



AIRPORTS COMPANY OF SOUTH AFRICA

TENDER NO: KSIA8297/2026/RFP

RETURNABLE

NOTE:

- The Form of Offer and Acceptance (C1.1) is on **pages 3-6** of this document.
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THE CLIENT:

Airports Company South Africa SOC Ltd
Airports Company South Africa SOC Limited
King Shaka International Airport
La Mercy
4407
Tel +2732 436 6000

OCTOBER 2026

ENGINEERING CONSTRUCTION CONTRACT

AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED

NEC 3: ENGINEERING AND CONSTRUCTION CONTRACT (ECC)

A contract between

AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED

Applicable at King Shaka International Airport

(Registration Number: 1993/004149/30)

and

(Registration Number: _____)

for

**Design, Supply, Installation, Testing and Commissioning of
Power Factor Correction equipment at King Shaka
International Airport for a 24-Month Contract period**

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C1 Agreements and Contract Data

C1.1 Form of Offer and Acceptance

Offer

The Employer, identified in the Acceptance page signature block on the next page, has solicited offers to enter a contract for the procurement of a service provider for:

The Design, Supply, Installation, Testing and Commissioning of Power Factor Correction equipment at King Shaka International Airport for a 24-Month Contract period.

The tenderer, identified in the Offer signature block, has examined the documents listed in the Tender Data and addenda thereto as listed in the Returnable Schedules, 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.

The offered total of the Prices exclusive of VAT is	R
Value Added Tax @ 15% is	R
The offered total of the Prices inclusive of VAT is	R
(in words)	

THE OFFERED PRICES ARE AS STATED IN THE PRICING SCHEDULE

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 and
signature of
witness

Date

Tenderer's CIDB registration number

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. 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). 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

(Insert name and address of organisation)

**for the
Employer**

Airports Company South Africa SOC Limited
King Shaka International Airport
King Shaka Drive
La Mercy
4405

Name and
signature of
witness

Date

Schedule of Deviations

1 Subject

Details

.....

.....

.....

2 Subject

Details

.....

.....

.....

3 Subject

Details

.....

.....

.....

By the duly authorised representatives signing this agreement, the Employer and the Tenderer agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the Tender Data and addenda thereto as listed in the returnable 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 Agreement 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	<i>(Insert name and address of organisation)</i>	Airports Company South Africa SOC Limited King Shaka International Airport King Shaka Drive La Mercy 4405
Name and signature of witness		
Date		

Part C1.2a Contract Data

Part one – Data provided by the Employer

The Conditions of contract are selected from the NEC3 Engineering and Construction Contract, April 2013.

Each item of data given below is cross-referenced to the NEC3 Engineering Construction Contract which requires it.

Clause	Statement	Data
1	General	
	The <i>conditions of contract</i> are the core clauses and the clauses for Main Option	
	Main Option	B: Priced contract with Bill of Quantities
	Dispute resolution Option	W1: Dispute resolution procedure
	Secondary Options (incorporating amendments)	X7: Delay damages X13: Performance Bond X18: Limitation of liability Z: Additional conditions of contract of the NEC3 Engineering and Construction Contract, April 2013
10.1	The <i>Employer</i> is (Name)	Airports Company South Africa SOC Limited, King Shaka International Airport
	Address	Airports Company South Africa SOC Limited King Shaka International Airport La Mercy 4407
	Telephone	032 436 6000
	Fax	032 436 6672
10.1	The <i>Project Manager</i> is	TBC
	Contact Person:	Administration Office MSO Building
	Address:	King Shaka International Airport La Mercy 4407
	Telephone	032 436 6051
	E-mail address	
10.1	The <i>Supervisor</i> is	TBC

