

The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year



## NEC3 Term Service Contract (TSC3)

**Between ESKOM HOLDINGS SOC LIMITED**  
**(Reg No. 2002/015527/06)**

**and (Reg No.)**

**for** The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year

---

**Contents:****No of  
pages****Part C1 Agreements & Contract Data**

The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year

**Part C2 Pricing Data**

**Part C3 Scope of Work**

---

**CONTRACT No.**

---

The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year

## **PART C1:      AGREEMENTS & CONTRACT DATA**

<b>Contents:</b>	<b>No of pages</b>
<b>C1.1 Form of Offer and Acceptance</b>	
<b>C1.2a Contract Data provided by the <i>Employer</i></b>	
<b>C1.2b Contract Data provided by the <i>Contractor</i></b>	
<b>C1.3 Proforma Guarantees</b>	

The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year

## C1.1 Form of Offer & Acceptance

### Offers

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

**The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year**

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 A	The offered total of the Prices exclusive of VAT is	<b>Rates based</b>
	Sub total	
	Value Added Tax @ 15% is	<b>According to SARS standards</b>

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 &

The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year

signature of  
witness

Date

The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year

## 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: Service 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 of this document, including the Schedule of Deviations (if any).

Signature(s)

Name(s)

Capacity

**for the  
Employer**

(Insert name and address of organisation)

Name &  
signature of  
witness

Date

The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year

## C1.2 TSC3 Contract Data

### Part one - Data provided by the *Employer*

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

Clause	Statement	Data
1	<b>General</b>	
	The <i>conditions of contract</i> are the core clauses and the clauses for main Option:	
	dispute resolution Option	<b>A:</b> Priced contract with price list
	and secondary Options	<b>W1:</b> Dispute resolution procedure
		<b>X2:</b> Changes in the law
		<b>X9:</b> Transfer of rights
		<b>X10:</b> Employer's Agent
		<b>X11:</b> Termination by the Employer
		<b>X18:</b> Limitation of liabilities
		<b>Z:</b> <i>Additional conditions of contract</i>
	of the NEC3 Term Service Contract (June 2005) <sup>1</sup>	
10.1	The <i>Employer</i> is (name):	<b>Eskom Holdings SOC Limited (Reg No: 2002/015527/06), a juristic person incorporated in terms of the company laws of the Republic of South Africa</b>
	Address	<b>Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg</b>
	Tel No.	<b>011 800 8111</b>
	Fax No.	<b>011 800 4472</b>
10.1	The <i>Service Manager</i> is (name):	<b>Sello Ndlovu</b>
	Address	<b>Eskom Research and Innovation centre, Lower Germiston, Rosherville, Cleveland.</b>
	Tel	<b>011 800 6427</b>

<sup>1</sup> Available from Engineering Contract Strategies Tel 011 803 3008 Fax 011 803 3009

The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year

Fax 086 668 1103

e-mail [ndlovupe@eskom.co.za](mailto:ndlovupe@eskom.co.za)

11.2(2)	The Affected Property is	Eskom – Research & Innovation Centre
11.2(13)	The <i>service</i> is	The pro
11.2(14)	The following matters will be included in the Risk Register	None
11.2(15)	The Service Information is in	Part 3: Scope of Work and all documents and drawings to which it makes reference.
12.2	The <i>law of the contract</i> is the law of	the Republic of South Africa
13.1	The <i>language of this contract</i> is	English
13.3	The <i>period for reply</i> is	N/A
2	<b>The Contractor's main responsibilities</b>	(If the optional statement for this section is not used, no data will be required for this section)
21.1	The <i>Contractor</i> submits a first plan for acceptance within	
3	<b>Time</b>	
30.1	The <i>starting date</i> is.	To be confirmed
30.1	The <i>service period</i> is	To be confirmed.
4	<b>Testing and defects</b>	No data is required for this section of the <i>conditions of contract</i> .
5	<b>Payment</b>	
50.1	The <i>assessment interval</i> is	Not applicable
51.1	The <i>currency of this contract</i> is the	South African Rand
51.2	The period within which payments are made is	As per the invoice
51.4	The <i>interest rate</i> is	(i) zero percent above the publicly quoted prime rate of interest (calculated on a 365 day year) charged by from time to time by the Standard Bank of South Africa (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  (ii) the LIBOR rate applicable at the time for amounts due in other currencies. LIBOR is the



