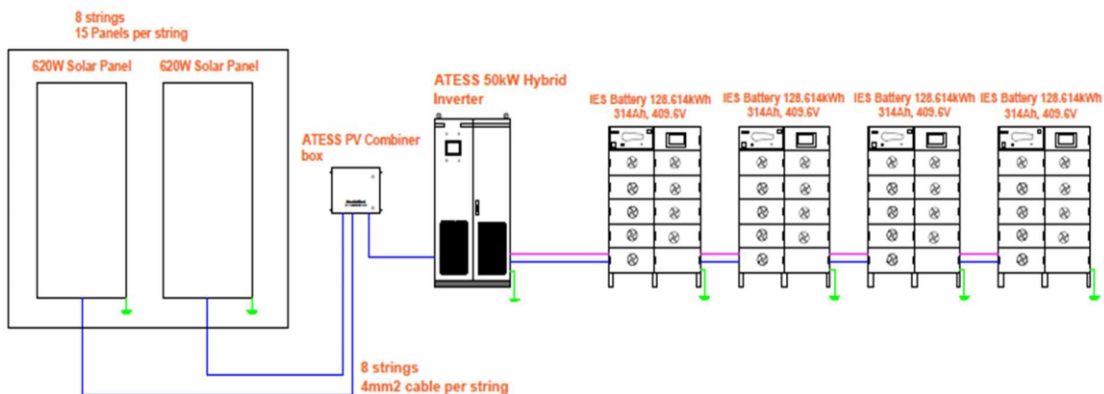
At an operational depth of discharge of 80%, the theoretical usable energy capacity is approximately:

$385.842 \times 0.80 = 308.674$ kWh

The actual available AC energy shall also consider battery round-trip efficiency, inverter conversion efficiency, auxiliary consumption, minimum reserve SOC and applicable battery operating limitations.

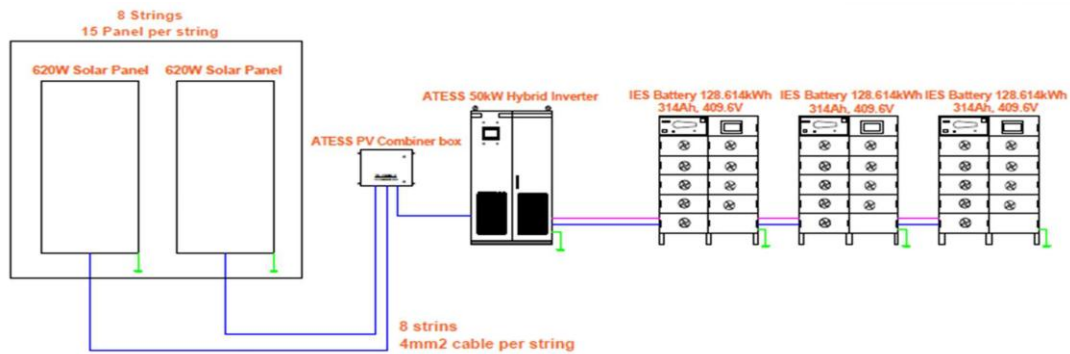
The BSS will be installed beneath a suitably designed shelter to provide environmental protection while maintaining adequate ventilation, equipment clearances and maintenance access in accordance with the manufacturer's requirements.

Figure 5: Typical layout for Location A:



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Figure 6: Typical layout for Location B:



Each installation location comprises 120 × 620 Wp PV modules installed on a ground-mounted support structure. Each PV array has a total installed capacity of 74.4 kWp.

Location A

- Array azimuth: 17.165°
- Array tilt: 25°
- Installed PV capacity: 74.4 kWp

Location B

- Array azimuth: 0°
- Array tilt: 25°
- Installed PV capacity: 74.4 kWp

The final array orientation, row spacing and inter-row separation shall be verified against the detailed layout and shading analysis.

Summary of Simulation Results

Energy yield simulations were undertaken for both installation locations based on the proposed PV array capacities, orientations, tilt angles and site-specific solar resource data. The simulation results provide an estimate of the expected annual PV energy production.

As the proposed installations operate as standalone off-grid systems, the annual PV yield results shall be considered together with the site load profiles, seasonal energy demand, BSS usable capacity, battery state-of-charge behaviour and expected periods of low solar irradiation.

Location A:

PV power = 74.4 kWdc
AC capacity = 50kW unit
Annual production = 134.3 MWh/year
Specific Production = 1805.6 kWh/kWp/year
Performance Ratio = > 74.5%

Location B:

PV power = 74.4 kWdc
AC capacity = 50kW unit
Annual production = 136.2 MWh/year

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Specific Production = 1830.9 kWh/kWp/year
Performance Ratio = > 75.1%
The simulation results for the arrays are provided in the following attachments: "Production Report - Casidra - Smithstone Farming A or B".

8. Operation:

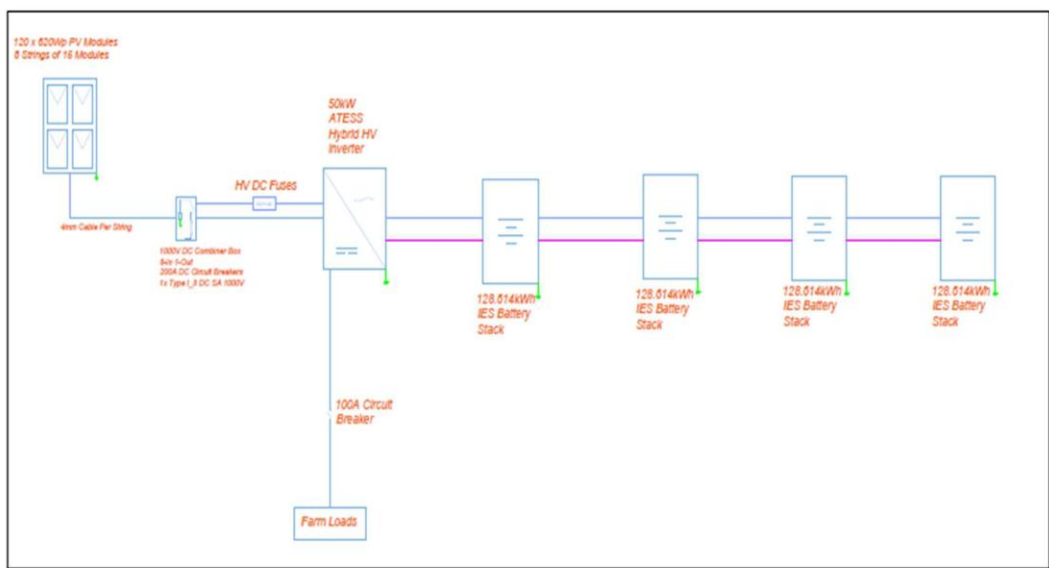
The proposed systems are standalone off-grid solar PV and BSS installations designed to supply the designated agricultural loads independently of the utility grid.
During periods of sufficient solar irradiation, the PV array will supply the connected loads while surplus PV energy will be utilised to charge the BSS. Where the instantaneous PV generation is insufficient to meet the load demand, the BSS will supplement the available PV generation.
During periods of low or zero solar generation, the connected loads will be supplied from the BSS, subject to the configured minimum battery state-of-charge limit and system protection settings.
The inverter and battery management system shall continuously monitor PV generation, load demand, battery state of charge, battery operating limits and system alarms. Appropriate control logic shall be configured to prevent excessive battery discharge and to ensure controlled system shutdown and recovery where operating limits are reached.

System Components

The off-grid solar PV systems at Locations A and B each comprise 120 × 620 Wp high-efficiency PV modules installed on ground-mounted support structures at a tilt angle of 25°.
Each PV array is connected to a 50 kW ATESS HPS50 hybrid inverter through a suitably rated and protected PV combiner box. The hybrid inverter converts the DC power generated by the PV array into AC power for the connected loads and manages the charging and discharging of the associated BSS.
Monitoring and control equipment will provide real-time information relating to PV generation, load demand, battery state of charge, inverter operating status, system alarms and equipment performance

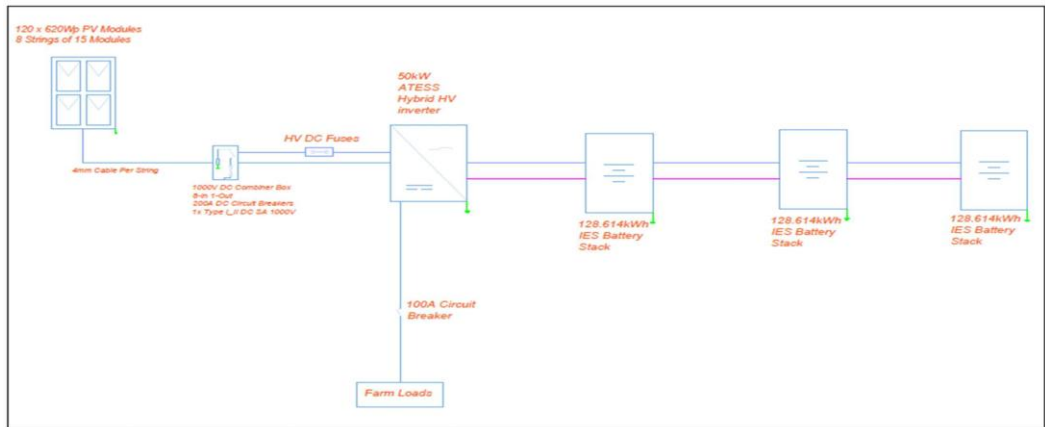
The figure below shows a more detailed interconnection of the components:

Figure 7: Single Line Diagram for Location A:



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Figure 8: Single Line Diagram for Location B:



9. System Control/ Communication Equipment/Monitoring System and HMI

The system will be monitored and controlled locally through the integrated Human-Machine Interface (HMI) of the ATESS HPS50 hybrid inverter.

The monitoring system will provide access to real-time and historical operating information, including PV generation, load demand, BSS state of charge, battery charging and discharging power, inverter operating status, system alarms and fault conditions.

Where communication infrastructure is available, provision should be made for remote system monitoring to support operational oversight, fault diagnosis, performance analysis and maintenance planning.

10. System site, civil earthworks

Civil works will include site preparation, grading and levelling of the designated PV and equipment installation areas as required.

Reinforced concrete foundations will be provided for the ground-mounted PV support structures in accordance with the approved structural design and site-specific geotechnical and wind-loading Requirements.

Equipment foundations and support structures shall be designed to accommodate the applicable static loads, dynamic loads, wind loads, equipment maintenance requirements and drainage conditions.

Final equipment positions shall maintain suitable access routes and clearances for installation, operation, maintenance and emergency response.

