NEC3 Engineering & Construction Contract

Between **ESKOM HOLDINGS SOC Ltd**
(Reg No. 2002/015527/30)

and **……**

for **ROOFTOP PV WITH BESS AT MQIKELA SENIOR SECONDARY SCHOOL**

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CONTRACT No. **[……]**

Part C1: Agreements & Contract Data

Contents:

C1.1 Form of Offer & Acceptance

Offer

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract for the procurement of:

ROOFTOP PV WITH BESS AT MQIKELA SENIOR SECONDARY SCHOOL

The tenderer, identified in the Offer signature block, has examined the documents listed in the Tender Data and addenda thereto and by submitting this Offer has accepted the Conditions of Tender.

By the representative of the tenderer, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance the tenderer offers to perform all of the obligations and liabilities of the *Contractor* under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the *conditions of contract* identified in the Contract Data.

Options B	The offered total of the Prices exclusive of VAT is	**R**
	Value Added Tax @ 15% is	**R**
	The offered total of the amount due inclusive of VAT is[1]	**R**
	(in words)	

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document including the Schedule of Deviations (if any) to the tenderer before the end of the period of validity stated in the Tender Data, or other period as agreed, whereupon the tenderer becomes the party named as the *Contractor* in the *conditions of contract* identified in the Contract Data.

Signature(s)

Name(s) ....

Capacity ....

For the tenderer: ....

....

(Insert name and address of organisation)

Name & signature of witness Date

Tenderer's CIDB registration number (if applicable) .....

[1] This total is required by the *Employer* for budgeting purposes only. Actual amounts due will be assessed in terms of the *conditions of contract*.

Acceptance

By signing this part of this Form of Offer and Acceptance, the Employer identified below accepts the tenderer's Offer. In consideration thereof, the Employer shall pay the Contractor the amount due in accordance with the *conditions of contract* identified in the Contract Data. Acceptance of the tenderer's Offer shall form an agreement between the Employer and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

Part C1	Agreements and Contract Data, (which includes this Form of Offer and Acceptance)
Part C2	Pricing Data
Part C3	Scope of Work: Works Information
Part C4	Site Information

and drawings and documents (or parts thereof), which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Returnable Schedules as well as any changes to the terms of the Offer agreed by the tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule.

The tenderer shall within two weeks of receiving a completed copy of this agreement, including the Schedule of Deviations (if any), contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the *conditions of contract* identified in the Contract Data at, or just after, the date this agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy signed between them of this document, including the Schedule of Deviations (if any).

Unless the tenderer (now *Contractor*) within five working days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the Parties.

Signature(s) .....

Name(s) .....

Capacity .....

for the Employer

.....
(Insert name and address of organisation)

Name & signature of witness .....

Date .....

Note: If a tenderer wishes to submit alternative tenders, use another copy of this Form of Offer and Acceptance.

Schedule of Deviations to be completed by the *Employer* prior to contract award

Note:

1. This part of the Offer & Acceptance would not be required if the contract has been developed by negotiation between the Parties and is not the result of a process of competitive tendering.
2. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.
3. A tenderer's covering letter must not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid be the subject of agreement reached during the process of Offer and Acceptance, the outcome of such agreement shall be recorded here and the final draft of the contract documents shall be revised to incorporate the effect of it.

No.	Subject	Details
1	**[•]**	**[•]**
2	**[•]**	**[•]**
3	**[•]**	**[•]**
4	**[•]**	**[•]**
5	**[•]**	**[•]**
6	**[•]**	**[•]**
7	**[•]**	**[•]**

By the duly authorised representatives signing this Schedule of Deviations below, the Employer and the tenderer agree to and accept this Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules, as well as any confirmation, clarification or changes to the terms of the Offer agreed by the tenderer and the Employer during this process of Offer and Acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Form shall have any meaning or effect in the contract between the parties arising from this Agreement.

	For the tenderer:	**For the Employer**
Signature	.....	.....
Name	.....	.....
Capacity	.....	.....
On behalf of	..... *(Insert name and address of organisation)*	..... *(Insert name and address of organisation)*
Name & signature of witness	.....	.....
	.....	.....
Date	.....	.....

C1.2 ECC3 Contract Data

Part one - Data provided by the *Employer*

Clause	Statement	Data
1	**General**	
	The *conditions of contract* are the core clauses and the clauses for main Option	
		B: Priced contract with bill of quantities
	dispute resolution Option	**W1: Dispute resolution procedure**
	and secondary Options	
		X2 Changes in the law
		X7: Delay damages
		X16: Retention
		X18: Limitation of liability
		Z: *Additional conditions of contract*
	of the NEC3 Engineering and Construction Contract, April 2013 (ECC3)	
10.1	The *Employer* is (Name):	**Eskom Holdings SOC Ltd (reg no: 2002/015527/30), a state owned company incorporated in terms of the company laws of the Republic of South Africa**
	Address	**Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg**
10.1	The *Project Manager* is: (Name)	**TBA**
	Address	**ESKOM HOLDINGS SOC LIMITED, Sunilaws Office Park, Beacon Bay EAST LONDON, 5205**
	Tel	
	Fax	
	e-mail	
10.1	The *Supervisor* is: (Name)	**TBA**
	Address	**ESKOM HOLDINGS SOC LIMITED, Sunilaws Office Park, Beacon Bay EAST LONDON, 5205**
	Tel No.	

Fax No.

e-mail

11.2(13)	The *works* are	**Rooftop PV with BESS at Mqikela Senior Secondary School**
11.2(14)	The following matters will be included in the Risk Register	**Part 5 – Annexures – Risks identified part of the Risk Assessment as per the Safety Health & Environment Specification document and FDP Document.**
11.2(15)	The *boundaries of the site* are	**Within the servitude of Enoch Mqikela Secondary School boundaries project.**
11.2(16)	The Site Information is in	**Part C4: Site Information**
11.2(19)	The Works Information is in	**Part C3: Scope of Work and all documents and drawings will form part of the project specific contract.**
12.2	The *law of the contract* is the law of	**the Republic of South Africa**
13.1	The *language of this contract* is	**English**
13.3	The *period for reply* is	**5 (Five) working days**
2	**The *Contractor's* main responsibilities**	**Data required by this section of the core clauses is provided by the *Contractor* in Part 2 and terms in italics used in this section are identified elsewhere in this Contract Data.**
3	**Time**	
11.2(3)	The *completion date* for the whole of the *works* is	**TBA**
11.2(9)	The *key date*s and the *condition*s to be met are:	

	***Condition* to be met**	***key date***
1	**Inspection of sample materials before site establishment.**	**Within 2 Weeks from Contract *Starting date***
2	**Site Establishment, ordering and delivery of materials**	**Within 2 Weeks of completion of Item 1**
3	**Construction and installation**	**Within 6 Weeks of completion of Item 2**
4	**Commissioning, performance testing and final handover**	**Within 2 Weeks of completion of Item 3**

30.1	The *access dates* are:	**Part of the Site**	**Date**
		1 **Complete Site**	**1 Week After**

		2	TBA	Contract Award
		3	TBA	

31.1	The *Contractor* is to submit a first programme for acceptance within	**2 (Two) weeks of the contract date**
31.2	The *starting date* is	**The date of contract award.**
32.2	The *Contractor* submits revised programmes at intervals no longer than	**2 (Two) weeks**
35.1	The *Employer* is not willing to take over the *works* before the Completion Date.	[No data needed if this statement is included]
4	**Testing and Defects**	
42.2	The *defects date* is	**52 (Fifty-two) weeks after Completion of the whole of the works**
43.2	The *defect correction period* is	**2 (Two) weeks upon notification of defect**
5	**Payment**	
50.1	The *assessment interval* is	**Period agreed upon by *Project Manager* and *Contractor* from the Starting Date**
51.1	The *currency of this contract* is the	**South African Rand.**
51.2	The period within which payments are made is	**For contracts valued below R50 000 000 (Fifty Million Rand) including VAT, Eskom is committed to paying Suppliers within 30 days of receipt of undisputed invoices.** **For contracts valued above R50 000 000 (Fifty Million Rand) including VAT, Eskom is committed to paying suppliers within 60 days of receipt of undisputed invoices.**
51.4	The *interest rate* is	**the publicly quoted prime rate of interest (calculated on a 365 day year) charged from time to time by the Standard Bank of South Africa Limited (as certified, in the event of any dispute, by any manager of such bank, whose appointment it shall not be necessary to prove) for amounts due in Rands and**
6	**Compensation events**	
60.1(13)	The place where weather is to be recorded is: The *weather measurements* to be recorded for each calendar month are,	**At the established Site Camp/ Office Area** **the cumulative rainfall (mm)** **the number of days with rainfall more than 10 mm** **the number of days with minimum air**

		temperature less than 0 degrees Celsius **the number of days with snow lying at 09:00 hours South African Time** **and these measurements: are recorded within a calendar month**
	The *weather measurements* are supplied by	**The contractor using actual weather readings from the established site**
	The *weather data* are the records of past *weather measurements* for each calendar month which were recorded at:	**SA Weather, Pretoria, 012-3676000** **Lusikisiki, Eastern Cape Province**
	and which are available from:	**the South African Weather Bureau and included in Annexure A to this Contract Data provided by the *Employer***
60.1(13)	Assumed values for the ten year return *weather data* for each *weather measurement* for each calendar month are:	**As stated in Annexure A to this Contract Data provided by the *Employer*.** **Note: If this arrangement is used, delete the rows above for 60.1(13) and delete this note.**
7	**Title**	**As per the terms and conditions of the NEC3 Engineering and Construction Contract, April 2013 (ECC3).**
8	**Risks and insurance**	
80.1	These are additional *Employer*'s risks	**1. Refer to the attached Safety, Health and Environmental Specifications.** **2.** **3.**
9	**Termination**	**As per the terms and conditions of the NEC3 Engineering and Construction Contract, April 2013 (ECC3)**
10	**Data for main Option clause**	
B	**Priced contract with bill of quantities**	
60.6	The *method of measurement* is	**As stated in Part C2.1, Pricing Assumptions.**
11	**Data for Option W1**	
W1.1	The *Adjudicator* is	**the person selected from the ICE-SA Division (or its successor body) of the South African Institution of Civil Engineering Panel of Adjudicators by the Party intending to refer a dispute to him. (see www.ice-sa.org.za). If the Parties do not agree on an Adjudicator the Adjudicator will be appointed by the Arbitration Foundation of Southern Africa (AFSA).**
	Address	**TO BE APPOINTED WHEN DISPUTE ARISE**
	Tel No.	