The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year

6 month London Interbank Offered Rate quoted under the caption "Money Rates" in The Wall Street Journal for the applicable currency or if no rate is quoted for the currency in question then the rate for United States Dollars, and if no such rate appears in The Wall Street Journal then the rate as quoted by the Reuters Monitor Money Rates Service (or such service as may replace the Reuters Monitor Money Rates Service) on the due date for the payment in question, adjusted *mutatis mutandis* every 6 months thereafter (and as certified, in the event of any dispute, by any manager employed in the foreign exchange department of The Standard Bank of South Africa Limited, whose appointment it shall not be necessary to prove.

6	<b>Compensation events</b>	(If the optional statement for this section is not used, no data will be required for this section)
	These are additional compensation events:	N/A.
7	<b>Use of Equipment Plant and Materials</b>	No data is required for this section of the <i>conditions of contract</i> .
8	<b>Risks and insurance</b>	
80.1	These are additional <i>Employer's</i> risks	<ol style="list-style-type: none"> <li>1. Natural disaster</li> <li>2. Faulty machines</li> </ol>
83.1	The <i>Employer</i> provides these insurances from the Insurance Table	as stated for "Format TSC3" available on <a href="http://www.eskom.co.za/live/content.php?Item_ID=9248">http://www.eskom.co.za/live/content.php?Item_ID=9248</a> (See Annexure A for basic guidance).
83.1	The <i>Employer</i> provides these additional insurances	as stated for "Format TSC3" available on <a href="http://www.eskom.co.za/live/content.php?Item_ID=9248">http://www.eskom.co.za/live/content.php?Item_ID=9248</a> (See Annexure A for basic guidance)
83.1	The minimum amount of cover for insurance against loss and damage caused by the <i>Contractor</i> to the <i>Employer's</i> property is	the amount of the deductibles relevant to the event described in the "Format TSC3" insurance policy available on <a href="http://www.eskom.co.za/live/content.php?Item_ID=9248">http://www.eskom.co.za/live/content.php?Item_ID=9248</a>
83.1	The minimum amount of cover for loss of or damage to Plant and Materials provided by the <i>Employer</i> is:	the amount of the deductibles relevant to the event described in the "Format TSC3" insurance policy available on

The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year

83.1	The minimum amount of cover for insurance in respect of loss of or damage to property (except the <i>Employer's</i> property, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the <i>Contractor</i> ) arising from or in connection with the <i>Contractor's</i> Providing the Service for any one event is:	<b>whatever the <i>Contractor</i> deems necessary in addition to that provided by the <i>Employer</i>.</b>
83.1	The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the <i>Contractor</i> arising out of and in the course of their employment in connection with this contract for any one event is:	<b>As prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 and the <i>Contractor's</i> common law liability for people falling outside the scope of the Act with a limit of Indemnity of not less than R500 000 (Five hundred thousand Rands)..</b>
<b>9</b>	<b>Termination</b>	<b>There is no Contract Data required for this section of the <i>conditions of contract</i>.</b>
<b>10</b>	<b>Data for main Option clause</b>	
<b>A</b>	<b>Priced contract with price list</b>	
20.5	The <i>Contractor</i> prepares forecasts of the final total of the Prices for the whole of the service at intervals no longer than	<b>4 weeks.</b>
<b>11</b>	<b>Data for Option W1</b>	
W1.1	The <i>Adjudicator</i> is (Name)	<b>To be appointed when a dispute arise.</b>
W1.2(3)	The <i>Adjudicator nominating body</i> is:	<b>the Chairman of the Joint Civils Division of the South African Institution of Civil Engineering. (See <a href="http://www.jointcivils.co.za">www.jointcivils.co.za</a>)</b>
W1.4(2)	The <i>tribunal</i> is:	<b>Arbitration</b>
W1.4(5)	The <i>arbitration procedure</i> is	<b>the latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.</b>
	The place where arbitration is to be held is	<b>Johannesburg, South Africa</b>
	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	<b>the Chairman for the time being or his nominee of the Association of Arbitrators (Southern Africa) or its successor body.</b>
<b>12</b>	<b>Data for secondary Option clauses</b>	