11. Earthing and Lightning Protection

A coordinated earthing and lightning protection system shall be provided for each standalone installation. The earthing system shall incorporate the PV module frames, ground-mounted support structures, inverter, BSS enclosures, electrical distribution boards, PV combiner boxes, surge protection devices and all exposed conductive parts requiring protective bonding.

The final earthing arrangement shall be determined based on the system earthing configuration, inverter topology, manufacturer's requirements, measured soil resistivity and applicable standards. Surge protection shall be coordinated on the DC and AC sides of the installation. The requirement for an external lightning protection system shall be determined through an appropriate lightning risk assessment and consideration of the site exposure conditions.

12. Conclusion

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The proposed design provides two independent off-grid solar PV and BSS systems for the Smithstone Farm installation locations. Each system comprises a 74.4 kWp PV array and a 50 kW hybrid inverter with BSS capacities of 514.456 kWh and 385.842 kWh for Locations A and B respectively. The proposed PV configuration of eight strings with 15 modules per string provides a total installed capacity of 74.4 kWp per location and a DC-to-AC ratio of 1.488.

The proposed BSS capacities provide the required theoretical battery autonomy based on the stated load demand, runtime and 80% depth of discharge. The final detailed design and construction documentation shall confirm equipment ratings, cable sizing, voltage drop, protection coordination, BSS autonomy, earthing arrangements, civil foundation requirements and the operating philosophy of each standalone system.

GENERAL CONDITIONS

SITE ACCESS:

The movement of vehicles on the site should be confined to clearly demarcated access routes and existing roads should be used where approved by the Farmer / Land owner. Any deviation should first be approved by the Project Manager, with consultation with the Landowner. The Contractor should ensure that vehicles leaving the site are clean and, wherever possible do not deposit mud and any other earth material on road surfaces.

SHEDS FOR EMPLOYEES AND MATERIALS:

The Contractor shall provide for the supply, erection and maintenance and removal on completion of the works, of ample temporary sheds for the proper storage of materials and for the use of his employees

TEMPORARY LATRINES:

The contractor shall provide for the supply and erection of proper temporary latrines for the use of his employees. Latrines are to be maintained in a thoroughly clean and orderly condition and adopt such precautions to prevent the soil from being contaminated/polluted and remove such latrines at the completion of the works.

DISCREPANCIES BETWEEN PLAN AND SPECIFICATION:

Any discrepancy between the plan and the specification must be brought to the attention of the technical Project Manager before the tenderer submits his price. This is to eliminate any confusion as to what is required for the contract because the tenderer must take note of the fact ***that no additional costs will be entertained for discrepancies between the plan and the specification after the tender price has been submitted.***

SECURITY:

The successful bidder is responsible for his own security of his/her plant, facilities, resources, etc for the duration of the contract.

CLEARING AWAY OF RUBBISH AND MATERIALS:

All rubbish accumulated during the works (including testing and commissioning) and all superfluous materials not required for completion of the contract shall be removed from site by the Contractor on an on-going basis, and as and when directed by the Engineer or Employer.

DUST CONTROL:

The Contractor is to take appropriate measures to minimise the generation of dust as a result of construction works, to the satisfaction of the Project Manager.

(Please see the baseline risk assessment and the health and safety specification).

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FIRE PRECAUTIONS:

All reasonable precautions shall be taken to avoid the outbreak of fire, particularly in work involving the use of naked flames. The Contractor is to allow for full time supervision, and nominate a responsible person to ensure each artisan who is welding, or carrying out any operation that could cause a fire hazard, be equipped with a fire extinguisher. All workmen shall be made aware of the dangers involved in the careless disposal of matches, cigarettes and the like as well as the accumulation of rubbish on site. Hot work permits shall be enforced.

SITE CLEAN UP:

The Contractor shall ensure that all structures, equipment, materials and facilities used or created on site for or during construction activities are removed to the satisfaction of the Project Manager once the project has been completed. All roads to be repaired to at least its original condition. All damage to the sites infrastructure or land production must be repaired or rehabilitated before completion of the project.

NOISE AND NUISANCE CONTROL:

Operations shall be conducted in such a manner that nuisance shall not be caused to the general public, adjoining residents and users of adjacent buildings. If such nuisance is being caused the Contractor shall immediately make such arrangements that will prevent a recurrence of the same and indemnify the Employer against any claims arising therefrom.

RESTRICTIONS ON WORKMEN:

Ensure that workmen confine their activities to the area in which the Contract Works are being carried out. On no account shall workmen enter and use any existing building on site or any completed building without permission. No workmen shall be allowed to use any of the new fittings such as sinks, basins, WC's, cooking equipment, electrical circuits or appliances etc. Smoking will not be allowed on site.

Any transgressions of the above may lead to permanent dismissal from site. All workmen shall be identifiable by suitable ID cards and uniform work clothing.

PLACING OF ORDERS:

The contractor shall place al orders for materials as early as possible, as he/she will be held responsible for any delay in the delivery thereof.

DIMENSIONS OF NEW WORK:

The contractor shall take all dimensions affecting new work on the site since he will be held solely responsible for all new work being of the correct sizes.

EXISTING SERVICES:

If the contractor encounters any existing services such as cables, pipes or sewers during the execution of the works, he must immediately notify the Engineer, halting all work in the vicinity thereof, until instructions to proceed have been given by the Project Manager

Electric wires, telephone wires, pipes, etc. will not be interfered with during the course of the contract but if it should be necessary to disconnect or cut any such wires or pipes, the Project Manager will be advised thereof and his instruction awaited

Lump Sum Bid

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These documents are for a lump sum bid for all labour and material as set out in the Scope of Works. For the purposes of variation orders, the unit rates rate of the services should also be given if requested on the form **CBD 4**.

No unit rate price adjustment of whatever nature, except for decreases or increases in the Value-Added Tax (VAT) and / or Variation Orders, will be applicable in this contract. The bidder shall make provision in his bid price for possible fluctuations in costs.

Premises in Occupation

The premises for the works **will** be in occupation during the contract period. Approval to access the premises must be obtained from the land owner.

Fixed Price Bids

No contract price adjustment of whatever nature, except for decreases or increases in the Value-added Tax (VAT) and / or Variation Orders, shall be applicable in this contract. The Contractor will make provision in his bid for possible fluctuations in costs.

Should the evaluation and award process extend beyond the 90 day bid validity period , bidders will contacted by email and requested to provided written confirmation of an extension of their validity

Expenses in Preparation of Bid

The Client will not be responsible for, subject to the Preferential procurement regulations, nor pay any expenses for losses which the bidder may incur in preparation of this bid.

Inspection of Site

Bidders must familiarise themselves with the local conditions, the accessibility of the site, the full extent and nature of the work to be done and the conditions affecting the execution and pricing of the bid. Claims on the grounds of lack of knowledge in such respects or otherwise will not be entertained.

If a site meeting is held, notice of attendance must be forwarded to the contact person.

Only information given in writing to the Contractor by the Engineer during the tender period will be regarded as binding on the Contract. Verbal information, given during the site inspection or at any other time prior to the award of the Contract, will not be regarded as binding on the Contract.

Site

The site to be occupied will be clearly pointed out to the Contractor at the site handover. The Contractor will not be allowed to extend his operations beyond the boundaries of the site.

Water for the Works

The Contractor may use if available. He will obtain permission from the Land Owner before any connection to or extension of the existing supply is made, which will be executed, removed and made good on completion of the works at the Contractor's own expense.

Electricity & Lighting for the Works

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The Contractor may use the existing power if available. He will obtain permission from the Land Owner before any connection to or extension of the existing supply is made, which shall be executed, removed and made good on completion of the works at the Contractor's own expense.

The Contractor will allow for the risk of failure in the electrical supply or in case of an insufficient supply, in which case he will make his own arrangements and all costs that may arise shall be for his own account.

Scaffolding & Hoisting Equipment

The Contractor will provide for the supply, erection and removal of scaffolding and / or hoisting equipment as required.

Tools, Equipment & Machinery

The Contractor will provide all his own tools and equipment as well as facilities and transport for this project. Machinery should be sufficient to complete the works in the allocated time.

Existing Services

If the Contractor encounters any existing services such as cables, pipes or sewers during the execution of the works, he must immediately notify the Client, halting all work in the vicinity thereof, until instructions to proceed have been given by the Project Manager.

Electric wires, telephone wires, pipes, etc. will not be interfered with during the course of the contract but if it should be necessary to disconnect or cut any such wires or pipes, the Client will be advised thereof and his instruction awaited.

Accounts and Payments

Payment of accounts received by the Client in terms of the works completed, shall be affected within 30 days after receipt of a correctly completed and approved invoice for the work module. The Client does not accept responsibility for delays in payment due to faulty accounts or paperwork.

Payments will be made at most on a fortnightly basis and will only be made for work done/completed. Payment will be based upon a completed payment schedule which will be completed by bidder on award of tender. Payments will only be made upon physical inspection and sign off of completed work. Please allow timeous notice for inspections so that the necessary travel arrangements can be made.

Public Liability Insurance

The Supplier shall put in place and maintain for the duration of the Contract general liability insurance to a value of R5 million (Five Million) per claim to cover both the Purchaser and the Supplier for liability arising from death or injury of a person, or loss or damages to property caused by the execution of the Contract. The number of claims shall be unlimited for the duration of the Contract

Inspections, tests and analysis

All pre-bidding testing will be for the account of the contractor.

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If it is a bid condition that supplies to be produced or services to be rendered should at any stage during production or execution or on completion be subject to inspection, the premises of the contractor shall be open, at all reasonable hours, for inspection by a representative of the Client or an organization acting on behalf of the Client.

If there are no inspection requirements indicated in the bidding documents and no mention is made in the contract, but during the contract period it is decided that inspections shall be carried out, the Client shall itself make the necessary arrangements, including payment arrangements with the testing authority concerned.

If the inspections, tests and analyses show the supplies to be in accordance with the contract requirements, the cost of the inspections, tests and analyses shall be defrayed by the Client.

Where the supplies or services do not comply with the contract requirements, irrespective of whether such supplies or services are accepted or not, the cost in connection with these inspections, tests or analyses shall be defrayed by the contractor.

Supplies and services which do not comply with the contract requirements may be rejected.

Any contract supplies may on or after delivery be inspected, tested or analysed and may be rejected if found not to comply with the requirements of the contract. Such rejected supplies shall be held at the cost and risk of the contractor who shall, when called upon, remove them immediately at his own cost and forthwith substitute them with supplies which do comply with the requirements of the contract. Failing such removal, the rejected supplies shall be returned at the contractors cost and risk. Should the contractor fail to provide the substitute supplies forthwith, the Client may, without giving the supplier further opportunity to substitute the rejected supplies, purchase such supplies as may be necessary at the expense of the contractor.