Fax No.

e-mail

W1.2(3)	The *Adjudicator nominating body* is:	**the Chairman of ICE-SA a joint Division of the South African Institution of Civil Engineering and the London Institution of Civil Engineers. (See www.ice-sa.org.za) or its successor body.**
W1.4(2)	The *tribunal* is:	**arbitration.**
W1.4(5)	The *arbitration procedure* is	**the latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.**
	The place where arbitration is to be held is	**East London, Eastern Cape, South Africa**
	The person or organisation who will choose an arbitrator - if the Parties cannot agree a choice or - if the arbitration procedure does not state who selects an arbitrator, is	**`.** **the Chairman for the time being or his nominee of the Association of Arbitrators (Southern Africa) or its successor body.**

12 Data for secondary Option clauses

X2	**Changes in the law**	**There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.**
X7	**Delay damages (but not if Option X5 is also used)**	
X7.1	Delay damages for Completion of the whole of the *works* are	**0.1% of Contract Value per day.** **Up to a limit not exceeding 10% of Contract Value**
X16	**Retention (not used with Option F)**	
X16.1	The *retention free amount* is	**NIL**
	The *retention percentage* is	**10%**
X18	**Limitation of liability**	
X18.1	The *Contractor*'s liability to the *Employer* for indirect or consequential loss is limited to:	**The sum of the loss as a result of any action arising by any negligent act by any person under the contractor's employ or any person performing work under the direct supervision of the contractor**
X18.2	For any one event, the *Contractor*'s liability to the *Employer* for loss of or damage to the *Employer*'s property is limited to:	**the amount of the deductibles relevant to the event**
X18.3	The *Contractor*'s liability for Defects due to his design which are not listed on the Defects Certificate is limited to	**The greater of** • **the total of the Prices at the Contract Date and** • **the amounts excluded and unrecoverable from the *Employer*'s assets policy for**

		correcting the Defect (other than the resulting physical damage which is not excluded) plus the applicable deductible as at contract date.
X18.4	The *Contractor*'s total liability to the *Employer* for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	**the total of the Prices other than for the additional excluded matters.** **The *Contractor's* total liability for the additional excluded matters is not limited.** **The additional excluded matters are amounts for which the *Contractor* is liable under this contract for** • **Defects due to his design which arise before the Defects Certificate is issued,** • **Defects due to manufacture and fabrication outside the Site,** • **loss of or damage to property (other than the *works*, Plant and Materials),** • **death of or injury to a person and** • **infringement of an intellectual property right.**
X18.5	The *end of liability date* is	**(i) Seven years after the *defects date* for latent Defects and** **(ii) the date on which the liability in question prescribes in accordance with the Prescription Act No. 68 of 1969 (as amended or in terms of any replacement legislation) for any other matter.** **A latent Defect is a Defect which would not have been discovered on reasonable inspection by the *Employer* or the *Supervisor* before the *defects date*, without requiring any inspection not ordinarily carried out by the *Employer* or the *Supervisor* during that period. If the *Employer* or the *Supervisor* do undertake any inspection over and above the reasonable inspection, this does not place a greater responsibility on the *Employer* or the *Supervisor* to have discovered the Defect.**
Z	**The *Additional conditions of contract* are**	**Z1 to Z15 always apply.**

Z1 Cession delegation and assignment

Z1.1 The *Contractor* does not cede, delegate or assign any of its rights or obligations to any person without the written consent of the *Employer.*

Z1.2 Notwithstanding the above, the *Employer* may on written notice to the *Contractor* cede and delegate its rights and obligations under this contract to any of its subsidiaries or any of its present divisions or operations which may be converted into separate legal entities as a result of the restructuring of the Electricity Supply Industry.

Z2 Joint ventures

Z2.1 If the *Contractor* constitutes a joint venture, consortium or other unincorporated grouping of two or more persons or organisations then these persons or organisations are deemed to be jointly and severally liable to the *Employer* for the performance of this contract.

Z2.2 Unless already notified to the *Employer*, the persons or organisations notify the *Project Manager* within two weeks of the Contract Date of the key person who has the authority to bind the *Contractor* on their behalf.

Z2.3 The *Contractor* does not alter the composition of the joint venture, consortium or other unincorporated grouping of two or more persons without the consent of the *Employer* having been given to the *Contractor* in writing.

Z3 Change of Broad Based Black Economic Empowerment (B-BBEE) status

Z3.1 Where a change in the *Contractor's* legal status, ownership or any other change to his business composition or business dealings results in a change to the *Contractor*'s B-BBEE status, the *Contractor* notifies the *Employer* within seven days of the change.

Z3.2 The *Contractor* is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the *Project Manager* within thirty days of the notification or as otherwise instructed by the *Project Manager*.

Z3.3 Where, as a result, the *Contractor's* B-BBEE status has decreased since the Contract Date the *Employer* may either re-negotiate this contract or alternatively, terminate the *Contractor*'s obligation to Provide the Works.

Z3.4 Failure by the *Contractor* to notify the *Employer* of a change in its B-BBEE status may constitute a reason for termination. If the *Employer* terminates in terms of this clause, the procedures on termination are P1, P2 and P3 as stated in clause 92, and the amount due is A1 and A3 as stated in clause 93.

Z4 Confidentiality

Z4.1 The *Contractor* does not disclose or make any information arising from or in connection with this contract available to Others. This undertaking does not, however, apply to information which at the time of disclosure or thereafter, without default on the part of the *Contractor*, enters the public domain or to information which was already in the possession of the *Contractor* at the time of disclosure (evidenced by written records in existence at that time). Should the *Contractor* disclose information to Others in terms of clause 25.1, the *Contractor* ensures that the provisions of this clause are complied with by the recipient.

Z4.2 If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until notified otherwise by the *Project Manager*.

Z4.3 In the event that the *Contractor* is, at any time, required by law to disclose any such information which is required to be kept confidential, the *Contractor*, to the extent permitted by law prior to disclosure, notifies the *Employer* so that an appropriate protection order and/or any other action can be taken if possible, prior to any disclosure. In the event that such protective order is not, or cannot, be obtained, then the *Contractor* may disclose that portion of the information which it is required to be disclosed by law and uses reasonable efforts to obtain assurances that confidential treatment will be afforded to the information so disclosed.

Z4.4 The taking of images (whether photographs, video footage or otherwise) of the *works* or any portion thereof, in the course of Providing the Works and after Completion, requires the prior written consent of the *Project Manager*. All rights in and to all such images vests exclusively in the *Employer*.

Z4.5 The *Contractor* ensures that all his subcontractors abide by the undertakings in this clause.

Z5 Waiver and estoppel: Add to core clause 12.3:

Z5.1 Any extension, concession, waiver or relaxation of any action stated in this contract by the Parties, the *Project Manager*, the *Supervisor*, or the *Adjudicator* does not constitute a waiver of rights, and does not give rise to an estoppel unless the Parties agree otherwise and confirm such agreement in writing.

Z6 Health, safety and the environment: Add to core clause 27.4

Z6.1 The *Contractor* undertakes to take all reasonable precautions to maintain the health and safety of persons in and about the execution of the *works*. Without limitation the *Contractor*:

- accepts that the *Employer* may appoint him as the "Principal Contractor" (as defined and provided for under the Construction Regulations 2014 (promulgated under the Occupational Health & Safety Act 85 of 1993) ("the Construction Regulations") for the Site;
- warrants that the total of the Prices as at the Contract Date includes a sufficient amount for proper compliance with the Construction Regulations, all applicable health & safety laws and regulations and the health and safety rules, guidelines and procedures provided for in this contract and generally for the proper maintenance of health & safety in and about the execution of *works*; and
- undertakes, in and about the execution of the *works*, to comply with the Construction Regulations and with all applicable health & safety laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his Subcontractors, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.

Z6.2 The *Contractor*, in and about the execution of the *works*, complies with all applicable environmental laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his Subcontractors, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.

Z7 Provision of a Tax Invoice and interest. Add to core clause 51

Z7.1 Within one week of receiving a payment certificate from the *Project Manager* in terms of core clause 51.1, the *Contractor* provides the *Employer* with a tax invoice in accordance with the *Employer*'s procedures stated in the Works Information, showing the amount due for payment equal to that stated in the payment certificate.

Z7.2 If the *Contractor* does not provide a tax invoice in the form and by the time required by this contract, the time by when the *Employer* is to make a payment is extended by a period equal in time to the delayed submission of the correct tax invoice. Interest due by the *Employer* in terms of core clause 51.2 is then calculated from the delayed date by when payment is to be made.

Z7.3 The *Contractor* (if registered in South Africa in terms of the companies Act) is required to comply with the requirements of the Value Added Tax Act, no 89 of 1991 (as amended) and to include the *Employer*'s VAT number 4740101508 on each invoice he submits for payment.

Z8 Notifying compensation events

Z8.1 Delete from the last sentence in core clause 61.3, "unless the *Project Manager* should have notified the event to the *Contractor* but did not".

Z9 *Employer's* limitation of liability

Z9.1 The *Employer's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00 (zero Rand)

Z9.2 The *Contractor*'s entitlement under the indemnity in 83.1 is provided for in 60.1(14) and the *Employer*'s liability under the indemnity is limited.

Z10 Termination: Add to core clause 91.1, at the second main bullet point, fourth sub-bullet point, after the words "against it":

Z10.1 or had a business rescue order granted against it.

Z11 Addition to secondary Option X7 Delay damages (if applicable in this contract)

Z11.1 If the amount due for the *Contractor*'s payment of delay damages reaches the limits stated in this Contract Data for Option X7 or Options X5 and X7 used together, the *Employer* may terminate the *Contractor*'s obligation to Provide the Works using the same procedures and payment on termination as those applied for reasons R1 to R15 or R18 stated in the Termination Table.

Z12 Ethics

For the purposes of this Z-clause, the following definitions apply:

Affected Party means, as the context requires, any party, irrespective of whether it is the *Contractor* or a third party, such party's employees, agents, or Subcontractors or Subcontractor's employees, or any one or more of all of these parties' relatives or friends,

Coercive Action means to harm or threaten to harm, directly or indirectly, an Affected Party or the property of an Affected Party, or to otherwise influence or attempt to influence an Affected Party to act unlawfully or illegally,

Collusive Action means where two or more parties co-operate to achieve an unlawful or illegal purpose, including to influence an Affected Party to act unlawfully or illegally,

Committing Party means, as the context requires, the *Contractor*, or any member thereof in the case of a joint venture, or its employees, agents, or Subcontractor or the Subcontractor's employees,

Corrupt Action means the offering, giving, taking, or soliciting, directly or indirectly, of a good or service to unlawfully or illegally influence the actions of an Affected Party,

Fraudulent Action means any unlawfully or illegally intentional act or omission that misleads, or attempts to mislead, an Affected Party, in order to obtain a financial or other benefit or to avoid an obligation or incurring an obligation,

Obstructive Action means a Committing Party unlawfully or illegally destroying, falsifying, altering or concealing information or making false statements to materially impede an investigation into allegations of Prohibited Action, and

Prohibited Action means any one or more of a Coercive Action, Collusive Action Corrupt Action, Fraudulent Action or Obstructive Action.

Z12.1 A Committing Party may not take any Prohibited Action during the course of the procurement of this contract or in execution thereof.

Z12.2 The *Employer* may terminate the *Contractor*'s obligation to Provide the Services if a Committing Party has taken such Prohibited Action and the *Contractor* did not take timely and appropriate action to prevent or remedy the situation, without limiting any other rights or remedies the

Employer has. It is not required that the Committing Party had to have been found guilty, in court or in any other similar process, of such Prohibited Action before the *Employer* can terminate the *Contractor*'s obligation to Provide the Services for this reason.

Z12.3 If the *Employer* terminates the *Contractor*'s obligation to Provide the Services for this reason, the amounts due on termination are those intended in core clauses 92.1 and 92.2.

Z12.4 A Committing Party co-operates fully with any investigation pursuant to alleged Prohibited Action. Where the *Employer* does not have a contractual bond with the Committing Party, the *Contractor* ensures that the Committing Party co-operates fully with an investigation.

Z13 Insurance

Z 13.1 Replace core clause 84 with the following:

Insurance cover

84

84.1 When requested by a Party, the other Party provides certificates from his insurer or broker stating that the insurances required by this contract are in force.

84.2 The *Contractor* provides the insurances stated in the Insurance Table A.

84.3 The insurances provide cover for events which are at the *Contractor*'s risk from the *starting date* until the earlier of Completion and the date of the termination certificate.

INSURANCE TABLE A

Insurance against	Minimum amount of cover or minimum limit of indemnity
Loss of or damage to the *works*, Plant and Materials	The replacement cost where not covered by the *Employer*'s insurance The *Employer*'s policy deductible, as at Contract Date, where covered by the *Employer*'s insurance
Loss of or damage to Equipment	The replacement cost
Liability for loss of or damage to property (except the *works*, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor*) caused by activity in connection with this contract	**Loss of or damage to property** *Employer*'s property The replacement cost where not covered by the *Employer*'s insurance The *Employer*'s policy deductible, as at Contract Date, where covered by the *Employer*'s insurance Other property The replacement cost **Bodily injury to or death of a person** The amount required by applicable law
Liability for death of or bodily injury to employees of the *Contractor* arising out	The amount required by the applicable

of and in the course of their employment in connection with this contract	law

Z 13.2 **Replace core clause 87 with the following:**
The *Employer* provides the insurances stated in the Insurance Table B.