The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year

X1 X2 X9 X11 X18	Price Adjustment for inflation Changes in the law Transfer of rights Termination by the employer Limitation of liability	No data is required for this Option
Z	The <i>additional conditions of contract</i> are	Z1 to Z11 always apply.
Z1	<b>Cession delegation and assignment</b>	
Z1.1	The <i>Contractor</i> does not cede, delegate or assign any of its rights or obligations to any person without the written consent of the <i>Employer</i> .	
Z1.2	Notwithstanding the above, the <i>Employer</i> may on written notice to the <i>Contractor</i> 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 and the Electricity Distribution Industry.	
Z2	<b>Joint ventures</b>	
Z2.1	If the <i>Contractor</i> 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 <i>Employer</i> for the performance of this contract.	
Z2.2	Unless already notified to the <i>Employer</i> , the persons or organisations notify the <i>Service Manager</i> within two weeks of the Contract Date of the key person who has the authority to bind the <i>Contractor</i> on their behalf.	
Z2.3	The <i>Contractor</i> does not substantially alter the composition of the joint venture, consortium or other unincorporated grouping of two or more persons without the consent of the <i>Employer</i> having been given to the <i>Contractor</i> in writing.	
Z3	<b>Change of Broad Based Black Economic Empowerment (B-BBEE) status</b>	
Z3.1	Where a change in the <i>Contractor's</i> legal status, ownership or any other change to his business composition or business dealings results in a change to the <i>Contractor's</i> B-BBEE status, the <i>Contractor</i> notifies the <i>Employer</i> within seven days of the change.	
Z3.2	The <i>Contractor</i> is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the <i>Service Manager</i> within thirty days of the notification or as otherwise instructed by the <i>Service Manager</i> .	
Z3.3	Where, as a result, the <i>Contractor's</i> B-BBEE status has decreased since the Contract Date the <i>Employer</i> may either re-negotiate this contract or alternatively, terminate the <i>Contractor's</i> obligation to Provide the Works.	
Z3.4	Failure by the <i>Contractor</i> to notify the <i>Employer</i> of a change in its B-BBEE status may	

The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year

constitute a reason for termination. If the *Employer* terminates in terms of this clause, the procedures on termination are P1, P2 and P4 as stated in clause 92, and the amount due is A1 and A3 as stated in clause 93.

## **Z4 Ethics**

- Z4.1 Any offer, payment, consideration, or benefit of any kind made by the *Contractor*, which constitutes or could be construed either directly or indirectly as an illegal or corrupt practice, as an inducement or reward for the award or in execution of this contract constitutes grounds for terminating the *Contractor's* obligation to Provide the Service or taking any other action as appropriate against the *Contractor* (including civil or criminal action).
- Z4.2 The *Employer* may terminate the *Contractor's* obligation to Provide the Service if the *Contractor* (or any member of the *Contractor* where the *Contractor* constitutes a joint venture, consortium or other unincorporated grouping of two or more persons or organisations) is found guilty by a competent court, administrative or regulatory body of participating in illegal or corrupt practices.

Such practices include making of offers, payments, considerations, or benefits of any kind or otherwise, whether in connection with any procurement process or contract with the *Employer* or other people or organisations and including in circumstances where the *Contractor* or any such member is removed from the an approved vendor data base of the *Employer* as a consequence of such practice.

- Z4.3 Notwithstanding the provisions of core clause 90.2, the procedures on termination in terms of this clause are P1, P2 and P4 as stated in the core clause 92 and the amount due is A1 and A3 as stated in core clause 93.

## **Z5 Confidentiality**

- Z5.1 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.
- Z5.2 If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until notified otherwise by the *Service Manager*.
- Z5.3 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.
- Z5.4 The taking of images (whether photographs, video footage or otherwise) of the Affected Property or any portion thereof, in the course of Providing the Service and after the end of the *service period*, requires the prior written consent of the *Service Manager*. All rights in and to all such images vests exclusively in the *Employer*.