The provisions of above clauses regarding inspection & testing shall not prejudice the right of the Client to cancel the contract on account of a breach of the conditions thereof, or to act in terms of the conditions of contract

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CBD 4

Signature of bidder	
Date	

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NOTES (applicable where indicated)	
A. PRICE (where applicable)	
1. FIRM PRICES - Only firm prices will be accepted. - All delivery cost must be included in the bid price for delivery at prescribed destination. - In cases where different delivery points influence the pricing, a separate pricing schedule must be submitted for each delivery point.	
B. CONSTRUCTION (applicable to construction only)	
- The total price for the service must include all labour and material required for the proper execution of the work as described in the Scope of Works and as per Engineers drawings (where applicable). - The tender will be evaluated on the criteria for a market related price. - The contractor must attach a detailed and comprehensive proof of competency of a construction manager in terms of Construction Regulations 2014, Clause 8 including experience regarding construction health & safety regulations. - The contractor must attach the proof of CIBD grading as specified in the scope of works. - The contractor must be in possession of a valid COIDA letter of good standing and it must be attached. - Where applicable, the contractor must attach valid proof or registration with the Department of Labour for the installation of the main electrical supply.	
C. OTHER NOTES (applicable to all bids)	
- The tender will be evaluated on the criteria for a market related price. - The full cost of the service and/or works must be indicated and may not be discounted or cross subsidised against another service, project, transaction or sale of goods. Such contributions against the total project cost must be specified, itemised, costed and clearly indicated in the bid. - The prices must be valid for a period of 90 days from date of closure of the bid to allow for evaluation and appointment. Casidra SOC Ltd retains the right to amend financial/accounting calculations and to accept the amended amount as the new bid amount.	
D. COMPANY PROFILE (applicable when requested)	
- The contractor must attach a detailed and comprehensive company profile including core competencies of personnel. The company profile must summarize information about the organisation. - The company profile must include the following: - Company core business activities (describe products and services and markets in which it operates). - Company background (state number of years in business, location, history of company etc.) - Company resources (number of employees, core competencies of personnel, structure of company)	
E. WARRANTY (applicable when requested)	
Where requested, the bidder must attach proof of warranty offered on the letterhead of the bidder.	
F. BROCHURE (applicable when requested)	
- Bidder must provide detailed brochure and technical specifications of products where requested. - Bidder must be able to provide proof of service location within applicable radius as specified in CBD 3 (Scope of works).	
G. AFTER SALES SERVICES AGREEMENT (applicable when requested)	
Where applicable, the bidder must sign and submit the after sales agreement.	
H. APPOINTMENT (applicable to construction and professional services)	
- The successful contractor will be given notification in writing by means of an appointment letter - The successful contractor must sign a separate service level agreement, together with this document, which will form the contract.	

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CHANGES MADE BY BIDDER

If the bidder wishes to make any changes to any of the bid conditions or specifications, or wishes to qualify this bid in any way, it must be clearly set out below. Any changes made and not listed, will disqualify a bid.

Any changes made by the bidder outside the scope of works, resulting in not meeting pre-qualifying conditions or compulsory subcontracting, may influence the functionality of the end product and may result in the bid being disqualified.

[illegible]

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PROOF OF REFERENCES (COMPULSORY)

Supply at least **three (3)** different references letters from **three (3)** different companies with contact numbers

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PROOF OF RELEVANT EXPERIENCE (COMPULSORY)

Provide detailed list of completed projects with contact numbers regarding irrigation and solar projects completed as well as monetary value

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SCHEDULE: DETAILED COMPANY PROFILE (COMPULSORY)

The contractor must attach to this page a DETAILED & COMPREHENSIVE company profile including core competencies of personnel. The company profile must summarize information about your organisation. In order for a company profile to be compliant for this bid, the following detail MUST be included in the company profile.

- Company core business activities – Describe your products and services and markets in which you operate
- Company background – State number of years in business, location, history of company, etc
- Company resources – Number of employees, core competencies of personnel, structure of company - organogram

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COMPENSTATION OCCUPATIONAL FOR INJURIES AND DISEASES ACT (COIDA)
LETTER OF GOOD STANDING (COMPULSORY)

The bidder must attach to this page a valid letter of good standing

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COMISSION INDUSTRY DEVLEOPMENT BOARD GRADING (COMPULSORY)

The contractor must attach to this page a copy of their **CIDB grading of 3EP** or higher

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PUBLIC LIABILITY INSURANCE (COMPULSORY)

Provide a Public Liability Insurance to the Value of R5m

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SCHEDULE: CONSTRUCTION MANAGER COMPETENCY (COMPULSORY)

The contractor must attach to this page DETAILED & COMPREHENSIVE proof of competency of a construction manager in terms of Construction Regulations 2014 Clause 8.

Please attach a complete CV for evaluation purposes relevant to this occupation of Construction work.
Please also supply this particular person's experience regarding construction health & safety regulations.

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SUPPLY CHAIN MANAGEMENT		
PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022 AND CODES OF GOOD PRACTICE		
Only for use of bids from R2 000 to maximum of R50 million		
Casidra, as a Schedule 3D development and implementation agent for the Western Cape Provincial Government underwrites, and complies with the Provincial and National developmental initiatives and administers funds on behalf of donors. Within this context, and because of the specific requirements of the donors for the application of the funds, the awarding of bids is dependent on the special evaluation criteria as set out in the policies of Casidra. The evaluation criteria of this Preferential Procurement Policy are based on the “Preferential Procurement Policy Framework (Act 5 of 2000)” and related Regulations. Awarding of the bid is dependent on preferential points system, and every presentation is measured against the specific evaluation criteria as shown. The completion and signature of the document is thus a pre-requisite to qualify as a service provider.		
This preference form must form part of all bids invited. It contains general information and serves as a claim form for preference points for Broad-Based Black Economic Empowerment (B-BBEE) Status Level of Contribution. BEFORE COMPLETING THIS FORM, BIDDERS MUST MAKE SURE OF THE CONTENTS OF THE BROAD BASED BLACK ECONOMIC EMPOWERMENT ACT AND THE CODES OF GOOD PRACTICE WHICH CAN BE FOUND ON: http://www.thedtic.gov.za/financial-and-non-financial-support/b-bbee/broad-based-black-economic-empowerment/ https://www.gov.za/documents/broad-based-black-economic-empowerment-act https://www.bbbeeommission.co.za/		
DEFINITIONS		
1.1	“ affidavit ” is a type of verified statement or showing, or in other words, it contains a verification, meaning it is under oath or penalty of perjury, and this serves as evidence to its veracity and is required for court proceedings;	
1.2	“ B-BBEE ” means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;	
1.3	“ B-BBEE status level of contributor ” means the B-BBEE status received by a measured entity based on its overall performance using the relevant scorecard contained in the Codes of Good Practice of Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;	
1.4	“ EME ” is an Exempted Micro Enterprise with an annual total revenue of R10 million or less;	
1.5	“ Large Enterprise ” is any enterprise with an annual total revenue above R50 million;	
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- 1.6 **QSE** is a Qualifying Small Enterprise with an annual total revenue between R10 million and R50 million;
- 1.7 **“the Act”** means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000);
- 1.8 **“the Regulations”** means the Preferential Procurement Regulations, 2011 and 2022;
- 1.9 **“consortium or joint venture”** means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract;
- 1.10 **“person”** includes a juristic person;
- 1.11 **“sub-contract”** means the primary contractor's assigning, leasing, making out work to, or employing, another person to support such primary contractor in the execution of part of a project in terms of the contract;
- 1.12 **“trust”** means the arrangement through which the property of one person is made over or bequeathed to a trustee to administer such property for the benefit of another person; and
- 1.13 **“trustee”** means any person, including the founder of a trust, to whom property is bequeathed in order for such property to be administered for the benefit of another person;
- 1.14 **“original sworn affidavit”** means the initial document which was not photocopied or electronically reproduced;
- 1.15 **“Original certified B-BBEE certificate”** means the certification of a copy of the B-BBEE certificate confirming the validity of the original document. The stamp of the notary must be **ORIGINAL**.

GENERAL CONDITIONS

- 1.1 The value of this bid is estimated to **not exceed R50 million** (all applicable taxes included) and therefore the 80/20 points system shall be applicable.
- 1.2 Preference points for this bid shall be awarded for:
- Price; and
 - B-BBEE Status Level of Contribution.
- 1.3 The maximum points for this bid are allocated as follows:

POINTS

PRICE	80
B-BBEE STATUS LEVEL OF CONTRIBUTION	20
Total points for Price and B-BBEE	100

- 1.4 Failure on the part of a bidder to fill in, sign this form and submit in the circumstances prescribed in the Codes of Good Practice either a B-BBEE Verification Certificate form issued by a Verification Agency accredited by the South African Accreditation System (SANAS) or by a Registered Auditor approved by the Independent Regulatory Board of Auditors (IRBA) or an affidavit confirming annual total revenue and level of black ownership together with the bid, will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.
- 1.5 The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.
- 1.6 The bidder is responsible to provide **Casidra SOC Ltd** with (refer to 2.2 under POINTS AWARDED FOR PRICE:
- An **original sworn affidavit**
 - An **originally certified B-BBEE certificate**.

ADJUDICATION USING A POINT SYSTEM

- 1.1 Subject to Regulation 7 of the **Casidra SOC Ltd** Financial Regulations and PPR 2022, the bidder obtaining the highest number of total points will be awarded the contract.
- 1.2 Preference points shall be calculated after prices have been brought to a comparative basis taking into account all factors of non-firm prices and all unconditional discounts.
- 1.3 Points scored must be rounded off to the nearest 2 decimal places.
- 1.4 In the event that two or more bids have scored equal total points, the successful bid must be the one scoring the highest number of preference points for B-BBEE.

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- 1.5 However, where functionality criterion forms part of the bid and is part of the evaluation process, and two or more bids have scored equal points including equal preference points for B-BBEE, the successful bid must be the one scoring the highest score for functionality.