INSURANCE TABLE B

Insurance against or name of policy	**Minimum amount of cover or minimum limit of indemnity**
Assets All Risk	Per the insurance policy document
Contract Works insurance	Per the insurance policy document
Environmental Liability	Per the insurance policy document
General and Public Liability	Per the insurance policy document
Transportation (Marine)	Per the insurance policy document
Motor Fleet and Mobile Plant	Per the insurance policy document
Terrorism	Per the insurance policy document
Cyber Liability	Per the insurance policy document
Nuclear Material Damage and Business Interruption	Per the insurance policy document
Nuclear Material Damage Terrorism	Per the insurance policy document

Z14 Nuclear Liability

Z14.1 The *Employer* is the operator of the Koeberg Nuclear Power Station (KNPS), a nuclear installation, as designated by the National Nuclear Regulator of the Republic of South Africa, and is the holder of a nuclear licence in respect of the KNPS.

Z14.2 The *Employer* is solely responsible for and indemnifies the *Contractor* or any other person against any and all liabilities which the *Contractor* or any person may incur arising out of or resulting from nuclear damage, as defined in Act 47 of 1999, save to the extent that any liabilities are incurred due to the unlawful intent of the *Contractor* or any other person or the presence of the *Contractor* or that person or any property of the *Contractor* or such person at or in the KNPS or on the KNPS site, without the permission of the *Employer* or of a person acting on behalf of the *Employer*.

Z14.3 Subject to clause Z14.4 below, the *Employer* waives all rights of recourse, arising from the aforesaid, save to the extent that any claims arise or liability is incurred due or attributable to the unlawful intent of the *Contractor* or any other person, or the presence of the *Contractor* or that person or any property of the *Contractor* or such person at or in the KNPS or on the KNPS site, without the permission of the *Employer* or of a person acting on behalf of the *Employer*.

Z14.4 The *Employer* does not waive its rights provided for in section 30 (7) of Act 47 of 1999, or any replacement section dealing with the same subject matter.

Z14.5 The protection afforded by the provisions hereof shall be in effect until the KNPS is decommissioned.

Z15 Asbestos

For the purposes of this Z-clause, the following definitions apply:

AAIA means approved asbestos inspection authority.

ACM means asbestos containing materials.

AL means action level, i.e. a level of 50% of the OEL, i.e. 0.1 regulated asbestos fibres per ml of air measured over a 4 hour period. The value at which proactive actions is required in order to control asbestos exposure to prevent exceeding the OEL.

Ambient Air means breathable air in area of work with specific reference to breathing zone, which is defined to be a virtual area within a radius of approximately 30cm from the nose inlet.

Compliance Monitoring means compliance sampling used to assess whether or not the personal exposure of workers to regulated asbestos fibres is in compliance with the Standard's requirements for safe processing, handling, storing, disposal and phase-out of asbestos and asbestos containing material, equipment and articles.

OEL means occupational exposure limit.

Parallel Measurements means measurements performed in parallel, yet separately, to existing measurements to verify validity of results.

Safe Levels means airborne asbestos exposure levels conforming to the Standard's requirements for safe processing, handling, storing, disposal and phase-out of asbestos and asbestos containing material, equipment and articles.

Standard means the *Employer*'s Asbestos Standard 32-303: Requirements for Safe Processing, Handling, Storing, Disposal and Phase-out of Asbestos and Asbestos Containing Material, Equipment and Articles.

SANAS means the South African National Accreditation System.

TWA means the average exposure, within a given workplace, to airborne asbestos fibres, normalised to the baseline of a 4 hour continuous period, also applicable to short term exposures, i.e. 10-minute TWA.

Z15.1 The *Employer* ensures that the Ambient Air in the area where the *Contractor* will Provide the Services conforms to the acceptable prescribed South African standard for asbestos, as per the regulations published in GNR 155 of 10 February 2002, under the Occupational Health and Safety Act, 1993 (Act 85 of 1993) ("Asbestos Regulations"). The OEL for asbestos is 0.2 regulated asbestos fibres per millilitre of air as a 4-hour TWA, averaged over any continuous period of four hours, and the short term exposure limit of 0.6 regulated asbestos fibres per millilitre of air as a 10-minute TWA, averaged over any 10 minutes, measured in accordance with HSG248 and monitored according to HSG173 and OESSM.

Z15.2 Upon written request by the *Contractor*, the *Employer* certifies that these conditions prevail. All measurements and reporting are effected by an independent, competent, and certified occupational hygiene inspection body, i.e. a SANAS accredited and Department of Employment and Labour approved AAIA. The *Contractor* may perform Parallel Measurements and related control measures at the *Contractor*'s expense. For the purposes of compliance the results generated from Parallel Measurements are evaluated only against South African statutory limits as detailed in clause Z15.1. Control measures conform to the requirements stipulated in the AAIA-approved asbestos work plan.

Z15.3 The *Employer* manages asbestos and ACM according to the Standard.

Z15.4 In the event that any asbestos is identified while Providing the Services, a risk assessment is conducted and if so required, with reference to possible exposure to an airborne concentration of above the AL for asbestos, immediate control measures are implemented and relevant air monitoring conducted in order to declare the area safe.

Z15.5 The *Contractor*'s personnel are entitled to stop working and leave the contaminated area forthwith until such time that the area of concern is declared safe by either Compliance Monitoring or an AAIA approved control measure intervention, for example, per the emergency asbestos work plan, if applicable.

Z15.6 The *Contractor* continues to Provide the Services, without additional control measures presented, on presentation of Safe Levels. The contractually agreed dates to Provide the Services, including the Completion Date, are adjusted accordingly. The contractually agreed dates are extended by the notification periods required by regulations 3 and 21 of the Asbestos Regulations, 2001.

Z15.7 Any removal and disposal of asbestos, asbestos containing materials and waste, is done by a registered asbestos contractor, instructed by the *Employer* at the *Employer*'s expense, and conducted in line with South African legislation.

Annexure A: One-in-ten-year-return *weather data* obtained from SA Weather Bureau for [weather station]

If any one of these *weather measurements* recorded within a calendar month, before the Completion Date for the whole of the *works* and at the place stated in this Contract Data is shown to be more adverse than the amount stated below then the *Contractor* may notify a compensation event.

	Rain	Max	Min	Humidity	Wind	Cloud	Pressure	
2009		31 °c	13 °c	15 km/h SW	0.0 mm	38%	4%	1016 mb
2010		15 °c	9 °c	8 km/h SSE	1.9 mm	87%	69%	1021 mb
2011		21 °c	10 °c	17 km/h W	0.0 mm	30%	3%	1012 mb
2012		18 °c	4 °c	7 km/h SE	0.0 mm	56%	0%	1024 mb
2013		23 °c	4 °c	7 km/h S	0.0 mm	38%	0%	1020 mb
2014		24 °c	6 °c	7 km/h SW	0.0 mm	47%	0%	1024 mb
2015		16 °c	8 °c	16 km/h SW	0.0 mm	59%	28%	1023 mb
2016		23 °c	13 °c	6 km/h ESE	1.1 mm	78%	52%	1023 mb
2017		22 °c	6 °c	4 km/h SW	0.0 mm	59%	4%	1027 mb
2018		24 °c	13 °c	5 km/h SE	2.0 mm	73%	71%	1012 mb
2019		21 °c	7 °c	6 km/h SSW	0.0 mm	55%	13%	1023 mb
2020		26 °c	8 °c	10 km/h E	0.0 mm	61%	30%	1018 mb
2021		25 °c	8 °c	6 km/h S	0.0 mm	58%	28%	1013 mb
2022		33 °c	12 °c	8 km/h NW	0.0 mm	34%	5%	1015 mb
2023		22 °c	10 °c	7 km/h ESE	1.6 mm	72%	67%	1018 mb
2024		26 °c	10 °c	7 km/h ESE	0.0 mm	71%	10%	1027 mb
2025		30 °c	9 °c	6 km/h SE	0.0 mm	59%	50%	1021 mb
2026		25 °c	16 °c	18 km/h E	0.0 mm	56%	43%	1017 mb

Only the difference between the more adverse recorded weather and the equivalent measurement given above is taken into account in assessing a compensation event.

C1.2 Contract Data

Part two - Data provided by the *Contractor*

Notes to a tendering contractor:

1. Please read both the NEC3 Engineering and Construction Contract (April 2013) and the relevant parts of its Guidance Notes (ECC3-GN)[1] in order to understand the implications of this Data which the tenderer is required to complete. An example of the completed Data is provided on pages 156 to 158 of the ECC3 (April 2013) Guidance Notes.
2. The number of the clause which requires the data is shown in the left hand column for each statement however other clauses may also use the same data
3. Where a form field like this [ ] appears, data is required to be inserted relevant to the option selected. Click on the form field ***once*** and type in the data. Otherwise complete by hand and in ink.

Completion of the data in full, according to Options chosen, is essential to create a complete contract.

Clause	Statement	Data
10.1	The *Contractor* is (Name): Address Tel No. Fax No.	
11.2(8)	The *direct fee percentage* is The *subcontracted fee percentage* is	**%** **%**
11.2(18)	The *working areas* are the Site and	
24.1	The *Contractor's* key persons are: 1 Name: Job: Responsibilities: Qualifications: Experience: 2 Name: Job Responsibilities: Qualifications: Experience:	**CV's (and further key persons data including CVs) are appended to Tender Schedule entitled .**

[1] Available from Engineering Contract Strategies Tel 011 803 3008, Fax 011 803 3009 or see www.ecs.co.za

11.2(3)	The *completion date* for the whole of the *works* is	
11.2(14)	The following matters will be included in the Risk Register	
11.2(19)	The Works Information for the *Contractor*'s design is in:	
31.1	The programme identified in the Contract Data is	
B	**Priced contract with bill of quantities**	
11.2(21)	The *bill of quantities* is in	
11.2(31)	The tendered total of the Prices is	**(in figures)** **(in words), excluding VAT**
	Data for Schedules of Cost Components	*Note "SCC" means Schedule of Cost Components starting on page 60, and "SSCC" means Shorter Schedule of Cost Components starting on page 63 of ECC3 (April 2013).*
B	**Priced contract with bill of quantities**	**Data for the Shorter Schedule of Cost Components**
41 in SSCC	The percentage for people overheads is:	**%**
21 in SSCC	The published list of Equipment is the last edition of the list published by The percentage for adjustment for Equipment in the published list is	**Minus %**
22 in SSCC	The rates of other Equipment are:	**Equipment** / **Size or capacity** / **Rate**
61 in SSCC	The hourly rates for Defined Cost of design outside the Working Areas are **Note: Hourly rates are estimated 'cost to company of the employee' and not selling rates.** **Please insert another schedule if foreign resources may also be used**	**Category of employee** / **Hourly rate**
62 in SSCC	The percentage for design overheads is	**%**

63 in SSCC	The categories of design employees whose travelling expenses to and from the Working Areas are included in Defined Cost are:	

PART 2: PRICING DATA
ECC3 Option B

Document reference	Title	No of pages
C2.1	Pricing assumptions: Option B	**[03]**
C2.2	The *bill of quantities*	**[07]**

C2.1 Pricing assumptions: Option B

1. How work is priced and assessed for payment

Clause 11 in NEC3 Engineering and Construction Contract (ECC3) Option B states:

Identified and defined terms 11 11.2

(21) The Bill of Quantities is the *bill of quantities* as changed in accordance with this contract to accommodate implemented compensation events and for accepted quotations for acceleration.