The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year

Z5.5 The *Contractor* ensures that all his subcontractors abide by the undertakings in this clause.

**Z6 Waiver and estoppel: Add to core clause 12.3:**

Z6.1 Any extension, concession, waiver or relaxation of any action stated in this contract by the Parties, the *Service Manager* 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.

**Z7 Health, safety and the environment: Add to core clause 27.4**

Z7.1 The *Contractor* undertakes to take all reasonable precautions to maintain the health and safety of persons in and about the execution of the *service*. Without limitation the *Contractor*:

- accepts that the *Employer* may appoint him as the "Principal Contractor" (as defined and provided for under the Construction Regulations 2003 (promulgated under the Occupational Health & Safety Act 85 of 1993) ("the Construction Regulations") for the Affected Property;
- 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 the *service*; and
- undertakes, in and about the execution of the *service*, 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.

Z7.2 The *Contractor*, in and about the execution of the *service*, 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.

**Z8 Provision of a Tax Invoice and interest. Add to core clause 51**

Z8.1 Within one week of receiving a payment certificate from the *Service 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 Service Information, showing the amount due for payment equal to that stated in the payment certificate.

Z8.2 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.

Z8.3 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.

The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year

**Z9            Notifying compensation events**

- Z9.1 Delete from the last sentence in core clause 61.3, "unless the *Service Manager* should have notified the event to the *Contractor* but did not".

**Z10           *Employer's* limitation of liability**

- Z10.1 The *Employer's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00 (zero Rand)
- Z10.2 The *Contractor's* entitlement under the indemnity in 82.1 is provided for in 60.1(12) and the *Employer's* liability under the indemnity is limited to compensation as provided for under the compensation events stated in this contract.

**Z11           **Termination: Add to core clause 91.1, at the second main bullet point, fourth sub-bullet point, after the words "against it":****

- Z11.1      or had a judicial management order granted against it.

The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year

## **Annexure A: Insurance provided by the Employer**

*These notes are provided as guidance to tendering contractors and the Contractor about the insurance provided by the Employer. Details of the insurance itself are available from the internet web link given below.*

1. Services provided in a TSC3 contract could include some element of construction or refurbishment as well as a continuous maintenance or operational service activity. If an event occurs which causes loss or damage, a claim could be made either against the *Employer's* "works" type policy which may be in place for the *Employer's* portion of the Affected Property concerned or against the *Employer's* assets policy which may be in place for the *Employer's* portion of the Affected Property concerned, or both.
2. The cover provided and the deductibles under the works policy are different to those under the assets policy. Each policy has a range of applicable deductibles depending on the location of the Affected Property and the nature of the insurable event.
3. The *Contractor* is required in terms of Contract Data for clause 83 to provide cover for the deductibles in the insurance provided by the *Employer*. This can be provided from his own resources on a 'self insured' basis or obtained by him from his own insurers. In order to assess the extent of this cover, tendering contractors and their brokers should consult the internet web link given below and scroll to '**Format TSC3**' to establish both the cover and the deductibles in relation to the *service* provided in terms of this contract.
4. Tendering contractors should note that cover provided by the *Employer* is only per the policies available on the internet web link listed below and may not be the cover required by the tendering contractor or as intended by each of the listed insurances in the left hand column of the Insurance Table in clause 83.2. In terms of clause 83.1 "the *Contractor* provides the insurances stated in the Insurance Table except any insurance which the *Employer* is to provide". Hence the *Contractor* provides insurance which the *Employer* does not provide and in cases where the *Employer* does provide insurance the *Contractor* insures for the difference between what the Insurance Table requires and what the *Employer* provides.
5. If Marine Insurance is required the *Contractor* needs to obtain a copy of the latest edition of Eskom's Marine Policies Procedures found at internet website given below.
6. **Further information and full details of all Eskom provided policies and procedures may be obtained from:**

[http://www.eskom.co.za/live/content.php?Item\\_ID=9248](http://www.eskom.co.za/live/content.php?Item_ID=9248)

The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year

## Annexure B: The *Employer's* Panel of Adjudicators

The following persons listed in alphabetical order of their surname have indicated their willingness to be included in the Eskom Panel of Adjudicators. Their CV's may be obtained by using the contact details provided.