POINTS AWARDED FOR PRICE

THE 80/20 PREFERENCE POINT SYSTEM

1. A maximum of 80 points is allocated for price on the following basis:

$$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where

P_s = Points scored for price of tender under consideration

P_t = Rand value of offer tender consideration

$P_{\min}$ = Rand value of lowest acceptable tender

2. A maximum of 20 points will be awarded for B-BBEE status level of contribution:

- 2.1. In terms of Regulations 5(2) of the Regulations preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level on Contributor	Number of points	Points awarded (for office use only)	BEE recognition level
1	20	EME & QSE 100% Black owned	135%
2	18	EME & QSE 51% + Black	125%
3	14		110%
4	12	EME 51% < Black owned	100%
5	8		80%
6	6		60%
7	4		50%
8	2		10%
Non-compliant contributor	0		0%

- 2.2. B-BBEE requirements:

An **EME** must submit a valid, fully completed, **original, certified, dated and signed sworn affidavit** (no photostat copies of certification allowed) confirming annual turnover and level of black ownership or an affidavit issued by Companies Intellectual Property Commission (accounting officer for a Closed Corporation).

If a **startup EME**, a **clear, originally certified copy**, of B-BBEE certificate issued by the CIPC for EME's only is accepted.

A **QSE that is less than 51% (50% or less) black owned** must be verified in terms of the QSE scorecard issued via Government Gazette and submit a **clear, valid, originally certified copy** of a B-BBEE Verification Certificate issued by SANAS.

A **QSE that is at least 51% black owned (51% or higher)** must submit an **original, certified, dated and signed sworn affidavit** confirming turnover and level of black ownership as well as declare its empowering status or an affidavit issued by Companies Intellectual Property Commission.

A **large enterprise** must submit a **clear, valid, originally certified copy** of a B-BBEE Verification Certificate issued by a verification agency accredited by SANAS.

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A trust, consortium or joint venture, will qualify for points for their B-BBEE status level as a legal entity, provided that the entity submits their B-BBEE status level certificate. A trust, consortium or joint venture (including unincorporated consortia and joint ventures) must submit a consolidated B-BBEE status level verification certificate for every separate tender. Tertiary institutions and public entities will be required to submit their B-BBEE status level certificates in terms of the specialized scorecard contained in the B-BBEE Codes of Good Practice.
3. Bids of non-compliant contributors (where no certificate was submitted) will be considered but no points will be awarded for B-BBEE status.

SUB-CONTRACTING		
1.1. Will any portion of the contract be sub-contracted: (<i>Tick applicable box</i>)	Yes ☐	No ☐
1.2. If YES, INDICATE:		
a. What percentage of contract will be subcontracted?		
b. The name of the subcontractor		
c. B-BBEE status level of the sub-contractor		
d. Is sub-contractor EME or QSE	Yes ☐	No ☐
e. Attach the originally certified B-BBEE certificate/ original sworn affidavit as proof.		

MARKET RELATED PRICING		
If a bidder, whose tender is compliant and received the highest overall points, do not offer a market related price, the offer may be negotiated with that bidder to be market related.		
Are you willing to negotiate your offer?	Yes ☐	No ☐

SUPPLY CHAIN PERFORMANCE MEASUREMENT	
In order for Casidra to measure its supply chain efficiency and effectiveness, please assist us by answering the following questions:	
What were the source that made you became aware of this bid being available.	
Personal Email invite to bid:	☐
Via a friend or business partner:	☐
National Government E-Tender website:	☐
Local Newspapers:	☐
Casidra own website:	☐
CIDB website	☐
Other (specify)	☐

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- Was the time allowed to date of closure sufficient for you to compile an offer?

No – too short ☐	Yes – Sufficient ☐	No - Too long ☐
---	---	--

I, _____

as the authorised representative of the company / CC / business hereby declare that, to the best of my knowledge the abovementioned information is true and correct and that I am duly authorized as a signatory of this bid. On behalf of my business, I accept the terms and conditions as set out in this document. I will supply documentary proof of any information supplied herein on request and to the satisfaction of **Casidra**.

In terms of the POPI Act I further give consent that my contact and company details as will be captured on the **Casidra** database may be shared with the role players/funders involved in the project and be used by **Casidra** for the purpose of further procurement.

Signature	
Date	

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BIDDER'S DISCLOSURE**1. PURPOSE OF THE FORM**

- 1.1 Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa, 1996 (Constitution), and further expressed in the various applicable legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.
- 1.2 If a person is listed in the Register for Tender Defaulters and/or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

2. DECLARATION ON EMPLOYMENT BY ORGAN OF STATE

- 2.1 Is the bidder, or any of the directors / trustees / shareholders / members / partners of the bidder employed by an organ of state, as defined in section 239 of the Constitution? **YES/NO**
- 2.2 If YES, furnish particulars of the names, individual identity numbers, in the table below:

Full Name	Identity Number	Name of organ of state

- 2.3 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? **YES/NO**

- 2.3.1 If so, furnish particulars:

.....

.....

- 2.4 Does the bidder or any of its directors/trustees/shareholders members/partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise, whether or not they are bidding for this contract?
YES/NO

- 2.4.1 If so, indicate all companies registered in the CSD in the table below:

Supplier registration number (MAAA)	Status (active/inactive/deleted)

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Failure to disclose all CSD-registered active companies linked to all Directors will lead to disqualification.

3 GENERAL DECLARATION

I,, the undersigned, in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

- 3.1 I have read and I understand the contents of this disclosure.
- 3.2 I understand that the accompanying bid will be disqualified if this disclosure is found to be false.
- 3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor.
- 3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.
- 3.5 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
- 3.6 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.
- 3.7 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act, 1998 (Act No. 89 of 1998) and or may be referred to law enforcement agencies for criminal investigation and or may be restricted from conducting business with the state for a period not exceeding 10 years in terms of the Prevention and Combating of Corrupt Activities Act, 2004 (Act No. 12 of 2004) or any other applicable legislation.

I CERTIFY THAT THE ABOVE IS CORRECT.

I ACCEPT THAT THE PROCURING INSTITUTION MAY REJECT THE BID OR TAKE APPROPRIATE ACTION AGAINST ME IF THIS DECLARATION IS FALSE.

.....
Signature

.....
Date

.....
Designation

.....
Name of bidder

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BID NO: 15/2026

OCTOBER 2026

BASELINE RISK ASSESMENT REPORT

A baseline risk assessment focuses on the identification of risk that applies to the whole project. The purpose of conducting a baseline risk assessment is to establish a risk profile.

This is an initial risk assessment that focuses on a broad overview in order to determine the risk profile to be used in subsequent risk assessments. It is performed to obtain a benchmark of the types and size of potential hazards, which could have a significant impact on the whole project and all stakeholders.

The stakeholders need to identify the major and significant risks, then prioritise these risks and evaluate the effectiveness of current systems for risk control.

The risks for the above project which have been identified have been highlighted under the following categories: -

1. Scope of work (what is being built?)

This project consists of the following elements:

- Installation solar system to the existing Pallet Machine System.
- Installation of solar system to the existing 8 ha Centre Pivot System.

2. Location of site and elements specific to the location (municipal by-laws, weather factors, geographical factors)

Wupperthal normally receives about 600 - 800mm of rain per year and because it receives most of its rainfall during winter. It receives the lowest rainfall (28mm) in January and the highest (47mm) in June. The monthly distribution of average daily maximum temperatures shows that the average midday temperatures for Wupperthal range from 28°C to 38°C and extreme peaks reaching up to 40°C in November to March.

3. Geo- technical risks (conditions of the soil, raise any concerns that may hinder the project progress)

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The site consists of sandy soil conditions, during high rainfalls, the soil can be waterlogged.

4. Environmental risks (This is the actual or potential threat of adverse effects on living organisms and environment by effluents, emissions, wastes, resource depletion, etc. involved in the construction phase)

Due to the site being in an environmental area there is always the risk for soil, groundwater and surface water pollution and contamination when using mechanical plant, fuel and pesticides. It will also not be allowed to dispose of any kind of waste by burying it on site.

5. Risk assessments based on scope of work (Is this a high rise building in a built-up area? Is it working in a flood plain and/or river with eroded soil conditions?)

Due to the nature of the works, there is risk of maintaining structural stability during excavations. Dangers presented are the collapse of excavations, falling or dislodging material and falling into excavations.

The erection of steel framework presents its own dangers on both the erection of heavy steel sections and installation of roof plastics, especially at height. Care must be taken during the erection process with mechanical equipment working in close proximity to site labor force.

Working at height poses risks of falling, material/tools dropping down damaging infrastructure and/or personnel. People are struck by material falling from loads being lifted and material that rolls or is kicked off work platforms; others are struck or buried by falling materials. Structures under construction may also collapse, eg steel frames that have not been adequately braced, or formwork that is prematurely loaded.

6. Equipment Risks.

The equipment risks associated with this project is as follows:-

It is envisaged that this will be both a mechanized and labour job. There will be mechanized earth moving equipment in close proximity to people, infrastructure, and surrounding environment.

7. Material Risks.

The following could pose risks associated with the project:-

- Flammable materials such as diesel/petrol in a highly flammable environment.
- Inhalation of poison or being in contact with skin
- Care must be taken not to dispose of any material by burning

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8. Ergonomic Risks (Ergonomic hazards refer to workplace conditions that pose the risk of injury to the musculoskeletal system of the worker).

Cold conditions. Dangers associated with pneumonia. During winter season.

Manual handling

Lifting heavy and awkward loads causes back and other injuries. Some injuries can result from a single lift, but more commonly, long-term injury develops as a result of repeated minor injury due to repetitive lifting.

Noise and vibration

High levels of noise can cause hearing loss and repeated use of vibrating tools can cause hand-arm vibration syndrome (damage to nerves and blood vessels – most commonly in the hands and fingers).]

Chemicals

Exposure to materials such as cement and solvents can cause skin problems such as dermatitis.

9. Controls specific to client requirements (two day induction, pink overalls, entrance to existing premises, etc.).

N/A

RISK OVERVIEW CHART FOR PROJECT:

RISK CATEGORY	RISK FACTOR	ASSOCIATED RISK	RISK PROBABILITY FACTOR (1-5) 1 being low 5 being very high
LOCATION	Cool temperatures	Pneumonia	2
GEOGRAPHICAL	Very dry sandy soil and rocky	Windstorms and risk of collapse of ground when excavating or open excavations	3
ENVIRONMENTAL	Dust pollution	Dust will affect both neighboring & current farmers crops	3
	Soil contamination	Risk of pollution to	3

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	High winds	ground by contaminants Risk of damage to construction materials and risk of being blown off structure	4
SCOPE OF WORK	Structural stability	Risk that people be killed or seriously injured by collapses and falling materials while working in excavations	3
	Working at Heights	Risk of falling material and/or personnel	5
	Site enclosure	Risks to public if not managed and implemented	4
EQUIPMENT	Mechanised plant working with labour	Risk of injury to labour force due to close proximity	5
MATERIAL	Flammable material	Dangerous to work with and to store	3
ERGONOMIC	Manual handling	Lifting of heavy equipment	4
	Noise/Vibration	High noise levels	4
	Chemicals	Exposure to chemicals	4
	Heat	Heat exhaustion	4
CLIENT REQUIREMENTS	Working times	No work is to be done after 17h00 at night	3

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Please find below risk assessment template which can be used by the contractor to manage the above identified risks.