(28) The Price for Work Done to Date is the total of

- the quantity of the work which the *Contractor* has completed for each item in the Bill of Quantities multiplied by the rate and
- a proportion of each lump sum which is the proportion of the work covered by the item which the *Contractor* has completed.

Completed work is work without Defects which would either delay or be covered by immediately following work.

(31) The Prices are the lump sums and the amounts obtained by multiplying the rates by the quantities for the items in the Bill of Quantities.

This confirms that Option B is a re-measurement contract and the bill comprises only items measured using quantities and rates or stated as lump sums. Value related items are not used. Time related items are items measured using rates where the rate is a unit of time.

2. Function of the Bill of Quantities

Clause 55.1 in Option B states, “Information in the Bill of Quantities is not Works Information or Site Information”. This confirms that specifications and descriptions of the work or any constraints on how it is to be done are not included in the Bill, but in the Works Information. This is further confirmed by Clause 20.1 which states, “The *Contractor* Provides the Works in accordance with the Works Information”. Hence the *Contractor* does **not** Provide the Works in accordance with the Bill of Quantities. The Bill of Quantities is only a pricing document.

3. Guidance before pricing and measuring

Employers preparing tenders or contract documents, and tendering contractors are advised to consult the sections dealing with the bill of quantities in the NEC3 Engineering and Construction Contract Guidance Notes before preparing the *bill of quantities* or before entering rates and lump sums into the *bill*.

There is no general provision in Option B for payment for materials on Site before incorporation into the *works*. If secondary Option X14 Advanced payment has not been used then the tendering contractor may obtain the same effect by inserting appropriate items in the method related charges where the *method of measurement* allows, or alternatively making allowance in the rates of the *bill of quantities* for the financing of Plant and Materials until they are incorporated in the *works.*

When compensation events arise, the default position is that the Bill of Quantities is not used to calculate the cost effect of the event. Defined Cost and the resulting Fee is used and Defined Cost includes all components of cost which the *Contractor* is likely to incur, including so called P & G items. Rates and lump sums from the Bill of Quantities, or from any other source, may be used instead of Defined Cost and the Fee only if the *Contractor* and *Project Manager* agree. If they are unable to agree, then Defined Cost

plus Fee is used.

4. Measurement and payment

4.1. Symbols

The units of measurement described in the Bill of Quantities are metric units abbreviated as follows:

Abbreviation	Unit
%	percent
h	hour
ha	hectare
kg	kilogram
kl	kilolitre
km	kilometre
km-pass	kilometre-pass
kPa	kilopascal
kW	kilowatt
l	litre
m	metre
mm	millimetre
m^2	square metre
m^2-pass	square metre pass
m^3	cubic metre
m^3-km	cubic metre-kilometre
MN	meganewton
MN.m	meganewton-metre
MPa	megapascal
No.	number
sum	Lump sum
t	tonne (1000kg)

4.2. General assumptions

4.2.1. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance has been made in the quantities for waste.

4.2.2. The Prices and rates stated for each item in the Bill of Quantities shall be treated as being fully inclusive of all work, risks, liabilities, obligations, overheads, profit and everything necessary as incurred or required by the *Contractor* in carrying out or providing that item.

4.2.3. An item against which no Price is entered will be treated as covered by other Prices or rates in the *bill of quantities*.

4.2.4. The quantities contained in the Bill of Quantities may not be final and do not necessarily represent the actual amount of work to be done. The quantities of work assessed and certified for payment by the *Project Manager* at each assessment date will be used for determining payments due.

4.2.5. The short descriptions of the items of payment given in the *bill of quantities* are only for the purposes of identifying the items. Detail regarding the extent of the work entailed under each item is provided in the Works Information.

4.3. Departures from the *method of measurement*

4.3.1.

4.4. Amplification of or assumptions about measurement items

The following is provided to assist in the interpretation of descriptions given in the *method of measurement*. In the event of any ambiguity or inconsistency between the statements in the *method of measurement* and this section, the interpretation given in this section shall be used.

4.4.1.

C2.2 the *bill of quantities*

Use this page as a summary page or as a cover page to the *bill of quantities*.

Bill of Quantities: Estimated Schools Costing- Primary Plant and Civil

	Site Activities		
A	Fixed Charged Items	R	-
B	Time Related items (Will be paid as % of work done to date)	R	-
C1	Civil Works	R	-
C2	Steelwork Erection	R	-
C3	Clamps and Earthing	R	-
C4	Electrical	R	-
	Sub Total	**R**	-
	15% Vat	R	-
	Total	**R**	-

CODE	STANDARD ACTIVITY	UNIT	QTY	RATE	TENDER PRICE
A	**FIXED CHARGE ITEMS**				
A.1	Contractual requirements i.e., insurance's, statutory contributions, etc.	sum	1		R -
A.2	Site Establishment - including, offices, telephone and fax, lighting, fencing, toilet facilities, water, etc.	sum	1		
A.2.1	Office complete as per works information	sum	1		R -
A.2.2	Staff Accommodation	sum	1		R -
A.2.3	Stores	sum	1		R -
A.2.4	Water, Sanitation and Electricity	sum	1		R -
A.2.5	Communication	sum	1		R -
A.3	Removal of site establishment on completion of the contract	sum	1		R -
				Sub Total 'A'	**R -**
B	**TIME RELATED ITEMS**				
B.1	**Outages**				
	Contractors must allow for outages being done on weekends.	each	0		R -
B.1.1	Provide a detailed breakdown of outage scope complete with time allocation to be handed to the Project Co-ordinator at the outage planning meeting prior to the outage - [minimum of 48 hours]	each	0		R -
B.2	**Programme and Planning**				
B.2.1	Contractors must allow for the preparation of a detailed programme reflecting the outage dates.	each	3		R -
B.3	**Site Establishment**				
B.3.1	Office complete as per works information	weeks	12		R -
B.3.2	Staff Accommodation	weeks	12		R -
B.3.3	Stores	weeks	12		R -
B.3.4	Water, Sanitation and Electricity	weeks	12		R -
B.3.5	Communication	weeks	12		R -
B.4	Supervision	weeks	12		R -
B.5	Site Security as per works information	weeks	12		R -
B.6	Plant and Equipment	weeks	12		R -
B.7	Cost for Health and Safety measures	weeks	12		R -
B.8	Transport to site and back for Staff (Local)	weeks	12		R -
B.9	Other time related charges (specify hereunder):	weeks	12		R -
B.10					
				Sub Total 'B'	**R -**

TOTAL CARRIED FORWARD TO SUMMARY PAGE 'B'

MQIKELA SENIOR SCHOOL CIVIL & PRIMARY PLANT BOQ

Item No.	Ref. DRG. No. Proj. Spec.	Description of the item	Unit	Quantity	Material Rate	Labour Rate	Total Price Rands
C1		Civil Works					
1.1		Extra over all excavations:					
1.1.1		Intermediate material (Provisional amount).	m^3	3			R -
1.2		Extra over all excavations:					
1.2.1		Hard rock material (Provisional amount).	m^3	1			R -
1.3	SANS 1200 C	Site Clearance:					
1.3.1	8.2.1	Clear and strip site.	m^2	9			R -
1.4	SANS 1200 D	Excavation:					
1.4.1	8.3.1.2	Remove topsoil to nominal depth 150mm including loose rock, stockpile and maintain.	m^3	9			R -
1.5		ESS Slab/Foundation:					
1.5.1		Supply and Install (1600*1500*300)	m^3	1			R -
1.6	D-DT- 4407 Rev 0	Yard stone ((26-38mm)					
1.6.1	Sht 1A	Supply and Install	m^3	1			R -
1.8	Project Specification	Excess material:					
1.8.1		Remove excess material from platform and dispose of at demacrated site at a rate of (cube/km).	m^3/km	---	Rate only		R -
1.9		Excess material:					
1.9.1		Remove excess material from platform and dispose of within site boundary, make good and level.	item	item	n/a		R -
1.10		Weed killer:					
1.10.1		Supply and spray (Project specification).	m^2	9			R -
1.11							
1.11.1							
		Total C1					R -

MQIKELA SENIOR SCHOOL CIVIL & PRIMARY PLANT BOQ

Item No.	Ref. DRG. No. Proj. Spec.	Description of the item	Unit	Quantity	Material Rate	Labour Rate	Total Price Rands
C2		Erection of Steelwork					
2.3	D-DT-5237 Rev 2	Palisade fence swing gate (5m) : (1 x 5m = 2 x 2.4m)					
2.3.1	Sht 7E	Supply Prepare and Install Palisade gate.	no	1			R -
2.4		High Security Single sheet Mesh fence panels (3m): Cage for ESS					
2.4.1		Supply, prepare area and install.	m	9			R -
2.5		High Security Single sheet Mesh fence gate: Modified panels (0.5-2m)					
2.5.1		Supply, prepare area and install.	m	2			R -
2.6		High Security Single sheet Mesh fence gate: 1.5m access gate					
2.6.1		Supply, prepare area and install.	m	1			R -
2.7		Fence, Gate and ESS Cage Signs/Labels					
2.7.1		Supply and install label on each ESS cage, Fence and Gates	no	4			R -
2.8		ESS Sheeted Cover					
2.8.1		Supply and Install (3m x 3m)IBR sheeting on Cage to cover the ESS	no	1			R -
2.11		Fire Safety					
		Total C2					R -

MQIKELA SENIOR SCHOOL CIVIL & PRIMARY PLANT BOQ

Item No.	Ref. DRG. No. Proj.	Description of the item	Unit	Quantity	Material Rate	Labour Rate	Total Price Rands
C3		Conductor, Clamps and Earthing					
3.1		Earth rod, copper-clad M16, 1.5 m, 250 µm (ACDC ER1516)	ea	1			R -
3.2		Earth rod coupler M16 (ACDC ERA03)	ea	1			R -
3.3		Driving tip for earth rod (ACDC ERA02)	ea	1			R -
3.4		Driving cap for earth rod (ACDC ERA01)	ea	1			R -
3.5		Earth inspection pit, polymer (WJ Furse PT205)	ea	1			R -
3.6		Conductive earthing compound/backfill 25 kg (ACDC E175)	bag	1			R -
3.7		Bare copper earth conductor 25 mm² (per metre)	m	2			R -
3.8		G/Y insulated earth wire 16 mm² (100 m coil)	coil (100m)	1			R -
3.9		Main earth bar 2×12-way (ElectroMechanica MRS3005)	ea	1			R -
3.10		DIN earth bar 12-way, 6×9 mm (Key Electric / ACDC class)	ea	1			R -
3.11		Rod-to-cable clamps for 16 mm rod / 25-70 mm² cable (pack of 10)	pack (10)	1			R -
3.12		Miscellaneous	value				R -
		Total C3					R -