Name	Location	Contact details (phone & e mail)
Nigel ANDREWS	Gauteng	+27 11 836-6760 nigela@quoin.net
Andrew BAIRD	Gauteng	+27 11 803 3008 <a href="mailto:andrewbaird@ecsconsult.co.za">andrewbaird@ecsconsult.co.za</a>
Christopher BINNINGTON	Gauteng	+27 11 888-6141 <a href="mailto:cdb@bca.co.za">cdb@bca.co.za</a>
Peter HIGGINS	UK	+44 1293 873 868 peterhiggins@pdconsult.co.uk
Bruce LEECH	Gauteng	+27 11 290 4000 leech@counsel.co.za
Nigel NILEN	Gauteng	+27 11 465 3601; nilences@global.co.za
Peter THURLOW	Gauteng	+27 11 787 6226 <a href="mailto:info@thurlowassoc.com">info@thurlowassoc.com</a>

Information about the Panel and appointment of the selected *Adjudicator* is available from Eskom Supply Chain Operations management, by contacting Leighton Itholeng (Tel.: +27 (0)11 800 4031) (Fax :+27 (0)86 668 0419) E-mail: [Leighton.Itholeng@eskom.co.za](mailto:Leighton.Itholeng@eskom.co.za)



The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year

## C1.2 Contract Data

### Part two - Data provided by the *Contractor*

Clause	Statement	Data
10.1	The <i>Contractor</i> is (Name): Address  Tel No. Fax No.	
11.2(8)	The <i>direct fee percentage</i> is The <i>subcontracted fee percentage</i> is	<b>N/A.</b> <b>N/A.</b>
11.2(14)	The following matters will be included in the Risk Register	<b>Natural disaster</b>
11.2(15)	The Service Information for the <i>Contractor's</i> plan is in:	<b>Supplier's manual</b>
21.1	The plan identified in the Contract Data is contained in:	<b>Supplier's manual</b>
24.1	The key persons are: 1 Name: Job: Responsibilities:	
<b>A</b>	<b>Priced contract with price list</b>	
11.2(12)	The <i>price list</i> is in	<b>Refer to activity schedule</b>
11.2(19)	The tendered total of the Prices is	<b>Refer to activity schedule</b>

The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year

## PART 2: PRICING DATA

### TSC3 Option A

Document reference	Title	No of pages
C2.1	Pricing assumptions: Option A	2
C2.2	The <i>price list</i>	[•]

The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year

## C2.1 Pricing assumptions: Option A

### The *conditions of contract*

#### How work is priced and assessed for payment

Clause 11 in NEC3 Term Service Contract, June 2005 (TSC3) core clauses and Option A states:

<b>Identified and defined terms</b>	11	
	11.2	(12) The Price List is the <i>price list</i> unless later changed in accordance with this contract.
		(17) The Price for Services Provided to Date is the total of
		<ul style="list-style-type: none"> <li>the Price for each lump sum item in the Price List which the <i>Contractor</i> has completed and</li> <li>where a quantity is stated for an item in the Price List, an amount calculated by multiplying the quantity which the <i>Contractor</i> has completed by the rate.</li> </ul>
		(19) The Prices are the amounts stated in the Price column of the Price List. Where a quantity is stated for an item in the Price List, the Price is calculated by multiplying the quantity by the rate.

This confirms that Option A is a priced contract where the Prices are derived from a list of items of service which can be priced as lump sums or as expected quantities of service multiplied by a rate or a mix of both.

#### Function of the Price List

Clause 54.1 in Option A states: "Information in the Price List is not Service Information". This confirms that instructions to do work or how it is to be done are not included in the Price List but in the Service Information. This is further confirmed by Clause 20.1 which states, "The *Contractor* Provides the Service in accordance with the Service Information". Hence the *Contractor* does **not** Provide the Service in accordance with the Price List. The Price List is only a pricing document.

#### Link to the *Contractor's* plan

Clause 21.4 states "The *Contractor* provides information which shows how each item description on the Price List relates to the operations on each plan which he submits for acceptance". Hence when compiling the *price list*, the tendering contractor needs to develop his first clause 21.2 plan in such a way that operations shown on it can be priced in the *price list* and result in a satisfactory cash flow in terms of clause 11.2(17).