	Address	Administration Office MSO Building King Shaka International Airport La Mercy 4407	
	Telephone		
	Fax		
	Email		
11.2	The <i>works</i> are	The Design, Supply, Installation, Testing and Commissioning of Power Factor Correction equipment at King Shaka International Airport for a 24-Month Contract period	
11.2	The following matters will be included in the Risk Register	• Availability of As-Built information • Access to Site • Site Constraints and Constructability • Long lead equipment • Existing services • Project Program delay • Disruption to electrical supply during commissioning phase	
11.2	The <i>Works Information</i> is in	Part C3 ‘Scope of Works’ section of this contract	
11.2	The <i>Site Information</i> is in	Part C4 ‘Works Information’ section of this contract	
11.2	The <i>boundary of the site</i> is	King Shaka International Airport (Landside and Airside)	
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 of reply</i> is	Seven (7) working days	
3	Time		
31.2	The <i>starting date</i> is	Upon signing of the Contract by ACSA	
11.2	The <i>completion date</i> is	24 months from starting date	
11.2 (9)	The <i>key dates and conditions</i> to be met are:	Condition to be met (from start date) 1. SHE file approval 2. Safety Inductions 3. Contractors design approval	key date 3 Weeks from start 5 Weeks from start 13 Weeks from start
30.1	The <i>access date</i> is	One week after signing of the Contract by ACSA	
31.1	The <i>Contractor</i> submits a first programme	Within 14 days of the starting date	

32.2	The <i>Contractor</i> submits revised programmes at intervals no longer than	Two (2) weeks																												
35.1	The <i>Employer</i> is not willing to take over the works before the <i>completion date</i>	The <i>Employer</i> and Others will have access to the <i>works</i> during construction or prior to completion. Such access by the Employer and Others shall not relieve the <i>Contractor</i> from liability for the completion of the <i>works</i> in accordance with the Works Information and in terms of this contract.																												
4	Testing and Defects																													
42.2	The <i>defects date</i> is	Twelve (12) months after Completion of the whole of the <i>works</i>																												
43.2	The <i>defects correction period</i> is	Two (2) weeks																												
5	Payment																													
50.1	The <i>assessment interval</i> is	Four (4) weeks																												
50.1	The <i>currency of this contract</i> is the	South African Rand																												
51.2	The period within which payment is made is	Four (4) weeks after receipt of a valid and accurate Tax Invoice																												
51.4	The <i>interest rate</i> is	The prime lending rate of the Nedbank Bank. as determined from time to time																												
6	Compensation events																													
60.1	The <i>weather measurements</i> to be recorded for each calendar month are	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																												
60.1	The place where weather is to be recorded (on the Site) is	At the Construction Site Office and the records to be kept on site in a file clearly marked for this purpose																												
60.1	Assumed values for the ten-year return <i>weather data</i> for each <i>weather measurement</i> for each calendar month are	<table><tr><td>Month</td><td>Days</td><td>Month</td><td>Days</td></tr><tr><td>January</td><td>1</td><td>July</td><td>4</td></tr><tr><td>February</td><td>1</td><td>August</td><td>3</td></tr><tr><td>March</td><td>2</td><td>September</td><td>2</td></tr><tr><td>April</td><td>2</td><td>October</td><td>2</td></tr><tr><td>May</td><td>3</td><td>November</td><td>2</td></tr><tr><td>June</td><td>3</td><td>December</td><td>1</td></tr></table>	Month	Days	Month	Days	January	1	July	4	February	1	August	3	March	2	September	2	April	2	October	2	May	3	November	2	June	3	December	1
Month	Days	Month	Days																											
January	1	July	4																											
February	1	August	3																											
March	2	September	2																											
April	2	October	2																											
May	3	November	2																											
June	3	December	1																											
7	Title	No data required for this section of the <i>conditions of contract</i>																												
8	Risks and Insurance																													
84.1	The <i>Employer</i> provides these insurances	Refer to the Insurance Clauses which is attached at the end of the Contract Data																												