SMART TECHNOLOGY BOQ including Rates
DISTRIBUTION

System Parameter	
Minimum PV (Wp)	20.48
Minimum BESS (kWh)	41kWh

BILL OF ACTIVITIES

ITEM	DESCRIPTION		UNIT	SUPPLY QTY	SUPPLY RATE	SUPPLY TOTAL	LABOUR QTY	LABOUR RATE	LABOUR TOTAL	GRAND TOTAL
B	**PRE-CONSTRUCTION**									
1	**Site Assessment**	Initial site visit:Contractor to evaluate existing infrastructure and do all safety assessment. Contractor to do circuit analysis of existing electrical circuits per existing DBs.	Sum	1			1		R -	R -
2	**System Detailed Engineering & Design**	Electrical single-line diagrams, string design, mounting layout, earthing, switchgear design, protection. Comply with NRS / SANS standards.	Sum	1			1		R -	R -
		SUB-TOTAL B				R -			R -	R -
C	**CONSTRUCTION**									
1	**Modules**	**Mono-PERC / TOPCon, 640 Wp, Tier-1 manufacturer, IEC 61215 & IEC 61730 certified, PAN file available**								
1.1	PV Solar Modules	Mono-PERC / TOPCon, 640Wp, Tier-1 manufacturer, IEC 61215 & IEC 61730 certified, PAN file available. (Including MC4 compatible male/female connectors, warning & identification labels, earthing lugs, etc)	Each	32		R -			R -	R -
1.2	Module-Level Power Electronics / Optimisers	Shade-tolerant sites: consider DC optimisers or microinverters. Priced as option / provisional sum.	Each	32		R -			R -	R -
2	**AC ELECTRICAL & DISTRIBUTION**									
2.1	Main DB Upgrade / New DB	Two row, 30-WAY Distribution Board with DIN rails, IP31 minimum; earth bar, neutral bar.	Each	1		R -			R -	R -
2.2	Switch Disconnector	60A 4P, 3-Phase AC Manual Switch Disconnector with a lockable OFF position, Lock-Out Tag-Out (LOTO) capable. (Acting as Dead Grid Safety Lock equivalent) kiosk. (SANS/IEC 60947-3)	Each	1		R -			R -	R -
2.3	Moulded Case Circuit Breaker(MCCB)	Moulded Case Circuit Breaker (MCCB): 60A, 4-Pole, 10kA, 400VAC, Thermal-Magnetic Adjustable Trip Unit, terminal shrouds, phase barriers, mounting accessories, and lockable OFF position.	Each	1		R -			R -	R -
2.4	60A Residual Current Device (RCD)	3-Phase, 4P, 60A S-Type (Selective/Time Delayed), 100mA rated residual operating current that conforms with SANS 10142-1	Each	1		R -			R -	R -
2.5	Surge Protection (AC SPD Type II)	400VAC, 20kA,4P, Type II	Each	1		R -			R -	R -
2.6	60A MCB	60A 3-Pole C-Curve MCB, 400VAC, 10kA breaking capacity	Each	4		R -			R -	R -
2.7	40A MCB	40A 3-Pole C-Curve MCB, 400VAC, 10kA breaking capacity	Each	3		R -			R -	R -
2.8	AC Cable , 25 mm²	25 mm² armoured 4-core Aluminium cable	m	200		R -			R -	R -
2.9	AC Cable, 3-core, 6 mm²	XLPE Cable, armoured	m	250		R -			R -	R -
2.10	AC Cable,3-core, 10 mm²	XLPE Cable, armoured	m	250		R -			R -	R -
2.11	Pole mount Kiosk	Pole mounted distrbution kiosk to house 60A MCCB, Smart Energy Meter, 40A MCBs, 60A ATS, SPD, RCD	Each	1		R -			R -	R -
2.12	Pole mount Kiosk	Installation of pole mounted to kiosk (IP66, 1.5mm 30c0r12 steel, Earth kiosk powder coated NB as per Eskom standard the switch disconnector in 3.2	Each	1		R -			R -	R -
2.13	164546	X/ARM,POLE:140-159; LG 2.5M WOOD	Each	2		R -			R -	R -
3	**PV DC ELECTRICAL & DISTRIBUTION**									
3.1	PV DC Cable	6 mm² red and black PV cable	m	200		R -			R -	R -
3.2	DC String Combiner Boxes	Outdoor DC String Combiner Box. Able to accommodate 4 fuse holders, 2 SPDs, and 2 DC isolators	Each	2		R -			R -	R -
3.3	String Fuses	gPV 20 A,20kA, 2-Pole, 1000VDC fuses	Each	4		R -			R -	R -
3.4	DC Isolator	40A, 1000VDC Isolator	Each	4		R -			R -	R -
3.5	Surge Protection (DC SPD Type II)	600 VDC, 20 kA, Type II 2P, installed in a combiner box.	Each	4		R -			R -	R -
3.6	UV Resistant Cable Conduit	UV resistant cable conduit to cater for four overhead 6mm^2 DC cables	m	450		R -			R -	R -
3.7	Cable Glands IP65 rated	Metric thread, per cable OD.	Packet	1		R -			R -	R -
3.8	Earth conductor	6 mm² insulated copper earth conductor	m	150		R -			R -	R -
4	**CHANGEOVER SWITCHES**									
4.1	60A Automatic Changeover Switch (ATS)	Automatic Transfer Switch - Provision for PV - Utility interchangeability	Each	1		R -			R -	R -

5	**METERING & MONITIORING**									
5.1	Bi-directional Smart Meter (MID Class B, 3-phase)	100 A, DIN rail, RS485 Modbus; required for SSEG/NRS 097-2-1 compliance.	Each	1		R -			R -	R -
5.2	Power Quality Analyser (RS485 / MID Class)	3-phase harmonics, THD, PF, voltage sag/swell; EN 50160 logging.	Each	1		R -			R -	R -
5.3	CT Clamps	Matching CTs sized to main incomer current.	Each	3		R -			R -	R -
5.4	Monitoring Gateway / Edge Controller	Modbus → MQTT / cloud; local data logger with minimum 30-day buffer.	Each	1		R -			R -	R -
5.5	Remote Monitoring Platform Subscription	Cloud dashboard (e.g., Solar-Log, GoodWe SEMS, Solarman, SolisCloud, DeyeCloud, Sunsynk Connect, or open-source HA). 12-month initial subscription.	Each	1		R -			R -	R -
5.6	4G Router with External Antenna	For sites without fixed broadband; SIM-slot; outdoor IP65 antenna.		1		R -			R -	R -
5.7	Cellular Data SIM Subscription	Monthly data plan for inverter / gateway monitoring.	month	1		R -			R -	R -
5.8	Smart Energy Meter (RS485)	to measure grid import and export, site consumption, battery management. Model recommended by inverter manufacturer	Each	1		R -			R -	R -
5.9	RS485 LTE Modem	The PUSR LTE modem DR154 is an ultra-small size industrial cellular modem designed for seamless data trans mission between RS485 devices and the 4G network. It supports mult iple protocols such as TCP, UDP, HTTP, and MQTT, and includes fe atures like heartbeat and registration packets for reliable connectivity. The modem is compact, making it suitable for space-constrained setups, and it supports Modbus TCP/RTU conversion, al lowing integration with traditional serial devices.	Each	1		R -			R -	R -
6	**BOS (BALANCE OF SYSTEM)**									
6.1	Two door Grid/PV Distribution Kiosk	Houses the protection, isolation, metering, and control equipment between the PV array, inverter(s), and the grid or building electrical system including cable glands. Dimensions 1800 × 1200 × 600 mm.	Each	1		R -			R -	R -
6.2	Safety & Identification Labels	Labels for circuit IDs, and warning signages	Lot	1		R -			R -	R -
6.3	Copper Earth Bars	25×3 mm, 12-way, with green/yellow shroud.	Each	1		R -			R -	R -
6.4	DC SPD 1000 VDC 40 kA 2P	1000VDC, 40kA, 2P	Each	1		R -			R -	R -
6.5	AC Isolator 100A	400–415 V AC, 4 Pole (3 Phase + Neutral)	Each	2		R -			R -	R -
6.6	60A Relay/Contactor	60A relay/contactor with 2 NO and 2NC contacts for Neutral Earth Bonding (for grid neutral isolation for islanding/off grid mode operation)	Each	1		R -			R -	R -
6.7	Conduit Sealing Compound / Fire-Stop Putty	Fire-rated sealing at all cable penetrations through fire-compartment walls/floors.	Packet	3		R -			R -	R -
7	**FIRE SAFETY & EMERGENCY**									
7.1	Fire Extinguisher 9 L AVD Lithex (Lithium fire rated)	Class F/D lithium-rated	Each	2		R -			R -	R -
8	**ENERGY STORAGE SYSTEM ESS PACKAGES**									
8.1	20kW-41kWh ESS Supply & Install	Complete Installation: Inverter(20kW), batteries(10.24kWh*4=41kWh), HVAC (12000BTU), All necessary Protection, Cable glands/accessories etc.	Sum	1		R -			R -	R -
9	**TRENCHING**									
9.1	Cable Trenching (DC/AC cables)	~150 m; includes excavation, backfill, warning tape, reinstatement.	m3	250		R -			R -	R -
9.2	CableLaying	Including cable markers	m	300		R -				
9.3	Cable Backfill Materials	Screened sand, red warning tape, marker tape.	Sum	300		R -			R -	R -
9.4	Cable Sleeves / Ducts Through Plinth	HDPE sleeve per cable entry.	m	330		R -			R -	R -
9.5	Concrete Cutting / Core Drilling	For cable route penetrations through walls or slabs.	m2	100		R -			R -	R -
		SUB-TOTAL C				**R -**			**R -**	**R -**
D	**MISCELLANEOUS**									
1		Allow for the following end items to be applied as per relevant Eskom instructions/bulletins/procedures and standards where not already allowed for in structure package.	Sum	1		R -			R -	R -
		SUB-TOTAL D				**R -**			**R -**	**R -**
E	**POST CONSTRUCTION**									
1	Testing, Commissioning , COC, O&M Manual & Handover Pack (NEW)	Functional tests, safety checks, inverter commissioning, Certificate of Compliance (CoC) by a registered electrician per SANS 10142-1 / SANS 10142-1-2. (SAPVIA PV GreenCard compliance or equivalent.	Sum				1		R -	R -
2	Warranty Management Schedule (NEW)	12-month defects liability schedule; contact list for equipment warranties (panels 25 yr, inverter 5 yr min, battery 10 yr min).	Sum				1		R -	R -
3	Performance Monitoring Report (3-month for a period of 12 months) (NEW)	Post-commissioning yield vs design comparison; power quality compliance report.	Sum				1		R -	R -
4	Quarterly Preventive Maintenance Contract (NEW)	Cleaning, thermal scan, torque check, firmware updates, report. Price per quarter.	quarter				4		R -	R -
		SUB-TOTAL E				**R -**			**R -**	**R -**
		TOTAL ELECTRICAL				**R -**			**R -**	**R -**

PART 3: SCOPE OF WORK

Document reference	Title	No of pages
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C3.1: EMPLOYER'S WORKS INFORMATION

Contents

When the document is complete, insert a 'Table of Contents'. To do this go to: Insert, → Reference, → Index and tables → Table of Contents. Three levels and the title (but not the subtitle) may be shown if the formats used in this template are retained.

1 Description of the *works*

1.1 Executive overview

Eskom Distribution has initiated a project to establish a ground mounted PV system, consisting of Solar PV and battery backup, at Mqikela Senior Secondary School.

The objectives of the project are to:

a) Support an Eskom strategic initiative: Reducing Eskom's carbon footprint and pursuing low carbon growth opportunities,
b) Establish ground mounted PV system when a loss of grid is detected (continuous supply),
c) Provide renewable electricity to the facility for own consumption, by using the PV supply as a primary source of supply and the grid as a back-up supply.
d) Export excess solar energy to the grid.
e) Support future peak energy shaving (load shifting/load reduction).

The purpose of this document is to define functional requirements and design constraints within which the contractor has to execute.