#### Preparing the *price list*

It will be assumed that the tendering contractor has read Pages 14, 15 and 73 of the TSC3 Guidance Notes before preparing the *price list*. Items in the *price list* may have been inserted by the *Employer* and

The provision for the supply, delivery and commissioning of a solar PV panel cleaning system which is portable, semi-automatic, robotic system capable of both wet and dry cleaning with a technical support of a period of one (1) year

the tendering contractor should insert any additional items which he considers necessary. Whichever party provides the items in the *price list* the total of the Prices is assumed to be fully inclusive of everything necessary to Provide the Service as described at the time of entering into this contract.

1 As the *Contractor* has an obligation to correct Defects (core clause 42.1) and there is no compensation event for this unless the Defect was due to an *Employer's* risk, the lump sum Prices and rates must also include for the correction of Defects.

2 If the *Contractor* has decided not to identify a particular item in the *price list* at the time of tender the cost to the *Contractor* of doing the work must be included in, or spread across, the other Prices and rates in the *price list* in order to fulfil the obligation to complete the *service* for the tendered total of the Prices.

3 There is no adjustment to lump sum prices in the *price list* if the amount, or quantity, of work within that lump sum item of service later turns out to be different to that which the *Contractor* estimated at time of tender. The only basis for a change to the Prices is as a result of a compensation event. See Clause 60.1.

4 Hence the Prices and rates tendered by the *Contractor* in the *price list* are inclusive of everything necessary and incidental to Providing the Service in accordance with the Service Information, as it was at the time of tender, as well as correct any Defects not caused by an *Employer's* risk.

5 The Contractor does not have to allow in his Prices and rates for matters that may arise as a result of a compensation event. It should be noted that the list of compensation events includes those arising as a result of an *Employer's* risk event listed in core clause 80.1.

### **Format of the *price list***

(From page 73 of the TSC3 Guidance Notes)

Entries in the first four columns in the *price list* in section C2.2 are made either by the *Employer* or the tendering contractor.

If the *Contractor* is to be paid an amount for the item which is not adjusted if the quantity of work in the item changes, the tendering contractor enters the amount in the Price column only, the Unit, Expected Quantity and Rate columns being left blank.

If the *Contractor* is to be paid an amount for an item of work which is the rate for the work multiplied by the quantity completed, the tendering contractor enters the rate which is then multiplied by the Expected Quantity to produce the Price, which is also entered.

If the *Contractor* is to be paid a Price for an item proportional to the length of time for which a service is provided, a unit of time is stated in the Unit column and the expected length of time (as a quantity of the stated units of time) is stated in the Expected Quantity column.

## C2.2 the *price list*

.

-----

No	Description	Unit	Quantity	Rate	Total
1	Supply and Delivery	sum	1		
2	<b>Equipment</b>				
2.1	Cleaning Robot System	Sum	1		
2.2	Critical Spares Kit	Sum	1		
2.3	Spare Battery and charger	Sum	1		
2.4	Spare rollers	Sum	2		
3	<b>Services</b>				
3.1	Training (4 operators)	sum	1		
3.2	Technical Support (Rate / hour)	hours	24		
	<b>Total</b>				

## PART 3: SCOPE OF WORK



## C3.1: EMPLOYER'S SERVICE INFORMATION

### SCOPE OF WORK

#### Scope of work / Supply

The scope of specification briefly includes:

Supply, delivery, commissioning and technical support of a solar PV panel cleaning system which must be a portable, semi-automatic, robotic system capable of both wet and dry cleaning.