84.2	The <i>Contractor</i> provides the insurance stated in	The Insurance Clauses which is attached at the end of the Contract Data. The insurances are in the joint names of the Parties and provide cover for events which are at the Contractor's risk from the starting date until the Defects Certificate or a termination certificate has been issued.
	The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the Contractor arising out of and in the course of their employment in connection with this contract for any one event is:	As prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993
9	Termination	No data required for this section of the <i>conditions of contract</i>
10	Data for Main Options	
B	Priced contract with Bill of Quantities	Refer to Contract Data Part C2: Pricing Data, Bill of Quantities as per tender submission
11	Data for Option W1	
W1.1	The <i>Adjudicator</i> is	The person appointed jointly by the parties from the list of adjudicators contained below
W1.2	The <i>Adjudicator nominating body</i> is	The current Chairman of Johannesburg Advocate's Bar Council
W1.4	The <i>tribunal</i> is	Arbitration
W1.4	If the <i>tribunal</i> is arbitration, the arbitration procedure is	The <i>arbitration procedure</i> is set out in The Rules for the Conduct of Arbitrations 2013 Edition, 7th Edition, published by The Association of Arbitrators, (Southern Africa)
W1.4	The place where arbitration is to be held is	Johannesburg, South Africa.
W1.4	The person or organisation who will choose an arbitrator	The Arbitrator is the person selected by the Parties as and when a dispute arises in terms of the relevant Z Clause, from the Panel of Arbitrators provided under the relevant Z clause if the arbitration procedure does not state who selects an arbitrator. The Arbitrator nominating body is the Chairman of the Johannesburg Advocates Bar Council.
12	Data for Secondary Option Clauses	
X7	Delay Damages	
	Delay damages of the <i>works</i> are	Amount per day is 0.05%, to the maximum of 10% of the Contract value

X13	Performance bond	
X13.1	The amount of the performance bond is	10% of the contract value. Pro-forma draft of a performance bond to be used is attached to this contract.
X16	Retention	Not used
X16.1	The <i>retention percentage</i> is	The retention percentage is: 0% of the Contract Price
X18	Limitation of Liability	
X18.1	The <i>Contractor's</i> liability to the <i>Employer</i> for indirect or consequential loss is limited to	Nil - Neither Party is liable to the other for any consequential or indirect loss, including but not limited to loss of profit, loss of income or loss of revenue
X18.2	For any one event, the <i>Contractor's</i> liability to the <i>Employer</i> for loss of or damage to the <i>Employer's</i> property is limited to	The total liability incurred and/or damages suffered to the employer's property
X18.3	The <i>Contractor's</i> total liability to the Employer for defects due to his design which are not listed on the Defects Certificate is limited to	The total liability incurred and/or damages suffered to the employer's property
X18.4	The <i>Contractor's</i> total liability to the <i>Employer</i> for all matters arising under or in connection with this contract, other than excluded matters, is limited to	The Contractor's total direct liability to the Employer for all matters arising under or in connection with this contract, other than the excluded matters, is limited to the total of the Prices and applies in contract, tort or delict and otherwise to the extent allowed under the law of the contract. The excluded matters are amounts payable by the Contractor as stated in this contract for - Loss of or damage to the Employer's property, - Delay damages, - Defects liability, - Insurance liability to the extent of the Contractor's risks - loss of or damage to property (other than the <i>works</i>, Plant and Materials), - death of or injury to a person; - damage to third party property; and - infringement of an intellectual property right
Z	The <i>Additional conditions of Z1 – Z20 contract</i> are	
	Amendments to the Core Clauses	
Z1	Interpretation of the law	