Risk assessment							
Title:							
Company name:			Date assessment was carried out:				
Assessment carried out by:			Date of next review:				
Risk assessment Activity or area	What are the hazards?	Who might be harmed and how?	What are you already doing?	What further action do you need to take?	Who needs to carry out the action?	When is the action needed by?	Done

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BID NO: 15/2026

WUPPERTHAL: SMITHSTONE FARMING: SUPPLY OF MATERIAL AND INSTALLATION OF NEW SOLAR PANELS WITH BACKUP BATTERIES

OCTOBER 2026

OCCUPATIONAL HEALTH & SAFETY SPECIFICATION

In terms of the Construction Regulations 2014 Regulation 5, a baseline risk assessment for the intended works is required to be done by the Client for each specific construction site.

This risk assessment will inform the site-specific Occupational Health and Safety specifications that must be supplied to the designer, who will supply any design specifications to be added and then supplied to the prospective Contractor (Bidder) as part of the tender documents. This specification must be translated into actions and preventative risk management measures by the Contractor that will form part the Occupational Health and Safety Plan of the Contractor.

This specification forms an integral part of the contract, and the Contractor is required to use it at pre-tender phase to make sufficient provision for related costs for risk management and after award of tender for the purpose of drawing up its project-specific construction phase health and safety plan.

It is the responsibility of the Contractor in the bidding process to:

- ensure that he include adequate provision for the cost for health and safety measures in his bid and
- Provide proof and include in his cost the necessary competencies and resources to perform the work safely.

The risks for the above project which have been identified, evaluated and resulted in the following specifications that are highlighted under the following categories: -

This specification does not replace the requirement of the Contractor to comply to all relevant legislation and the regulations of the Occupational Health and Safety Act, but just highlight the specific identified and relevant risk factors that need special mention and attention by the Contractor in his bid.

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1. General administrative requirements

DESIGNATION	NAME	CONTACT NO's	ADDRESS	RESPONSIBLE PERSON
Project Client	Casidra SOC	021 863 5000	22 Louws Avenue Southern Paarl 7624	N. Tsama Project Manager
Department of Labour	Department of Labour Cape Town	021 441 8000	Westbank House, West Bank Building, Riebeeck Street & Long St, Cape Town City Centre, Cape Town	N/A
Municipality	Cederberg Municipality	027 482 8000 / 027 482 8016	2A Voortrekker road, Clanwilliam	N/A
Project Funder	Department of Agriculture	021 808 5000 (tel)	ELSENBURG – HEAD OFFICE Muldersvlei Road, ELSENBURG, 7607	N/A

2. Scope of work (what is being built?)

This project consists of the following elements:

- Installation solar system to the existing Pallet Machine System.
- Installation of solar system to the existing 8 ha Centre Pivot System.

3. Location of site and elements specific to the location (municipal by-laws, weather factors, geographical factors)

What is the risk?	Cold and rain
Hazard Identification?	High temperatures together with high wind factor.
Who will be injured & mechanism of injury?	All personnel working on site. Possible injury will vary from pneumonia and or broken ankles from muddy soil.
Preventative action recommended	
Description	Category: Reduction/transfe r/control/avoidan ce
• Monitor weather for worsening soil conditions on daily basis. When conditions underfoot do not assist with mechanical and/or personnel, call site off until conditions improve • Ensure for shade and sufficient water onsite for high	Risk reduction/control

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temperatures.	
Ensure temperature is monitored and call site off with WGT of 40 and higher	

What is the risk?	Wind
Hazard Identification?	High winds are experienced in the area and danger of falling off temporary and/or permanent structures
Who will be injured & mechanism of injury?	All personnel working at height. Possible injury will vary from dislocation, broken bones to death by falling.
Preventative action recommended	
Description	Category: Reduction/transfer/control/avoidance
- All temporary structures to be designed and erected to withstand high winds. All fall protection must be in place before workers can access platforms - Subcontract temporary platform erection to a specialist and they then bear all responsibility of erected temporary platforms - All people working at heights must have a harness. - Install wind meter on site with siren warning for wind speeds above 40km/h. Work at heights will stop until wind subsides	- Risk reduction/mitigation - Risk transfer - Risk control - Risk avoidance

4. Geo- technical risks (conditions of the soil, raise any concerns that may hinder the project progress)

What is the risk?	Soil conditions
Hazard Identification?	Sandy soil conditions and soggy when wet
Who will be injured & mechanism of injury?	Infrastructure damage, damage to earthmoving equipment and personnel injury will vary from dislocation, broken bones to death
Preventative action recommended	
Description	Category: Reduction/transfer/control/avoidance
This is specialized work that requires competent human resources that are adequately skilled in working with locating unknown services and dealing with them when located. Heavy and dangerous machinery in loose sandy soil conditions when also require skill set.	Risk control

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5. Environmental risks (This is the actual or potential threat of adverse effects on living organisms and environment by effluents, emissions, wastes, resource depletion, etc involved in the construction phase)

What is the risk?	Soil contamination
Hazard Identification?	Risk of pollution to ground and river by its contaminants
Who will be injured & mechanism of injury?	Environment and this invariably fall over to communities, which then in affect the members of the public
Preventative action recommended	
Description	Category: Reduction/transfe r/control/avoidan ce
Maintenance and service areas should be demarcated during site establishment and all maintenance and service activities contained so as to avoid any contamination of soil and / or water. All vehicles, equipment, fuel and petroleum services and tanks should be maintained in a good condition that prevents leakage and possible contamination of soil or water supplies. Refueling areas should be bunded and lined to prevent spilled fuels and oils from contaminating the ground or water. It is suggested that as a minimum, sandbags should be placed surrounding the bulk fuel supply tank. The floor of the area is to be lined with plastic and a layer of sand of approximately 50mm is placed on top of the plastic. Automatic shut-off nozzles are recommended on all dispensing units. The park and service area should be treated with a suitable hydrocarbon absorption or remediation product. Absorbent spill mop-up products should to be on hand. All servicing should be done with a drip tray present 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.) should be established. All spills to be immediately contained, reported to the Project Manager, and dealt with.	Risk control/ reduction

What is the risk?	Snakes
Hazard Identification?	Being bitten by snakes
Who will be injured & mechanism of injury?	Personnel working on site
Preventative action recommended	
Description	Category: Reduction/transfe r/control/avoidan

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	ce
As the work entails working in dense brush and biomass areas, the risk of disturbing a snake is very high. Make sure that all personnel are made aware of the increased risk of the presence of snakes. Wear proper protective clothing to protect against snake bites. An increased awareness and alertness is the best protection, the snake will not be looking for you, so watch for it. If a snake is seen or reported on site, note the area of the snake and work in this area stops until the hazard is removed. DO NOT approach, attack or otherwise provoke the snake as 95% of those bitten have done this. REMEMBER - IF PROVOKED IT WILL STRIKE. If bitten, the following procedures should apply: 1.Immediately apply a broad firm bandage around the limb and on the bitten area. It should be as tight as one would bind a sprained ankle. As much of the limb should be bandaged as possible. Bind from below upwards. Crepe bandages are ideal, but any flexible material can be used, eg tear up clothing or old towels into strips. Panty hose is satisfactory. 2.Keep the limb and the victim as still as possible. Splint the limb. 3.Bring transport to the victim if possible. 4.Leave the bandage and splint on until medical care is reached. Don't cut or excise the bitten area. Don't apply an arterial tourniquet. Don't wash the bitten area. The snake involved may be identified by the detection of venom on the skin.	Risk reduction/control/avoidance

What is the risk?	Bees
Hazard Identification?	Being stung by bees
Who will be injured & mechanism of injury?	Personnel working on site
Preventative action recommended	
Description	Category: Reduction/transfer/control/avoidance
Upon finding a bee hive/nest, do not try to get rid of the nest or hive yourself. Each type of insect or situation will likely need different	Risk avoidance/control/r

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removal methods. It is best to call pest control professionals for this service. Upon being stung, most people experience local effects like pain, swelling, itching, and redness around the sting site. In rare cases, a severe allergic reaction can occur. This situation is serious and can cause "anaphylaxis" or anaphylactic shock. Symptoms of anaphylaxis can appear immediately (within minutes) or up to 30 minutes later. Symptoms to watch for include: • hives, itching and swelling in areas other than the sting site, • swollen eyes and eyelids, • wheezing, • tightness in the chest and difficulty breathing, • hoarse voice or swelling of the tongue, • dizziness or sharp drop in blood pressure, • shock, • unconsciousness or cardiac arrest. Although most deaths result from severe allergic reactions, some are caused by direct toxicity of the insect venom. Of those who die from a severe allergic reaction to a sting, half die within 30 minutes, and three-quarters within 45 minutes. If you see any signs of reaction, or even if you are not sure, call or have a co-worker call emergency medical services right away. Also, get medical help if the sting is near the eyes, nose or throat. People who have been stung multiple times (such as when fleeing from a swarm or nest) can sometimes suffer serious health effects. While rare, death may occur. Employers should be notified if a worker, especially one who works outdoors, has allergies to insect stings. Co-workers should be trained in emergency first aid, be aware of the signs of a severe reaction, and know how to use the bee sting kit (self-injectable epinephrine). Always carry a cellular phone in case you need emergency medical help. The best way to prevent stings is to avoid the insects. Leave the area, if possible. If there is a travelling swarm, they will likely leave within a few days. Note that insect repellent ("bug spray") does not affect these stinging insects. Avoidance and awareness are the keys to not being stung. Before working at a site: • Take a look around. Check to see if there are any visible signs of activity or a hive or nest. If you see a number of insects flying around, check to see if they are entering/exiting from the same hole or place. If so, it is likely a nest or a source of food. • Wear long sleeve shirts, and long pants. If you cannot avoid working near bees or wasps, wear a bee-keepers style hat with netting to cover	education/transfer
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	your head, neck and shoulders. Tape your pant legs to your boots/socks, and your sleeves to your gloves. You may also wish to wear an extra layer of clothing since wasp stings are long enough to reach through one layer of clothing. • Power tools such as lawnmowers, weed eaters and chainsaws will aggravate the insects. When using these tools, be aware that the tools may provoke the insects or in some cases, cause the insects to swarm. If you find you are working near stinging insects, here are some tips. • Most bees and wasps will not sting unless they are startled or attacked. Do not swat at them or make fast movements. The best option is to let the insects fly away on their own. If you must, walk away slowly, or gently "blow" them away. The only exception is if you have disturbed a nest and hear "wild" buzzing. Protect your face with your hands and run from the area immediately. • Wear light-colored clothes such as khakis, beige, or blue. Avoid brightly coloured, patterned, or black clothing. • Tie back long hair to avoid bees or wasps from getting entangled in your hair. • Be careful when shaking out clothing or towels as the insects could be inside the folds. • If you find a bee or wasp in your car, take a thick cloth and cover the insect before it gets frightened. Carefully, let the insect back outside through an open window. DO NOT • Do not wear perfumes, colognes, scented soaps, or powders as they contain fragrances that are attractive. • Do not go barefoot or wear sandals, especially in areas where there is clover or other flowering plants that attract bees.	
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6. Risk assessments based on scope of work (Is this a high rise building in a built-up area? Is it working in a flood plain and/or river with eroded soil conditions?)