- The PV panel cleaning robotic system will be used at various sites, therefore it must be portable via a single operator and a standard vehicle such as a bakkie (pickup)
- The panel cleaning robotic system should be versatile with multiple operating modes and attachments (all to be supplied) as it will be used for research and development. This may include:
  - Wet cleaning
  - Dry cleaning
  - Vacuum cleaning
  - Solvent cleaning
  - Interchangeable rollers with different cleaning materials (brush, cloth, etc)
- Operation should be possible with a single operator, robot can either be automatic or controlled via remote. Details of control system to be provided.
- The single operator should be able to set up the cleaning robotic system on both roof top and ground mounted solar systems.
- The operator should be able to move the cleaning robot from one row of solar panels to the next with no lifting equipment. If dismantling is required for moving, this should be possible in a reasonable amount of time (<10 min).
- When wet cleaning methods are used, the robot should connect to a standard hosepipe connection using municipal grade water or be supplied with all relevant connections / adaptors for this to be done.
- If the robot requires water to be provided from a storage tank, the cleaning robotic system must have the capacity to extract the water from the tank (robot should be equipped with its own pump)
- The operational time of the cleaning robotic system must be 6 hours. This can be achieved from multiple batteries if batteries are replaceable and have an independent charging station (supplier to specify if charging is only possible within the cleaning robotic unit).
- The supplier is to provide 24 month manufacturer's warranty. The supplier is to provide a letter in an official letterhead confirming that any claims against the warranty will be managed by the supplier.
- The specification provided in Table 1 can be used as a guideline however, each supplier must provide the technical specification of the cleaning robot that they propose be supplied.

**Table 1: Guidelines for technical specification**

No	Specification	Guideline	Comment
1	Number of operators required	Single operator	
2	Suitable installation type and size	rooftop, ground, residential, commercial or utility	The robot is required for both ground and rooftop installations. What is the ideal PV installation size for the cleaning robot; residential, commercial or utility?
3	Cleaning mechanism	Wet, dry and vacuum	Versatility is required by the project scope
4	Automatic control	No / semi / fully automatic navigation	Supplier to specify automatic control system; preprogramed using GPS or AI with multiple sensors
5	Remote control	100m	Supply to specify range of remote control, as well as if there is a camera on unit and any automatic protection systems
6	Camera		Is camera used for monitoring/inspection or remote control
7	Other sensors		Provide details of any other sensors on the unit (for monitoring, AI or protection systems)
8	Total Weight		
9	Maximum component Weight	30 kg	Operator must be able to carry the robot
10	Dismantle and reassemble time	10 minutes	If the robot has multiple components that need to be dismantled to be moved, dismantling and reassembly should take no more than 10 minutes
11	Maximum pressure on panel	3500Pa - 4200Pa	Where available, provide reference to panel type and panel limits.
12	Climbing capacity / operational angle	25°	Or greater
13	Crossing Gap		Gap between panels that can be crossed without operator assistance
14	Water consumption		Proven robot specification in l/min
15	Water pressure	< 1 bar	Water delivery pressure when cleaning
16	Cleaning capacity	800 m <sup>2</sup> /h	
17	Run time	6 / 8 hours	Supplier to specify the number of batteries required to achieve this.
18	Robot Dimensions (L x W x H)		
19	Brush Dimensions (Width & diameter)		
20	Brush material		Specify if different brushes are used for wet and dry cleaning. Also provide operational life expectancy of the brushes before replacement is required.

### Additional Requirements



- Automatic cleaning robotic system must be a proven technology which is currently operational.
- The supplier is to indicate if there are rolling supports / lifters / transporters available for the proposed model.
- Supplier to state if any PV panel OEM acceptance or testing of the system has been done. Provide supporting document if available.
- The cleaning robotic system must be tested and certified not to cause microcracks.
- Critical spares kit (or critical spares that will be required within the first year) are to be included.
- If multiple batteries are required to achieve the operational time of 6 hour, the supplier is to include this in the cost. (This will include robot and remote batteries as well as charging stations if required)
- Spare set of wet and dry brushes.
- Training of 4 operators is required and will be arranged at a time that is mutually agreed upon.
- Delivery will be at Eskom Research and Innovation Centre (ERIC) in Rosherville, Johannesburg.

### **Documents to be submitted with the tender**

The following documents are required with each supplier's tender submission as they will form part of the evaluation.