Z1.1	Add to core clause 12.3: Any extension, concession, waiver or relaxation of any action stated in this contract by the Parties, the <i>Project Manager</i> , the <i>Supervisor</i> , or the <i>Adjudicator</i> 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.
Z2	Providing the Works:
Z2.1	Delete core clause 20.1 and replace with the following: The <i>Contractor</i> provides the works in accordance with the Works Information and warrants that the results of the Works, when complete, shall be fit for their intended purpose
Z3	Other responsibilities:
	Add the following at the end of core clause 27:
Z3.1	The <i>Contractor</i> shall have satisfied himself, prior to the Contract Date, as to the completeness, sufficiency and accuracy of all information and drawings provided to him as at the Contract Date
Z3.2	The <i>Contractor</i> shall be responsible for the correct setting out of the <i>Works</i> in accordance with the original points, lines and levels stated in the <i>Works</i> Information or notified by the <i>Project Manager</i> , <i>Supervisor</i> or the <i>Employer</i> . Any errors in the positioning of the <i>Works</i> shall be rectified by the <i>Contractor</i> at the <i>Contractor's</i> own costs.
Z4	Extending the defects date:
	Add the following as a new core clause 46:
Z4.1	If the <i>Employer</i> cannot use the <i>works</i> due to a Defect, which arises after Completion and before the <i>defects date</i> , the <i>defects date</i> is delayed by a period equal to that during which the <i>Employer</i> , due to a Defect, is unable to use the <i>works</i>
Z4.2	If part of the <i>works</i> is replaced due to a Defect arising after Completion and before the <i>defects date</i> , the <i>defects date</i> for the part of the <i>works</i> which is replaced is delayed by a period equal to that between Completion and the date by when the part has been replaced
Z4.3	The <i>Project Manager</i> notifies the <i>Contractor</i> of the change to a <i>defect date</i> when the delay occurs. The period between Completion and an extended <i>defects date</i> does not exceed twice the period between Completion and the <i>defects date</i> stated in the Contract Data
Z5	Termination
Z5.1	Add the following to core clause 91.1, at the second main bullet, fifth sub-bullet point, after the words “assets or”: “business rescue proceedings are initiated or steps are taken to initiate business rescue proceedings”.
	Amendment to the Secondary Option Clauses
Z6	Performance Bond
Z6.1	Amend the first sentence of clause X13.1 to read as follows: The <i>Contractor</i> gives the <i>Employer</i> an unconditional, on-demand performance bond, provided by a bank which the <i>Project Manager</i> and the <i>Employer</i> have accepted, for the amount stated in the Contract Data and in the form set out in Annexure C.ii of this Contract Data.

Z6.2	Add the following new clause as Option X13.2: The <i>Contractor</i> ensures that the performance bond is valid and enforceable until the end of the <i>contract period</i> . If the terms of the performance bond specify its expiry date and the end of the <i>contract period</i> does not coincide with such expiry date, four weeks prior to the said expiry date, the <i>Contractor</i> extends the validity of the performance bond until the end of the <i>contract period</i> . If the <i>Contractor</i> fails to so extend the validity of the performance bond, the <i>Employer</i> may claim the full amount of the performance bond and retain the proceeds as cash security
Z7	Limitation of liability:
	Insert the following new clause as Option X18.6:
Z7.1	The <i>Employer's</i> liability to the <i>Contractor</i> for the <i>Contractor's</i> indirect or consequential loss is limited to R0.00
Z7.2	Notwithstanding any other clause in this contract, any proceeds received from any insurances or any proceeds which would have been received from any insurances but for the conduct of the <i>Contractor</i> shall be excluded from the calculation of the limitations of liability listed in the contract
	Additional Z Clauses
Z8	Cession, delegation and assignment
Z8.1	The <i>Contractor</i> shall not cede, delegate or assign any of its rights or obligations to any person without the written consent of the <i>Employer</i> , which consent shall not be unreasonably withheld. This clause shall be binding on the liquidator/business rescue practitioner /trustee (whether provisional or not) of the <i>Contractor</i>
Z8.2	The <i>Employer</i> may cede and delegate its rights and obligations under this contract to any person or entity
Z9	Joint and several liability
Z9.1	If the <i>Contractor</i> constitutes a joint venture, consortium or other unincorporated grouping of two or more persons, these persons are deemed to be jointly and severally liable to the <i>Employer</i> for the performance of the Contract.
Z9.2	The <i>Contractor</i> shall, within 1 week of the Contract Date, notify the <i>Project Manager</i> and the <i>Employer</i> of the key person who has the authority to bind the <i>Contractor</i> on their behalf.
Z9.3	The <i>Contractor</i> does not materially alter the composition of the joint venture, consortium or other unincorporated grouping of two or more persons without prior written consent of the <i>Employer</i> .
Z10	Ethics
Z10.1	The <i>Contractor</i> undertakes:
Z10.1.1	not to give any offer, payment, consideration, or benefit of any kind, which constitutes or could be construed as an illegal or corrupt practice, either directly or indirectly, as an inducement or reward for the award or in execution of this contract;
Z10.1.2	to comply with all laws, regulations or policies relating to the prevention and combating of bribery, corruption and money laundering to which it or the <i>Employer</i> is subject, including but not limited to the Prevention and Combating of Corrupt Activities Act, 12 of 2004.