1.2 *Employer*'s objectives and purpose of the *works*

SCOPE OF WORKS

Contractor to:

1) Do site assessment as per provided drawings.
2) Verify that the drawings are correlating with the site.
3) Identify cable routing to various Distribution Boards (DBs')
4) Verify the size of the main circuit breaker and confirm with the Design Engineer to ensure proper protection cascading with other DBs'.
5) Once site verification is completed the contractor to execute scope as follows:
6) **The contractor to:**
   a) Mount 32*640Wp modules in a portrait orientation on a ground mounted Solar PV structure roof facing **NORTH.**
   b) Wire the 4mm2 DC cables to the DC combiner box, and then to the inverter.
   c) Contractor to install a bidirectional meter next to the transformer.
   d) Wire the 50mm2 +/-100m AC cable from the bidirectional meter to the disconnector switch inside the AC kiosk. Wire from the disconnector to the inverter.
   e) Wire the 50mm2 AC cable from the inverter output to the AC distribution board.
   f) Wire the 16mm2 cable from the new AC Distribution board to the grid's main AC distribution board.
   g) Wire the 4mm2 cable from the new AC Distribution board to the grid's AC in the office room (A).
   h) Wire the different 4mm2 cables from the new AC Distribution board to the grid's AC in the classrooms B to H, separately.
   i) Contractor to distribute to different blocks as per table below:

From Block	To Block	Cable size mm2	Approx. Distance (m)	Source MCB (A)	ATS (A)
ESS AC kiosk	A	16mm2	±80m		80
Main grid supply	ESS AC Kiosk	50mm2	±80m		
ESS AC kiosk	B	4mm2	±50m		80
ESS AC kiosk	C	4mm2	±30m		80
ESS AC kiosk	D	4mm2	±30m		80
ESS AC kiosk	E	4mm2	±30m		80

ESS AC kiosk	F	4mm2	±50m		80
ESS AC kiosk	G	4mm2	±70m		80
ESS AC kiosk	H	4mm2	±90m		80

j) Contractor to install an 150A three phase 4 pole Automatic Change Over switch next to newly installed kiosk to bypass the PV Solar system during its failure and automatically supply the load with Grid supply.
k) Contractor to do all tests and commission the PV installation.
l) Contractor to provide CoC of the newly installed system to Eskom
m) Contractor to provide as built drawings to Eskom upon project completion should there be scope changes during construction.
n) Supply and install mount a 1*9L AVD Lithex Portable Fire Extinguisher as per Annexure A.
o) Existing School Wiring: Contractor to assess the existing DB wiring and work on the DB only if it is wired as per required standard. Should the DB be substandard, the contractor shall notify the Clerk of Works and communicate such findings with the design engineer.

1.3 Interpretation and terminology

The following abbreviations are used in this Works Information:

Abbreviation	Meaning given to the abbreviation
PM	Project Manager
CPE	Contract Project Engineer
CPM	Contract Project Manager
EMP	Environmental Management Program
PE	Project Engineer
PES	Project Engineer Specialist
FDP	Final Design Package
T&Q	Technology and Quality Department - Eskom

2 Management and start up.

2.1 Management meetings

Regular meetings of a general and Legal nature shall be convened and chaired by the *Project Manager/Project co-ordinator or representative so delegated by Eskom* Holdings SOC Limited. *As part of the contractor's responsibility with an* objective of minimizing the adverse effects of risks and surprises for both Parties, *meetings shall be held at reasonable times as defined* OHS act as follows:

Title and purpose	**Approximate time & interval**	**Location**	**Attendance by**
Kick-Off Meetings		On site	e.g. *PM, Contractor, Supervisor,* and_____
Risk register and compensation events	Weekly on at		
Overall contract progress and feedback	Monthly on ___ at		*e.g. Employer, Contractor, Supervisor,* and
Technical Site Meetings			

Health, Safety & Environmental Meetings			
Community based Meetings			

Meetings of a specialist nature may be convened as specified elsewhere in this Works Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the *works*. Records of these meetings shall be submitted to the *Project Manager* by the person convening the meeting within five days of the meeting.

All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting. Such minutes or register shall not be used for the purpose of confirming actions or instructions under the contract as these shall be done separately by the person identified in the *conditions of contract* to carry out such actions or instructions.

2.2 Documentation control

All contractual Documentation must have relevant contract number and Purchase Order Number as reference as per Eskom Holdings SOC Limited Standards (List). Contractual communications will be in the form of properly compiled letters, letters attached to emails, emails, NEC template and urgent contractor meetings can be in the form of sms and as outlined on core clause 13 of the NEC3 ECC.
The use of sms's, emails does not override the use of applicable and relevant NEC3 ECC standard templates, forms and Eskom Holdings SOC Limited procedures.
Note: It is the contractor responsibility to acquire and familiarize themselves with the NEC3 ECC.

2.3 Health and safety risk management

The *Contractor* shall comply with the health and safety requirements contained in Annexure 32-136 to this Works Information.

The contractor SHE files should be submitted and approved within 5 working days. The contractor is given one opportunity to correct within one day of failing which Eskom reserves the right not to issue the task order.
The Contractors Project SHEQ File is to be updated on a continuous basis. The Contractor is to ensure that all relevant documentation and authorisations are contained in the file pertaining to the project. Upon completion of the project, the Contractor is to convert all documentation contained in the SHEQ file into electronic format and save it as a PDF File. The file name should contain the name of the Contractor and the project. The file should then be saved onto a disk or removal storage device and handed over to the *Project Manager* upon completion of the project.

2.4 Environmental constraints and management

The *Contractor* shall comply with the environmental criteria and constraints contained in the FOP and attached in Annexure B to this Works Information and consist of the following documentation to comply with:

- Environmental Legal Compliance for Eskom Distribution Projects with DESD's signed
- DESD Process applicable to a particular Eskom OU
- 240-71555318 Distribution generic EMP for operations Maintenance Standard
- DPC_34-926 doc incorporating Water use issues draft 1(3) (Repaired) draft 0A

Notes and Requirements for Environmental Compliance

- Contractors must be aware of environmental specifications in contracts and comply with them;
- Contractors building new lines and substations, and performing maintenance on existing infrastructure to attend environmental law course;
- Legal contraventions involving contractors to be communicated to all other contractors to avoid recurrence;
- Contractors to follow and comply with EMP's provided;
- Contractors building new assets or maintaining existing assets to always have a copy of the EMP, EA and any other permits (tree, water, heritage) available on site where such documents exist;

- Contractors assisting with self-build projects for third parties to attend the DESD course;
- Contractors assisting with self-build projects for third parties to ensure that the relevant documentation including the DESD is handed over to and approved by the Land Development section. Such contractors take
- liability for the completion of the DESD;
- All environmental incidents to be brought under the attention of the Eskom Holdings SOC Limited representative within 24 hours;
- Contractors must demand/request a copy of the DESD for their projects);
- Read and understand the DESD and EMP;
- (K) Ensure all relevant staff are aware of the conditions of the DESD and EMP;
- Review DESD and EMP before tendering;
- Authorizations are only issued for specific projects after submissions of the Basic Assessment.

2.5 Quality assurance requirements

Quality Control

- An approved Quality Control Programme is to be implemented in conjunction with, and to the approval of, the *Project Manager*.
- The Quality Control Document for Schools PV Rooftops is to be used per construction stage and signed off by the relevant people indicated in the document.
- The following Quality Control stages to be documented:
  1. Stage 1 **Execution:** Route selection
  2. Stage 2 **Execution:** Excavation
  3. Stage 5 **Execution:** Backfilling
  4. Stage 6 **Execution:** Importing soil
  5. Stage 7 **Execution:** Trenching and Backfilling
  6. Stage 8 **Execution:** Cable Installation
  7. Stage 9 **Execution:** Cable Transportation and Storage
  8. Stage 11 **Execution:** Wall Mounted:
  9. Stage 12 **Site Acceptance Testing:** Outdoor integrated Energy storage system (ESS)
  10. Stage 15 **Site Acceptance Testing:** BESS
  11. Stage 16 **Site Acceptance Testing:** Inverters
  12. Stage 17 **Site Acceptance Testing:** PV modules (individual or strings), including
  13. Stage 18 **Training**
  14. Stage 19 **Operation and Maintenance (O&M)**

Quality Engineering

- All construction and installation methods are to comply with the *Power Delivery Engineering* standard requirements as contained in the National and Provincial Standards on the Distribution Technology websites.
- The Contractor shall comply with the Project Specifications included in the FDP document. Any changes proposed during the construction phase shall notify the Project Manager who will follow the Project Change Request approval process.
- Eskom Holdings SOC Limited's representative must be notified at least 30 days prior to the commissioning of the substation (in the case of a substation).
- Eskom Holdings SOC Limited's representative must be allowed access to the site at any time during the construction to carry out an inspection of the works.
- Before the start of the construction stage, the Contractor will confirm with the Clerk of Works which activities are identified as Holding Points/milestone and which activities he would like to be photographed as proof for compliancy if not present. A Holding Point is an activity for which arrangements have to be made for the Clerk of Works to be present and to witness the work procedure.
- Each stage, once completed by the contractor, will be signed off by both the Contractor and Clerk of Works. The Clerk of Works will indicate whether the activity was:
  - Witnessed (W) - present during this activity
  - Verify (V) - not present but confirm compliancy.
- Once all the activities have been completed, the Quality Control Programme shall be presented to the Project Manager to sign off the Handover Certificate of each stage.

2.6 Programming constraints

The contractor shall submit his construction program in terms of the conditions of contract. This program shall be submitted according to Part one – Data provided by the *Employer* (Time).
This program shall contain at least the *Key dates* as reflected on Part one and the following activities with scheduled start and completion dates:

- Site Establishment
- Route selection
- Excavation
- Backfilling
- Importing soil
- Trenching and Backfilling
- Cable Installation
- Cable Transportation and Storage
- Wall Mounted
- Site Acceptance Testing: Outdoor integrated Energy storage system (ESS)
- Site Acceptance Testing: BESS
- Site Acceptance Testing: Inverters
- Site Acceptance Testing: PV modules (individual or strings), including
- Training
- Operation and Maintenance (O&M)

Every activity on the programme will be clearly linked to a **labour** resources and **equipment** required to perform the specific activity.

Weather delays based on the rainfall data supplied under Part 2 (C1.2 Annexure A), must be included in the programme. Only weather delays over and above the specified number of rain days will qualify for evaluation as delays.

Completion and hand-over dates for formal inspection by the site supervisor must be indicated.

Project expenditure (cash flow projection) on a monthly basis for the entire duration of the contract must be indicated.
The Contract Program will be on display in the *Contractor*s *Site* Offices and will be updated weekly.
In addition to the maintaining of this programme, the Contractor will report progress to the Project Manager on a weekly basis.
Should any deviations to the program be found, the *Contractor* shall submit a revised program to the *Project Manager* within one week.
The *Project Manager* retains the right to alter the Accepted Program should circumstances on *site* necessitate such a change.
The following Statutory non-working days are included within the contract period:

- All Public Holidays for the duration of the contract.
- The programme must clearly indicate the working days for the entire construction period or alternatively all the non-working days within the construction period.

2.7 *Contractor*'s management, supervision and key people

The *Contractor* shall also provide a detailed organization chart showing the personnel to be employed for the *works,* along with Training certificates of all key personnel. Contractors to submit proof to Eskom that their Contracts manager or delegated employee representative has NEC ECC training. A full definition of ONE team shall form part of the organization chart per project and identity number shall form part of this document.

2.8 Invoicing and payment

Within one week of receiving a payment certificate from the *Project Manager* in terms of core clause 51.1, the *Contractor* provides the *Employer* with a tax invoice showing the amount due for payment equal to that stated in the *Project Manager's* payment certificate.

The *Contractor* shall address the tax invoice to Eskom Holdings SOC Ltd and include on each invoice the following information:

- Name and address of the *Contractor* and the *Project Manager;*
- The contract number and title;
- *Contractor*'s VAT registration number;
- The *Employer*'s VAT registration number 4740101508;
- Description of service provided for each item invoiced based on the Price List;
- Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT;
- (add other as required)

Note: All material purchased by the contractor will be paid once they have been installed. The risk of paying the material prematurely delivered to site will remain with the contract.

Financial records are to be kept by the Contractor on any additional items not included in the original Scope of Works/Activity List.

An **EPWP (Expanded Public Works Programme)** report must accompany each invoice as part of the approval and acceptance process of the monthly assessment and reporting stage.

Add procedures for invoice submission and payment (e. g. electronic payment instructions)

2.9 Insurance provided by the *Employer*

The insurance provided by the *Employer,* is addressed under the contract data by the *Employer* under Annexure B "Insurance provided by the Employer". In this case Format Dx is applicable for this contract.