What is the risk?	Structural stability
Hazard Identification?	Unstable working platforms could cause risk of collapse on

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	trenches. Risk of excavations collapsing and burying or injuring people working in them; material falling from the sides into any excavation; and people or plant falling into excavations
Who will be injured & mechanism of injury?	Risk that people be killed or seriously injured by collapses and falling materials while working in excavations
Preventative action recommended	
Description	Category: Reduction/transfer/control/avoidance
<u>COLLAPSE OF EXCAVATIONS</u> Temporary support – Before digging any trench pit, tunnel, or other excavations, decide what temporary support will be required and plan the precautions to be taken. Make sure the equipment and precautions needed (trench sheets, props, baulks etc) are available on site before work starts. Battering the excavation sides – Battering the excavation sides to a safe angle of repose may also make the excavation safer. In granular soils, the angle of slope should be less than the natural angle of repose of the material being excavated. In wet ground a considerably flatter slope will be required <u>FALLING OR DISLODGING MATERIAL</u> Loose materials – may fall from spoil heaps into the excavation. Edge protection should include toeboards or other means, such as projecting trench sheets or box sides to protect against falling materials. Head protection should be worn. Undermining other structures – Check that excavations do not undermine scaffold footings, buried services or the foundations of nearby buildings or walls. Decide if extra support for the structure is needed before you start. Surveys of the foundations and the advice of a structural engineer may be required. Effect of plant and vehicles – Do not park plant and vehicles close to the sides of excavations. The extra loadings can make the sides of excavations more likely to collapse. <u>FALLING INTO EXCAVATIONS</u>	Risk reduction/avoidance

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Prevent people from falling – Edges of excavations should be protected with substantial barriers where people are liable to fall into them. To achieve this, use: • Guard rails and toe boards inserted into the ground immediately next to the supported excavation side; or • fabricated guard rail assemblies that connect to the sides of the trench box • the support system itself, eg using trench box extensions or trench sheets longer than the trench depth. <u>INSPECTION</u> A competent person who fully understands the dangers and necessary precautions should inspect the excavation at the start of each shift. Excavations should also be inspected after any event that may have affected their strength or stability, or after a fall of rock or earth. A record of the inspections will be required and any faults that are found should be corrected immediately.	
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Who will be injured & mechanism of injury?	Public will be injured and/or killed	
Preventative action recommended		
Description		Category: Reduction/transfer/control/avoidance
Construction work should be fenced off and suitably signed. This will protect people (especially children) from site dangers and the site from vandalism and theft. Site access should be monitored and controlled and all access routes should be clearly demarcated. A constant regard must be taken to safety and dangerous areas and should be adequately cordoned off to prevent accidental injury. Temporary fencing/hoarding with appropriate warning signs must be in place. Make sure there is a system to ensure necessary precautions are kept in place during working hours and that night-time and weekend protection is put in place as required before the site closes		

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What is the risk?	Working at heights
Hazard Identification?	Risks of falling material, tools & personnel
Who will be injured & mechanism of injury?	People/Infrastructure being struck by falling material & tools causing injury or even death. The same for personnel falling from heights.
Preventative action recommended	
Description	Category: Reduction/transfer/control/avoidance
Avoid working at heights where you can. Use work equipment to prevent falls where work at height cannot be avoided. Where the risk of a fall cannot be eliminated, use work equipment to minimize the distance and consequences of a fall should one occur. Always consider measures that protect all those at risk, ie ■ collective protection measures (scaffolds, nets, soft landing systems) before measures that only protect the individual, ie personal protection measures (a harness). Ensure work is carried out only when weather conditions do not jeopardise the health and safety of the workers. Suitable precautions must be taken to prevent falls. General access scaffolds provide a means of working at height while preventing falls and should be provided whenever practicable. Scaffolds should be designed, erected, altered and dismantled only by competent people and the work should always be carried out under the direction of a competent supervisor. Ensure the scaffold is based on a firm, level foundation. The ground or foundation should be capable of supporting the weight of the scaffold and any loads likely to be placed on it. Ensure it is braced and tied into a permanent structure or otherwise stabilised.	Risk reduction/avoidance/control

7. Equipment Risks

What is the risk?	Heavy Mechanized equipment
Hazard Identification?	Close proximity to labour force on ground working together in combined operations gives risk of collision
Who will be injured & mechanism of injury?	Infrastructure damage, damage to plant equipment/constructed items and personnel injury will vary from dislocation, broken bones to death
Preventative action recommended	
Description	Category:

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	Reduction/transfer/control/avoidance
This is specialized work that requires competent human resources that are adequately skilled in working with heavy and dangerous equipment. Guidelines and practical advice to all work operations to ensure effective and proper management of working with mechanical plant must be in place. Toolbox talks MUST make all personnel aware of the dangers. Equipment must be checked for proper working controls such as reverse warning sirens, etc. Make sure equipment is in good working order each and every day and before every single operation. All workers should wear bright protective clothing and signs that are highly visible.	Risk Control

8. Material Risks.

What is the risk?	Storage of materials
Hazard Identification?	Tripping/ Flammable materials igniting
Who will be injured & mechanism of injury?	Material/Infrastructure & personell
Preventative action recommended	
Description	Category: Reduction/transfer/control/avoidance
Designate storage areas for plant, materials, waste, flammable substances (eg foam plastics, flammable liquids and gases such as propane) and hazardous substances (eg pesticides and timber treatment chemicals). Flammable materials will usually need to be stored away from other materials and protected from accidental ignition. Do not store materials where they obstruct access routes or where they could interfere with emergency escape, eg do not store flammable materials under staircases or near to doors or fire exits. If materials are stored at height (eg on top of a container or on a scaffold gantry), make sure necessary guard rails are in place if people could fall when stacking or collecting materials or equipment. Keep all storage areas tidy, whether in the main compound or on the site itself. Try to plan deliveries to keep the amount of materials on site to a minimum. Waste materials also need storing safely before their removal from the site and make sure that you allow sufficient space for waste skips and bins.	Risk Control

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What is the risk?	Flammable material
Hazard Identification?	Dangerous to work with and store for prevention of fires
Who will be injured & mechanism of injury?	Infrastructure damage and injury or death to all persons
Preventative action recommended	
Description	Category: Reduction/transfe r/control/avoidan ce
Fuels and flammable materials should be stored in suitably equipped storage areas demarcated within the Contractor's camp. These areas must comply with general fire safety requirements. No fuel may be stored within drainage lines or areas. Impervious lining materials should be used in these storage areas to prevent contamination of the ground in the event of spillages or leaks, and automatic shut-off nozzles should be used on all dispensing units. Quantities of fuels and flammable/hazardous materials stored on site should be appropriate to the requirement for these substances on site. Fuels and oils should be safely located out of harm's way from the elements. No fuel / oil containers may be left unattended within drainage areas. All open containers containing used oil, etc., should be kept under roof or have adequate water tight lids. All spills to be immediately contained, reported to the Project Manager and dealt with. Adequate firefighting equipment should be available on site, in good working order, and according to the fire hazard present during construction activities of at least one type ABC all-purpose 12.5kg extinguisher and a water cart with a minimum capacity of 1000 litres for the duration of the contract. Any welding, gas cutting or cutting of metal should only be permitted inside the demarcated working areas for this purpose and these areas should be approved by the Project Manager.	Risk control

What is the risk?	Fire
Hazard Identification?	Flammable materials are always evident on construction site and danger of fire is always constant
Who will be injured & mechanism of injury?	Material/Infrastructure & personnel
Preventative action recommended	
Description	Category: Reduction/transfe

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	r/control/avoidance
Fire can be a particular hazard in refurbishment/new work when there is a lot of dry timber and at the later stages of building jobs where flammable materials such as adhesives, insulating materials and soft furnishings are present. Many fires can be avoided by careful planning and control of work activities. Good housekeeping and site tidiness are important not only to prevent fire, but also to ensure that emergency routes do not become obstructed. Making site rules can help.	Risk reduction/transfer/control/avoidance

9. Ergonomic Risks (Ergonomic hazards refer to workplace conditions that pose the risk of injury to the musculoskeletal system of the worker).

What is the risk?	Health
Hazard Identification?	On-site injuries due to physical construction work taking place
Who will be injured & mechanism of injury?	Personnel suffering ill-health
Preventative action recommended	
Description	Category: Reduction/transfer/control/avoidance
Construction workers are likely to suffer ill health as a result of their work in the industry after exposure to both harsh working conditions and hazardous substances. Assess both immediate risks, eg being overcome by fumes in a confined space, and longer-term health risks. Materials like cement can cause dermatitis. Sensitizing agents like isocyanates can make people using them have sudden reactions, even though they may have used the substance many times before. If harm from the substance is possible, the first step to take is to try and avoid it completely by not using it at all. try and control exposure. Some of the ways this could be done include: Keep containers closed except when transferring; using cutting and grinding tools and blasting equipment fitted with exhaust ventilation or water suppression to control dust; ensuring good ventilation in the working area by opening doors, windows and skylights. The need to provide personal protective equipment (PPE) is also a must and will contribute in minimizing exposure risks. Respirators can protect	Risk reduction/transfer/control/avoidance

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against dusts, vapours and gases. Ear plugs for noise, etc. Where protective clothing is provided (such as overalls and gloves), it must be of the right type to protect the wearer against the particular hazard they are going to encounter. All manufacturers offer advice on the most suitable gloves for specific types of hazard. When using gloves to help prevent dermatitis, users must avoid getting contaminants inside the gloves when putting them on and taking them off. It is also essential to provide washing facilities, with a supply of hot and cold (or warm) running water, soap and a means of drying the hands, to help prevent dermatitis. First aid can save lives, reduce pain and help an injured person make a quicker recovery. Provide adequate and appropriate equipment, facilities and personnel to enable first aid to be given to your employees if they are injured or become ill at work. The minimum provision for all sites is: • a first aid box with enough equipment to cope with the number of workers on site; • an appointed person to take charge of first-aid arrangements; • information telling workers the name of the appointed person or first aider and where to find them.	
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10. Controls specific to client requirements (two day induction, pink overalls, entrance to existing premises, etc).