1. The supplier is to provide details of
  - a. Manufacturers details; Company Profile, projects, footprint, etc
  - b. proven operational performance (local and international),
  - c. the number of units in operations including letters of recommendation,
  - d. response time on any defects or repair,
  - e. local availability of critical spares and
  - f. list of certified/accepted service agents.
2. Suppliers company details; Company Profile, projects, footprint, etc
3. Certification or Letter of Approval from the manufacturer, confirming that the supplier is a certified / approved reseller and vender of the product.
4. Full operational and maintenance manual must be provided with the tender documentation as well as on delivery.
5. The supplier to clearly specify all the items which are supplied with the unit (what in the box list).
6. The supplier is to provide a list of critical spares to be provided, or a list of spares that are provided as a standard 'Spares Kit', in their submission and include this as an individual item in the price list.
7. The supplier to specify the warranty period and what is covered (inclusions and exclusions).
8. The supplier is to provide a letter in an official letterhead confirming that any claims against the warranty and technical support will be managed by the supplier.
9. Supplier to provide information on any PV panel OEM acceptance or if testing of the system with an OEM has been done. Provide supporting document if available.
10. Supplier to provide a demo video on the flash disk submitted with the tender or a link to an internet site (e.g. YouTube) with a demonstration video. This video should demonstrate:
  - a. Unit assembly, setup including all inspections.
  - b. Startup and field operations (navigation, crossing panels, etc)
11. Each supplier is required to complete and return Table 2 below.

**Table 2: Technical specification of proposed portable, automatic solar cleaning robotic system**

<b>Item No.</b>	<b>Criteria</b>	<b>Units</b>	<b>Specification</b>	<b>Supplier Comment / Reference</b>
-----------------	-----------------	--------------	----------------------	-------------------------------------

1	Operator requirements: Number of operators			
2	Suitable installation type and size (rooftop, ground, utility, etc)			
3	Cleaning mechanism (Wet, dry, vacuum, both)			
4	Automatic control (No / semi / fully automatic navigation)			
5	Remote control operational distance	m		
6	Camera			
7	Other sensors (specify details)			
8	Total Weight	kg		
9	Component Weight	kg		
10	Dismantle and reassemble time			
11	Maximum pressure on panel	Pa		
12	Climbing capacity / operational angle	deg		
13	Crossing Gap	m		
14	Water consumption	l/h		
15	Water pressure	Pa / bar		
16	Cleaning area	m <sup>2</sup> /h		
17	Run time	hour		
18	Robot Dimensions (L x W x H)	mm / m		
19	Brush Dimensions (Width & diameter)	mm / m		
20	Brush material (brush, cloth)			

## Description of the service

### Invoicing and payment

Clause 50.2 states invoices submitted by the *Contractor* include the details stated in the Scope to show how the amount due has been assessed. Also state what must be shown on the Invoice. The following text is suggested.

The following details shall be shown on or attached to each Invoice to show how the amount due has been assessed:

The *Contractor* shall address the tax invoice to Eskom Research and Innovation centre and include on it the following information:

Name and address of the *Contractor* and the *Employer's Agent*;

The contract number and title;

*Contractor's* VAT registration number;

The *Employer's* VAT registration number 4740101508;

Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT;

### Health and safety

The *Contractor* shall at all times comply with the health and safety requirements prescribed by law as they may apply to the services.

- Letter of Good Standing
- ☐ Acknowledgment of Life Saving Rules
- ☐ Signed SHE Policy
- ☐ 37(2) Eskom Agreement
- ☐ Baseline Risk Assessment

### Eskom's cardinal rules

The Eskom Cardinal Rules are non-negotiable safety rules that aim to prevent serious at-risk behaviours and promoting a safe working environment at all locations. There may be instances where divisions and or business units have additional cardinal rules addressing their specific risks and these will be supplementary to the five Eskom Cardinal Rules.

The five Eskom Cardinal Rules that the service provider must adhere to, and are as follows:

- Rule 1: "Open, isolate, test, earth, bond and/or insulate before touch"
- Rule 2: "Hook up at height"
- Rule 3: "Buckle Up"
- Rule 4: "Be Sober"
- Rule 5: "Ensure that you have a permit to work"

All safety rules and requirements are important and must be adhered to. The Eskom Cardinal Rules are different from regular safety rules in that they are considered higher order rules. If any of the Eskom Cardinal Rules are not adhered to, it will result in a disciplinary process in accordance with the Eskom Disciplinary Code and Procedure, which will have the power of dismissal