2.10 Contract change management

For any compensation event relating to changes to scope and additions to scope which were not part of the original scope, such changes shall be treated under compensation event core clause section 6 of the NEC3. The contractor shall notify the Project Manager of any changes to Site Personnel within 5 (Five) working day

2.11 Training workshops and technology transfer

Technological requirements and standards that are applicable at this stage of contract establishment may change and contractors are required to comply with latest standards. In the event that this results in a cost implication, this will be dealt with according to section 6 of the NEC/ECC Contract.

Contractor shall comply with all SD&L requirements relating to training, workshops and any technology transfer obligations.

3 Engineering and the *Contractor*'s design

The contractor shall execute the works as per the Employer's Final Design Package (FDP)/ Detailed Design Package (DDP). (PCR to advise)

3.1 *Employer*'s design

The Employer will supply Contractor with a final design document compiled by the Project Engineer detailing the scope of work to be executed on the project as well as Project Drawings.

3.2 Equipment required to be included in the *works*

The Contractor shall propose at the start of the project and Project Manager/ Engineer to approve.

3.3 As-built drawings, operating manuals and maintenance schedules

The Contractor completes as-built drawings and as-built schedule of quantities per transformer zone handed over as completed. The Contractor submits these as-built drawings and as-built schedule of quantities as part of the hand-over documentation in line with the completion dates indicated on the approved construction programme.

Should there be conflict between the specification and drawings, then documentation shall be considered in the order of priority set out below:

- Tender Correspondence/Minutes/Site Instructions
- Approved Sample Line
- Works Information & Final Design Package
- Drawings
- Power Delivery Engineering Standard
- Should the Contractor note any inconsistency between the specification and drawings he shall notify the Project Manager and obtain clarification or instructions prior to collecting and installing materials and plant for the work.

4 Procurement

4.1 People

4.1.1 Minimum requirements of people employed on the Site

Extended Public Works Programme (EPWP) shall be applicable on all projects. The EPWP report template is included as supporting documentation and forms part of this Contract.

To be compiled by the Contractor:

- Base indicators to be collated on all EPWP projects (Table 1)

Table 1: Base indicators to be collected on all EPWP projects

B1 Number	Project level Indicator to be used in monitoring system	Comments
1	Number of people ("Different warm bodies") employed on relevant project	Will be assumed to be equivalent to number of job opportunities created. Will measure the number of people to benefit directly from the EPWP
2	Person-days of employment created	Total number of person days created will be divided by 230 to convert to person years of employment created
3	Minimum wage rate	Since local public bodies may set the wage rate as part of the EPWP to wage rate on a particular project will need to be reported
4	Number of training days provided	Since all workers are entitled to training it is important to ensure that actual training is delivered
5	Overall spending on the project	Will give an indication of how much is actually spent on EPWP projects
6	Demographics of workers on EPWP Projects	The percentages of women, youth and disabled to be reported on.

- KPI to be used for the EPWP (Table 2)

Table 2: KPI's to be used for the EPWP

KPI	KPI	Method for calculation	Comment

1	***Number of Job opportunities created***	Assumed to be equal to number of warm bodies employed per project	Will give an indication as to how many unemployed people benefit directly from the EPWP
2	***Person years* of *employment created***	Divide the total number of person days of all projects by 230 (Agreed upon number of person days of employment per year)	Indicator that shows the equivalent number of full-time jobs created
3	***Number of training days provided***	Total sum from all projects	Measure total amount of training provided
4	***Overall spending on EPWP projects***	Total sum from all projects	Measure total government spending on the EPWP
5	***Demographics of workers on EPWP projects***	Total sums of the project totals of **women,** youth and disabled employed	Measures the demographics of the people benefiting from the EPWP
6	***Average length of employment created***	Divide person years of employment created (KPI 2) by number of job opportunities (KPI 1)	Also allows comparison between sectors and types of projects
7	***Total income paid out to previously unemployed workers***	Multiply number of person-days (BI 2) by the minimum wage (BI 3)	
8	***Average income of EPWP worker***	Divide Total income (KPI 6) by Number of job opportunities (KPI1)	
9	***Average duration of training provided***	Divide total number of training days (KPI 3) by number of job opportunities (KPI 1)	Provides an indication of the level of skills build in the programme
10	***Percentage of spending paid out to EPWP workers***	Divide total income paid out (KP\ 6) by Overall spending on EPWP (KPI 4)	Measure the labour intensity of the EPWP

4.1.2 BBBEE and preferencing scheme

The “PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2011” is applicable as described under the “Invitation to Tender” section.

4.2 Subcontracting

4.2.1 Preferred subcontractors

Any appointment of a subcontractor by the *Contractor* is to be approved by the *Project Manager.*
The *Sub Contractor* must be CIDB registered. A maximum of 25% of the Works may be sub-contracted subject to Project Managers approval.

4.2.2 Subcontract documentation, and assessment of subcontract tenders

The use of the NEC3 - ECSC is required.

4.2.3 Limitations on subcontracting

A maximum of 25% (unless otherwise agreed) of the Works may be sub-contracted subject to *Project Managers* approval.

4.2.4 Attendance on subcontractors

The *Contractor* is responsible for performing on the provided scope of work as if he had not subcontracted. The appointed *Contractor* will also be liable to the *Subcontractors’* employees, as he legally and liable to this contract.

4.3 Plant and Materials

4.3.1 Quality

The *Contractor* shall control his activities and processes in accordance with Eskom's Quality Requirements for Procurement of Assets, Goods & Services, QM-58 and ISO-9001.

All materials shall be new and of the best quality and shall conform to the requirements of the Eskom Buyers Guide (Eskom Distribution Standard Part 9). With regards to the material supply chain, the approved materials manufacturer and marking requirements shall be set out on a schedule and approved before construction.

4.3.2 *Contractor*'s procurement of Plant and Materials

All material is to comply with the **latest** Eskom Approved Manufacturer's List as published in the Southern Region by the Eskom T&Q Department. Any non-standard material items are to be approved by Eskom Holdings Limited before use on the project. Acceptance sampling is to be carried out on receipt of material on site in order to inspect the outward condition of the material item.
In exceptional cases which require materials and/or techniques which are not contemplated in the various Distribution standards shall be approved by the nominated **Senior Engineer, Ralph Reddy, Phone No: 043–703 2294**. The written approval shall be submitted together with the tender.

The *Contractor* will be required to arrange a material sample inspection on site according to the requirements supplied by the PE. At this inspection materials will be recorded and approved per item by the PE, the Eskom PES and the T&Q Department.

4.3.3 Spares and consumables

All hardware to be supplied by *Contractor* is to be as per Eskom Standards limited to Eskom's approval. All hardware and cost thereof shall be within the mandate that has been Eskom approved.

4.3.4 Title to site materials

On completion of the site establishment, materials supplied by the contractor must be delivered to site, recorded in the material management system, and neatly and safely stacked and stored by the contractor. Once the material components are inspected and approved, and accepted by the Project Manager and *Employer* Design representatives, the material value can be certified for payment by the Employer. The Contractor claims for the material value and supply invoices as proof of the Contractors title to the materials in support of the claim.

4.4 Tests and inspections before delivery

The *Contractor* will be required to arrange and supply the following:
Material Sample Inspection: - A sample of each material item is to be presented for an inspection by the Eskom T&Q Department. A 2 week notification period required.

4.5 Marking Plant and Materials outside the Working Areas

Where applicable. Subject to approval of the Clerk of Works.

4.6 *Contractor*'s Equipment (including temporary works).

The *Contractor* is to provide the necessary equipment to complete the *Works* safely and by the *completion date.* (Refer to item 5.9)

5 Construction

5.1 Temporary works, Site services & construction constraints

5.1.1 *Employer*'s Site entry and security control, permits, and Site regulations

The contractor provides a secure and accessible area for the Site Camp, which includes secure storage facilities and areas, etc. The location of the site camp shall be determined in consultation with the *Project Manager*, local communities, and the relevant authorities.

The *Employer* is to provide a 24 hour, 7 days a week, access and perimeter control unarmed security service from a reputable security firm. The security firm shall be registered with PSIRA and shall have a Grade D classification. At least one guard during the day and 2 x guards during night time is required for the duration of this contract. The *Contractor* must provide a suitable guard house for the security guards and to be priced as under item 1.2.5 in the Bill of Quantities.

On completion of the contract, the contractor removes the site camp and offices, and the area will be left in its original state to the satisfaction of the employer's representative and the Environmental Officer.

Site Establishment Costs

The *Contractor* shall take note that the total cost involved in establishing site services, facilities, and temporary works shall be incorporated in the Fixed and Time Related Preliminary & General costs part of the Bill of Quantity.

In situations where private roads must be used for construction purposes, the condition of the said roads shall be recorded (e.g. Photographed) prior to the use thereof and be agreed upon by the *Employer,* the *Landowner* and the *Contractor*. The *Contractor*, at all times at his expense, shall maintain all private roads used as access to the site of work by the *Contractor*. Upon completion of the work, the road shall be left in at least the condition it was prior to the commencement of the construction activities.

The Contractor should adhere to the Life Saving Rules at all times.
Due to the importance to safe life's and apparatus of Eskom it is recommended that if a contractor abuse any Life Saving Rules, all work allocated to the contractor will immediately put on hold until final outcome with investigation. Safety is the combined responsibility of the team and therefore team leader or team **will** be punished together. There are five cardinal rules that may not be broken by the Team Leader and his/her team.

5.1.2 Restrictions to access on Site, roads, walkways and barricades

Where possible, access along the power line must be established by utilizing existing tracks. Access roads shall only be constructed and maintained where necessary at watercourses, steep slopes or where boulders and rocks prohibit vehicular traffic. No access roads shall be constructed in and/or outside the power line servitude without the written instructions from the *Project Manager*.

5.1.3 People restrictions on Site; hours of work, conduct and records

Restrictions and hours of work will apply on Site. It is very important that the *Contractor* keeps records of his people on Site, including those of his Subcontractors which the *Project Manager* or *Supervisor* have access to at any time. These records will be needed when assessing compensation events.

5.1.4 Health and safety facilities on Site

The *Contractor* shall at all times adhere to the **Safety Health & Environmental Specification** attached in the Annexure of the contract document.

A Health & Safety Plan as well as the Health & Safety File as specified in the **Safety Health & Environmental Specification** must be kept on site and updated on a regular basis. Daily safety tailgate talks with task risk analysis shall be held and recorded to discuss the safety aspects and risks involved in the day's work to ensure safe operation throughout the contract period.

Health & Safety meetings shall be held at least once a month and records of minutes kept in the H&S file on site. The following items on the agenda to be discussed as a minimum requirement:

- Eskom Monthly Safety Theme – inform staff.
- Eskom Incident Case Studies and Recommendations
- OHS Act appointments – Updates, Validity, Expiry dates etc.
- PPE – issued and required.
- Safe Work procedures (Method Statements) – updates/changes
- Equipment – Inspection records updated
- Training requirements
- Staff Medicals
- Environmental issues

The *Contractor* shall not **be allowed to work on any "live" structures. All live structures are to be identified beforehand and shown to all the contractor's staff – notification to be official recorded and kept in the SHE file on site.**

The *Contractor* shall not be **allowed to leave any excavation open** without supervision. If foundations cannot be planted on the same day of the excavation, holes are to be closed over the night period or full time security guard to be arranged.

Machinery that can encroach on the safe working clearances with regard to live lines and equipment, are not to be operated within nine metres of live reticulation lines, without the direct supervision of a qualified supervisor under the *Employer's* HV Regulations and the OHS Act.

Precautions against Damage

The *Contractor* shall take precautions for the protection of life and property on, or about, or in connection with the contract. The *Contractor* shall be held liable for any damage arising from negligence on the part of himself and his employees. The *Contractor* will ensure that excavations are done carefully as per the construction drawings. The damages occurring during any required excavations will be for the contractor's risk, and must therefore be repaired by the contractor.