No work after 17h00 and only on weekdays

11. Personal Protective Equipment (PPE) and Clothing

The principal contractor and other contractors shall ensure that all workers are issued with protective clothing free of charge and make use of the equipment and protection provided such as to wear hard hats, protective footwear, overalls, etc. The Principal Contractor and all Contractors shall make provision and keep adequate quantities of SABS approved PPE on site at all times. The Principal Contractor shall clearly outline procedures to follow when PPE or Clothing is:

- ☐ Lost or stolen;
- ☐ Worn out or damaged

The above procedure applies to Contractors and their Sub-contractors, as they are all employers in their own right, as per section 37 (2) of the Act.

(The general PPE requirements are attached under Annexure A to this document as well as an additional list of PPE for biomass removal is also attached as Addendum B to this specification).

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12. Occupational Health and Safety signage

The Contractor shall provide and maintain adequate on-site OHS signage. Including but not limited to: 'no unauthorised entry', 'report to site office', 'beware of overhead work', 'hard hats, overalls, safety boots, respirators, etc'. Signage shall be posted up at all entrances to site as well as on site in strategic locations e.g. access routes, stairways, entrances to structures and buildings, scaffolding, and other potential risk areas/operations

13. Fences and access

Construction sites in built-up areas or adjacent to public roads must be suitable and sufficiently fenced off and provided with controlled access points to prevent the entry of unauthorised persons.

14. Admittance to site

A notice must be posted up at every entrance to a building site prohibiting the entry of unauthorised persons to such workplace and no person shall enter such a site without the permission of the employer or user as the case may be. In no circumstances may the wording "Enter at Own Risk" be used

15. Speed Restrictions, construction vehicles and Protection

The Principal Contractor shall ensure that all persons in its employment, all Contractors, and all those that are visiting the site are aware and comply with the site speed restriction(s) and route identification for construction vehicles only. Separate vehicle and pedestrian access routes shall be provided, maintained, controlled, and enforced.

16. Hazardous Chemical Substances (HCS)

The Principal Contractor and other relevant Contractors shall provide the necessary training

and information regarding the use, transport, and storage of HCS. The Principal Contractor shall ensure that the use, transport, and storage of HCS is carried out as prescribed by the HCS Regulations. The Contractor shall ensure that all hazardous chemicals on site have a Material Safety Data Sheet (MSDS) on site and the users are made aware of the hazards and

precautions that need to be taken when using the chemicals. The First Aiders must be made

aware of the MSDS and how to treat HCS incidents appropriately.

The below acts are relevant regarding the transporting, storage and application of these agricultural chemicals:-

- Fertilizers, farm feeds, agricultural remedies and stock remedies act, 1947 (Act no. 36 of 1947)
- Hazardous Substances Amendment Act, No. 53 of 1992

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- The South African National Pesticide registration authority registrar: Act no. 36 of 1947

17. Public and Site Visitor Health and Safety

The Principal Contractor shall ensure that every person working on or visiting the site, as well as the public in general, shall be made aware of the dangers likely to arise from site activities, including the precautions to be taken to avoid or minimise those dangers. Appropriate health and safety notices and signs shall be posted up, but shall not be the only measure taken.

The Principal Contractor has a duty in terms of the OHS Act 85/1993 to do all that is reasonably practicable to prevent members of the public and site visitors from being affected by the construction activities.

Site visitors must be briefed on the hazards and risks they may be exposed to and what measures are in place or should be taken to control these hazards and risks. A record of these 'inductions' must be kept on site in accordance with the Construction Regulations.

18. Occupational Hygiene

Exposure of workers to occupational health hazards and risks is very common in any work environment, especially in construction. Occupational exposure is a major problem and all contractors must ensure that proper health and hygiene measures are put in place to prevent exposure to these hazards. Prevent inhalation, ingestion, absorption, and noise induction.

Contractor must identify site-specific health risks for construction. e.g. cement dust, wet cement, wood-dust, noise, etc.

19. Welfare Facilities

The Principal Contractor must supply the following clean, hygienic and maintained facilities:

- Shower facilities, after consultation with employees or employee representative (1 shower for every 15 persons).
- Sufficient toilets (1 toilet per 30 workers) and hand washing facilities. Separate toilets needed for both males and females. Toilet paper must be provided.
- Changing facilities for each sex
- Sheltered eating areas
- Waste bins must be strategically placed and emptied regularly.

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Workers who are far removed from their homes, reasonable and suitable living accommodation for the workers must be provided and adequate transportation between sites and homes where suitable living accommodation is not available.

20. Alcohol and other Drugs

No alcohol and other drugs will be allowed on site. No person may be under the influence of alcohol or any other drugs while on the construction site. Any person on prescription drugs must inform his/her superior, who shall in turn report this to the Principal Contractor forthwith.

Any person suffering from any illness/condition that may have a negative effect on his/her safety performance must report this to his/her superior, who shall in turn report this to the Principal Contractor forthwith. Any person suspected of being under the influence of alcohol

or other drugs must be sent home immediately, to report back the next day for a preliminary inquiry. A full disciplinary procedure must be followed by the Contractor concerned and a copy of the disciplinary action must be forwarded to the Principal Contractor for his records.

21. Other compliance requirements

Notwithstanding the Occupational Health & Safety Act, the contractor must also confirm to the following acts:

- Basic conditions of employment act 75 of 1997
- National Road Traffic Act 93 of 1996
- National Environmental Management: Biodiversity Act, no 10 of 2004
- National Veld and Forest Fire Act, no 101 of 1998.
- Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Amendment act

22. Management control measures and review

23. Risk assessment of the site must be reviewed at least every 30 days. Based on the effectiveness of the existing measures, the safety plan must be adjusted to meet the new or existing identified deficiencies.

24. Electrical Safety

All persons who carry out or arrange for work of any description for Casidra in connection with **electrical apparatus** shall make themselves acquainted with the Occupational Health and Safety Act (Act 85 1993) with particular reference to the Electrical Machinery Regulations, Regulations 1 to 23 inclusive.

The works performed under this contract shall comply in every respect with the latest relevant rules and regulations including following:

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- Occupational Safety and Health Act (OSH Act)
- The South African Bureau of Standards Code of Practice SANS 10142
- Normal requirements laid down by Eskom.
- The latest requirements of the IEC and the British Standard Institute, where no SANS codes of practice exist.
- All rules and regulations issued by local and other authorities having jurisdiction over the contract.

The contractor must, in addition to compliance with the Electrical Installation Regulations, 2009, and the Electrical Machinery Regulations, 1988, promulgated by Government Notice No. R. 1593 of 12 August 1988, ensure that —

- (a) before construction commences and during the progress thereof, adequate steps are taken to ascertain the presence of and guard against danger to workers from any electrical cable or apparatus which is under, over or on the site;
- (b) all parts of electrical installations and machinery are of adequate strength to withstand the working conditions on construction sites;
- (c) the control of all temporary electrical installations on the construction site is designated to a competent person who has been appointed in writing for that purpose;
- (d) all temporary electrical installations used by the contractor are inspected at least once a week by a competent person and that inspection findings are recorded in a register kept on the construction site; and
- (e) all electrical machinery is inspected by the authorized machine operator or user on a daily basis using a relevant checklist prior to use and the inspection findings are recorded in a register kept on the construction site

NOTE:

The Electrical Installation Regulations clause 6 (2) require electrical contractors to register annually.

“(2) Any person who does electrical installation work as an electrical contractor shall register annually in the form of Annexure 3 with the chief inspector or a person appointed by the chief inspector “

In terms of the OHS Act Electrical Installation Regulations, a Certificate of Compliance (CoC) must be issued by a registered person, defined as “a person registered as an electrical tester for single phase, an installation electrician, or a master installation electrician”. Registered persons may be the owners or employees of electrical contractors. They must be currently registered with the Department of Labour (DoL), and registrations must be renewed annually, bi-annually or every three years depending on the application.

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No company may do electrical contracting work unless they have a permanently employed registered person as part of the company.

Department of Labour stating the certification as either 'single phase tester', "installation electrician" or "master installation electrician" with a unique licence number

Safety equipment

The following equipment required for working on electrical installations and distribution systems, must be maintained in good order and repair and must be made available:-

Safety belt, overalls, hard hat, safety shoes or boots, rubber gloves, "Men Working" notice boards, locks for locking off switches, buss bar shutters in truck-type switchgear, isolators or earthing links, rubber sheet and length of rope with short circuiting earthing-chains, earthing sticks and testing/phasing sticks rated for the voltage of the equipment to be tested.

Under no circumstances shall work be carried out on electrical apparatus unless the proper safety equipment is used

With regard to overhead linesmen, no work shall be carried out unless use is made of a non-metallic ladder and the appropriate safety belt, rubber gloves, overalls, hardhat and safety shoes or boots are worn. The buddy system must also be implemented.

Earthing

Always safety test before applying earths

Risk assessment of the site must be reviewed at least every 30 days. Based on the effectiveness of the existing measures, the safety plan must be adjusted to meet the new or existing.

At completion of the electrical installation work in the tender, a test as required must be performed to ensure safe operation of the equipment and a signed original CoC be supplied to the client.