Protection of the environment should at all times be adhered to.

Customer & Client liaison

The contractor will ensure that all required outages be communicated to the *Project Manager* and that the necessary outage requests are tabled for approval at the Monthly Outage meetings of the applicable area.

5.1.5 Environmental controls, fauna & flora, dealing with objects of historical interest

The *Contractor* shall at all times adhere to the **Environmental Management Programme (EMP) and all referenced documents referred to in Section 2.4.**

No fences, gates or locks may be damaged to obtain access onto a line route. Arrangements must be made in advance to obtain permission for access.

Use of private roads must be arranged in advance. Any damage to private roads must be repaired at the contractor's expense and to the satisfaction of the landowner.

No fires may be lit on private property. If fires are lit on Eskom's property or in the construction camp, provision must be made that no accidental fires are started. No firewood may be collected in the veld.

No trees may be cut or removed without prior permission from the landowner. Permits shall be obtained for protected trees (protected trees shall be dealt with in special conditions)

5.1.6 Title to materials from demolition and excavation

The *Contractor* has no such title. All equipment and materials dismantled to be stored inside the *Contractor's* site camp. Disposal of this equipment and materials to be liaise with the Officer Investment Recovery – Mr Roelof Venter at 043-7032290.

5.1.7 Cooperating with and obtaining acceptance of Others

The *Contractor* is responsible to ensure that the landowners and/or local authority have been informed before any work is carried out on site. It is also the *Contractor's* responsibility to maintain a good relationship with the landowners and to ensure that the following procedures are in place:

1) Access arrangements to the property
2) Allowable construction times on the property to be agreed and documented

5.1.8 Publicity and progress photographs

Photographs can be captured to provide evidence with supporting documentation where applicable. These photographs shall have date and time stamps to be eligible for use.

5.1.9 *Contractor*'s Equipment

The *Contractor* is to provide equipment necessary to complete the *Works* safely and by the *completion date.* An equipment asset register is to be kept on site record is to be kept on site.

5.1.10 Equipment provided by the *Employer*

None

5.1.11 Site services and facilities

The *Contractor* shall provide on *Site* a minimum of one well illuminated, insulated and ventilated *site* office for utilisation by the *Employer* / *Project Manager* or their representatives. This *site* office shall have as a minimum the following:

- A Suitable water supply and sanitary facilities (chemical toilet).
- First aid facilities
- Telecommunication facilities (downloading of electronic communications and printing of it)
- Access to Eskom website to download latest information.
- 1 x Table, 10 x chairs required and a suitable office required to hold a site meeting.
- Site diary.

5.1.12 Facilities provided by the *Contractor*

Material Storage Area

The *Contractor* shall provide a secure fenced-in yard for the whole of the contract period. Storage facilities must be of such a nature that all the *Contractors* materials, including free issue materials (Employers materials) are safe from theft, fire hazards and vandalism. Fire breaks around the storage area, and fire-fighting equipment must be in accordance with the OHS Act, and of sufficient capacity to ensure the security of stored materials.

5.1.13 Existing premises, inspection of adjoining properties and checking work of Others

To be negotiated and agreed with the approval of the community liaison officer where applicable.

5.1.14 Survey control and setting out of the *works*

The *Contractor* must appoint an approved contract surveyor to assist with the setting out of all substation equipment and foundation positions. The appointed surveyor must provide feedback to the PE after setting out to ensure all possible problems with regards to obstacles, clearances are highlighted.

5.1.15 Excavations and associated water control

Refer to the Detailed Project Specifications in the approved Detailed Design Package/Final Design Package document. No excavations should be left open or unattended. If the Contractor encounters any rock during excavation, he/she must inform the Clerk of Works first to come and verify before he/she can use a mechanical boring device, drilling, compressor, or blasting and requires the approval of associated costs from the Quantity Surveyor.

5.1.16 Underground services, other existing services, cable and pipe trenches and covers

The *Contractor* shall be held liable for any damages caused during construction to existing services such as, underground water pipes, electrical cables, telecommunication cables, overhead lines, storm water pipes and existing roads.

It is the responsibility of the *Contractor* to contact the landowner and/or local authority to determine the position of such services to prevent any damages.

5.1.17 Control of noise, dust, water and waste

The *Contractor* shall within reason try and keep noise levels, dust and wastage to a minimum.

5.1.18 Sequences of construction or installation

As per the approved construction programme and in conjunction with the Quality Control Plan.

5.1.19 Giving notice of work to be covered up

The Project Manager/Clerk of Works shall always be notified.

5.1.20 Hook ups to existing works

As per approved FDP. All safety requirements shall be observed.

5.2 Completion, testing, commissioning and correction of Defects

5.2.1 Work to be done by the Completion Date

On or before the Completion Date the *Contractor* shall have done everything required to Provide the Works except for the work listed below which may be done after the Completion Date but in any case before the dates stated. The *Project Manager* cannot certify Completion until all the work except that listed below has been done and is also free of Defects which would have, in his opinion, prevented the *Employer* from using the *works* and Others from doing their work.

	Item of work	**To be completed by**
	As built drawings of	Within days after Completion
	Performance testing of the *works* in use as specified in paragraph of this Works Information.	See performance testing requirements.

The whole of the *Works* as described by the *Works Information* of this contract and in the Final Design package shall be completed on or before the *Completion Date.* Completion includes the completion and submission of hand-over documentation, as-built drawings, and completed defect lists. The *Contractor* pays delay damages for late completion in terms of the *Conditions of Contract.* Should the Contractor receive 3 non-conformances, preventative actions and corrective actions, Eskom reserves the right to terminate the Task order/Purchase order.

Outages & **Commissioning**

The contractor will prepare the scope of works required for the planned outage at each stage before the outage date. On the day of the outage, the required scope of work at this point is to be completed, checked and handed over to the TSC with the required handover documentation.

5.2.2 Use of the *works* before Completion has been certified

The *Contractor* will have to carry out the supervision of the installations, as per the instruction of the *Project Manager* then a *Sectional completion Certificate* shall be issued to the *Contractor.*

5.2.3 Materials facilities and samples for tests and inspections

From time to time random sample test and inspections may be requested, to ensure good quality of the goods being supplied

5.2.4 Commissioning

Commissioning is to be done before or after Completion depending on the Programme from the *Project Manager.*

5.2.5 Start-up procedures required to put the *works* into operation

In order to put the *works* into operation the *Project Manager* may require the *Contractor* to either do this for him or be in attendance whilst he does it, depending on who is the responsible person.

5.2.6 Take over procedures

Take-over is after or at the same time as Completion. The *Contractor* is to arrange an inspection before completion of the installation to inspect and identify any outstanding or any defects. The *Project Manager* may require the *Contractor* to provide assistance, on an as and when required basis.

5.2.7 Access given by the *Employer* for correction of Defects

The *Project Manager* arranges access for the *Contractor* to use a part of the *works* which has been taken over if needed to correct any Defects. After the *works* have been put into operation, the *Employer* may require the *Contractor* to undertake certain procedures before such access can be granted. The *Contractor* will be responsible for ensuring that the area to be worked in is barricaded before correcting any defects.

5.2.8 Performance tests after Completion

The *Contractor* will perform all tests required to bring the asset to service.

5.2.9 Training and technology transfer

The *Employer* requires the *Contractor* to provide training on the use of the access control or any associated transfer of technology from him to the *Employer*.

5.2.10 Operational maintenance after Completion

The *Employer* may require the *Contractor* before the *defects date* to perform certain duties after Completion and take over which relate to maintenance of the *works*.

6 List of drawings

6.1 Drawings issued by the *Employer*

This is the list of drawings issued by the *Employer* at or before the Contract Date and which apply to this contract.

Note: Some drawings may contain both Works Information and Site Information.

Drawing number	Revision	Title

C3.2 *CONTRACTOR*'S WORKS INFORMATION

This section of the Works Information will always be contract specific depending on the nature of the *works*. It is most likely to be required for design and construct contracts where the tendering contractor will have proposed specifications and schedules for items of Plant and Materials and workmanship, which once accepted by the *Employer* prior to award of contract now become obligations of the *Contractor* per core clause 20.1.

Typical sub headings could be

a) *Contractor*'s design
b) Plant and Materials specifications and schedules
c) Other

This section could also be compiled as a separate file.

PART 4: SITE INFORMATION

Document reference	Title	No of pages
	This cover page	**[01]**
C4	Site Information	**[01]**
	Total number of pages	**[02]**

PART 4: SITE INFORMATION

Core clause 11.2(16) states

"Site Information is information which

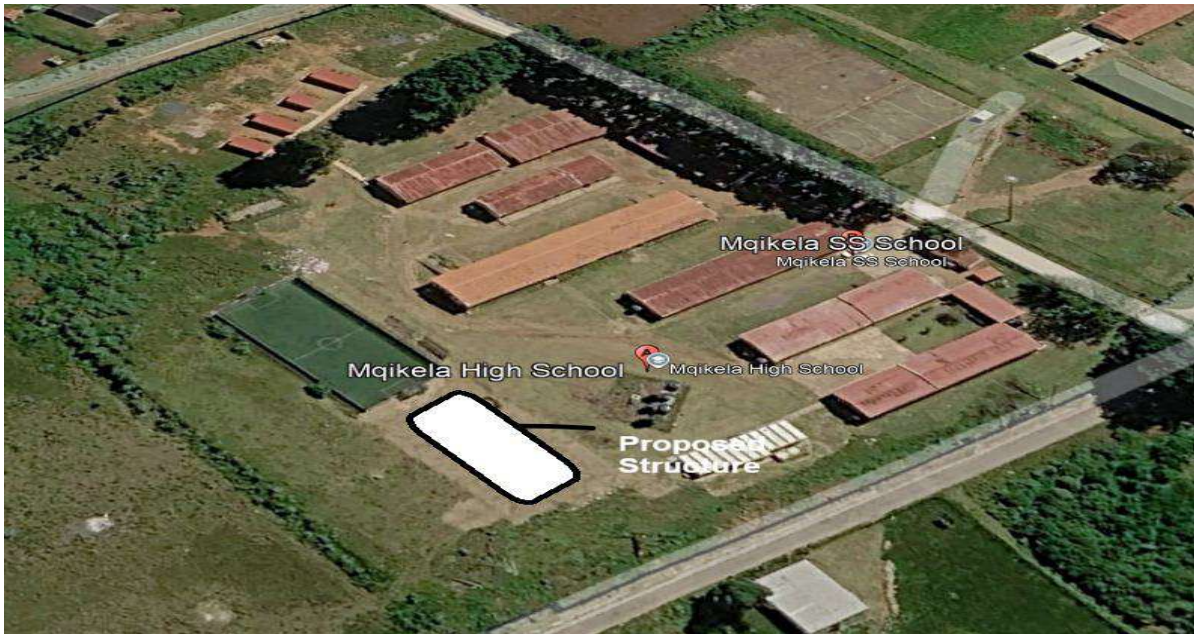
- describes the Site and its surroundings and
- is in the documents which the Contract Data states it is in."

In Contract Data, reference has been made to this Part 4 of the contract for the location of Site Information.

1. General description

The Area/Building site is located under the following address/coordinates:

- GPS Coordinates: 31°22'34.56"S & 29°35'41.44"E
- Location: Mqikela Senior Secondary School Eastern Cape, South Africa



2. Existing buildings, structures, and plant & machinery on the Site

Some of the existing infrastructure is indicated on layout drawings provided. Though it is the *Contractor's* responsibility, to familiarise himself with all existing infrastructure in and around the working place.

3. Subsoil information

All excavations and associated soil information are described under the Works information and Bill of Quantities. No geotechnical study or report provided.

4. Hidden services

In the event of a discrepancy between physical condition and the information on a drawing, the *Contractor* shall notify the *Project Manager* immediately if the physical condition found on *site* is such that the deviation from the drawing requires a change in the design of the *works*.