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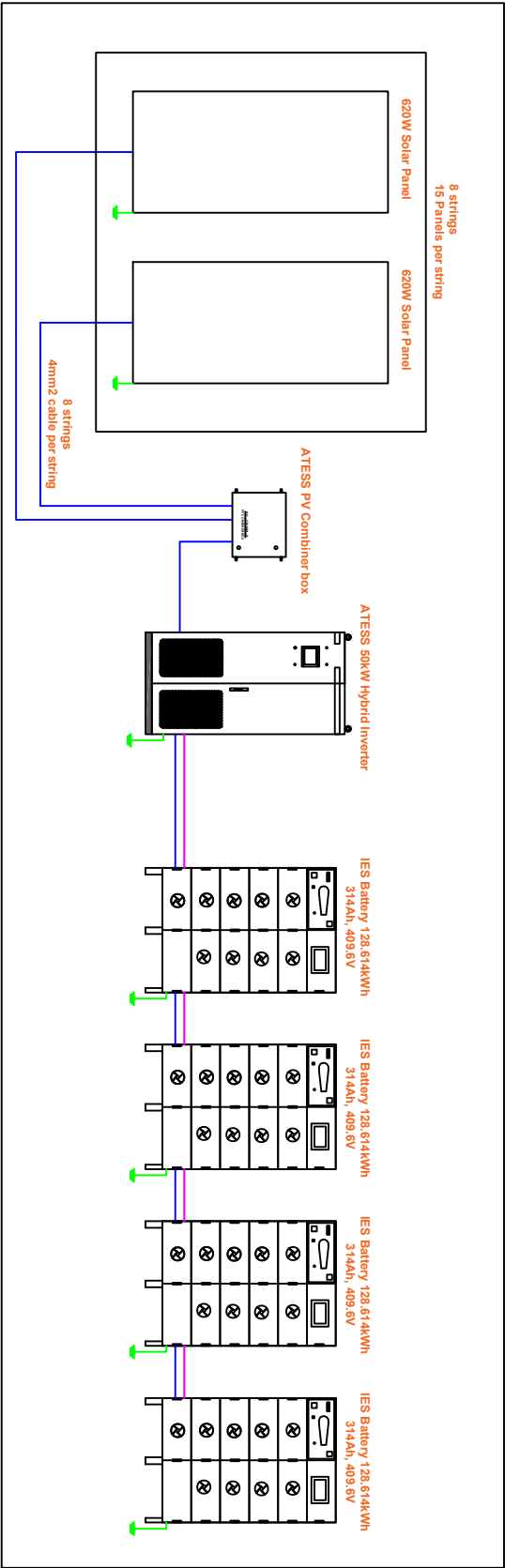
ADDENDUM A – GENERAL MINIMUM PPE REQUIREMENTS

Subject	Requirement
*PPE needs analysis	Need for PPE identified and prescribed in writing. PPE remain property of Employer, not to be removed from premises GSR 2(4)
*Head Protection	All persons on site wearing Safety Helmets including Sub-contractors and Visitors (where prescribed)
*Foot Protection	All employees on site wearing Safety Footwear including Gumboots for concrete / wet work and non-slip shoes for roof work. Visitors to wear same upon request or where prescribed
*Eye and Face Protection	<u>Eye and Face (also Hand and Body) Protection</u> (Goggles, Face Shields, Welding Helmets etc.) used when operating the following: * Jack/ Kango Hammers * Angle / Bench Grinders * Electric Drills (Overhead work into concrete / cement / bricks * Explosive Powered tools * Concrete Vibrators / Pokers * Hammers & Chisels * Cutting / Welding Torches * Cutting Tools and Equipment * Guillotines and Benders * Shears * Sanders and Sanding Machines * CO2 and Arc Welding Equipment * Skill / Bench Saws * Spray Painting Equipment etc.
*Hearing Protection	<u>Hearing Protectors</u> (Muffs, Plugs etc.) used when operating the following: * Jack / Kango Hammers * Explosive Powered Tools * Wood/Aluminium Working Machines e.g. saws, planers, routers
*Hand Protection	<u>Protective Gloves</u> worn by employees handling / using: * Cement / Bricks / Steel / Chemicals * Welding Equipment * Hammers & Chisels * Jack / Kango Hammers etc.
*Respiratory Protection	Suitable/efficient prescribed <u>Respirators</u> worn correctly by employees handling / using: * Dry cement * Dusty areas * Hazardous chemicals * Angle Grinders * Spray Painting etc.

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*Fall Prevention Equipment	Suitable <u>Safety Belts</u> / Fall Arrest Equipment correctly used by persons working on / in unguarded, elevated positions e.g.: * Scaffolding * Riggers * Lift shafts * Edge work * Ring beam edges etc. Other methods of fall prevention applied e.g. catch nets
*Protective Clothing	All jobs requiring protective clothing (Overalls, Rain Wear, Welding Aprons etc.) Identified and clothing worn.
*PPE Issue & Control	Identified Equipment issued free of charge. All PPE maintained in good condition. (Regular checks). Workers instructed in the proper use & maintenance of PPE. Commitment obtained from wearer accepting conditions and to wear the PPE. Record of PPE issued kept on H&S File. PPE remain property of Employer, not to be removed from premises GSR 2(4)

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LEGEND:	
	INVERTER
	ISOLATOR
	CIRCUIT BREAKER
	PV MODULE
	DC COMBINER
	SURGE ARRESTER
	RCD + CIRCUIT BREAKER
	ENERGY METER
	FUSE
	GND
	MOTORIZED CIRCUIT BREAKER
	AIR CIRCUIT BREAKER
	AUTOMATIC TRANSFER SWITCH
	CONTACTOR/RELAY
	INLINE FUSE
	MV SWITCH GEAR
	TRANSFORMER
	NEW AC CABLE
	EXISTING AC CABLE
	COMMUNICATION CABLE
	DC CABLE

REVISION	DESCRIPTION	DATE	HAMSA CONSULTING ENGINEERS (PTY) Ltd			Designed by	Drawn by	Checked by	Date Drawn	Date Checked	SCALE:
1	Concept Design		Suite 407 /4th Floor Strauss Dely Place 41 Richmond Circle Umhlanga Ridge South Africa 4319	Email: kershlyn@hamsaeng.co.za Tel: +27 (0)31 572 5723 Cell: +27 (0)71 721 6642		NN Mkhize	NN Mkhize	K. Govender			N.T.S.
						Client:			Drawing number:		
						SHEETS:			Equipment-layout-rev00		
						1 OF 1			Revision:		
									1		

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Smithstone Farm Equipment Layout - Location A



	INVERTER & BATTERY
	PV Modules

LEGEND:

REVISION	DESCRIPTION	DATE
1	Concept Design	

HAMSA CONSULTING ENGINEERS (Pty) Ltd
Suite 407, 4th Floor
Strauss Dairy Place
411 Richmond Circle
Umhlanga Ridge
South Africa 4319

Email: keshlyn@hamsaeng.co.za
Tel: +27 (0)31 572 5723
Cell: +27 (0)71 721 6642



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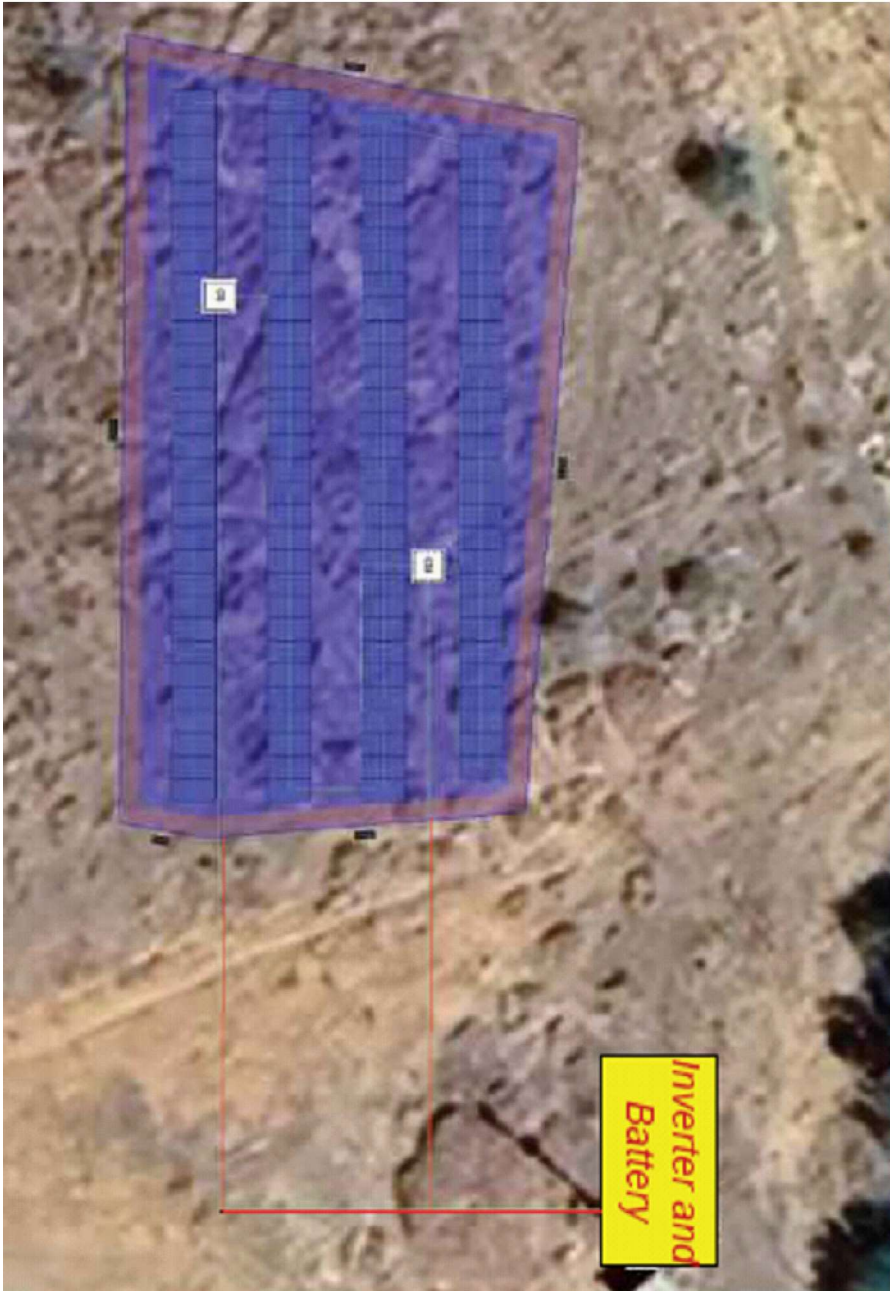
Designed by	NN Mkhize
Drawn by	NN Mkhize
Checked by	K. Govender
Date Drawn	
Date Checked	
SCALE:	N.T.S.

Title/Name	Client:	Drawing number:	SHEETS:

Smithstone Farm Site Layout - Location A	Castlra
Site-layout-rev00	
1 OF 1	Revision: 1

LEGEND:

	INVERTER & BATTERY
	PV Modules



REVISION	DESCRIPTION	DATE	HAMSA CONSULTING ENGINEERS (Pty) Ltd				Title/Name	
1	Concept Design		Suite 407, 4th Floor Strauss Dairy Place 41 Richmond Circle Umhlanga Ridge South Africa 4319				Designed by	NN Mkhize
			Email: kershlyn@hamsaeng.co.za Tel: +27 (0)31 572 5723 Cell: +27 (0)71 721 6642				Drawn by	NN Mkhize
							Checked by	K. Govender
							Date Drawn	
							Client:	Casidra
							Drawing number:	Site-layout-rev00
							SHEETS:	1 OF 1
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							Revised:	1