- Z10.3** The *Contractor's* breach of this clause constitutes grounds for terminating the *Contractor's* obligation to Provide the Works or taking any other action as appropriate against the *Contractor* (including civil or criminal action). However, lawful inducements and rewards shall not constitute grounds for termination.
- Z10.4** If the *Contractor* is found guilty by a competent court, administrative or regulatory body of participating in illegal or corrupt practices, including but not limited to the making of offers (directly or indirectly), payments, gifts, gratuity, commission or benefits of any kind, which are in any way whatsoever in connection with the contract with the *Employer*, the *Employer* shall be entitled to terminate the contract in accordance with the procedures stated in core clause 92.2. the amount due on termination is A1.

Z11 Confidentiality

- Z11.1** All information obtained in terms of this contract or arising from the implementation of this contract shall be treated as confidential by the *Contractor* and shall not be used or divulged or published to any person not being a party to this contract, without the prior written consent of the *Project Manager* or the *Employer*, which consent shall not be unreasonably withheld.
- Z11.2** If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until otherwise notified by the *Project Manager*.
- Z11.3** This undertaking shall not apply to –
- Z11.3.1** Information disclosed to the employees of the *Contractor* for the purposes of the implementation of this agreement. The *Contractor* undertakes to procure that its employees are aware of the confidential nature of the information so disclosed and that they comply with the provisions of this clause;
- Z11.3.2** Information which the *Contractor* is required by law to disclose, provided that the *Contractor* notifies the *Employer* prior to disclosure so as to enable the *Employer* to take the appropriate action to protect such information. The *Contractor* may disclose such information only to the extent required by law and shall use reasonable efforts to obtain assurances that confidential treatment will be afforded to the information so disclosed;
- Z11.3.3** 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);
- Z11.4** 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*
- Z11.5** The *Contractor* ensures that all his Subcontractors abide by the undertakings in this clause.

Z12 Employer's Step-in rights

- Z12.1** If the *Contractor* defaults by failing to comply with his obligations and fails to remedy such default within 2 weeks of the notification of the default by the *Project Manager*, the *Employer*, without prejudice to his other rights, powers and remedies under the contract, may remedy the default either himself or procure a third party (including any subcontractor or supplier of the *Contractor*) to do so on his behalf. The reasonable costs of such remedial works shall be borne by the *Contractor*

Z12.2 The *Contractor* co-operates with the *Employer* and facilitates and permits the use of all required information, materials and other matter (including but not limited to documents and all other drawings, CAD materials, data, software, models, plans, designs, programs, diagrams, evaluations, materials, specifications, schedules, reports, calculations, manuals or other documents or recorded information (electronic or otherwise) which have been or are at any time prepared by or on behalf of the *Contractor* under the contract or otherwise for and/or in connection with the *works*) and generally does all things required by the *Project Manager* to achieve this end.

Z13 Liens and Encumbrances

Z13.1 The *Contractor* keeps the Equipment used to Provide the Services free of all liens and other encumbrances at all times. The *Contractor*, vis-a-vis the *Employer*, waives all and any liens which he may from time to time have, or become entitled to over such Equipment and any part thereof and procures that his Subcontractors similarly, vis-a-vis the *Employer*, waive all liens they may have or become entitled to over such Equipment from time to time

Z14 Intellectual Property

Z14.1 Intellectual Property ("IP") rights means all rights in and to any patent, design, copyright, trade mark, trade name, trade secret or other intellectual or industrial property right relating to the Works.

Z14.2 IP rights remain vested in the originator and shall not be used for any reason whatsoever other than carrying out the *works*.

Z14.3 The *Contractor* gives the *Employer* an irrevocable, transferrable, non-exclusive, royalty free licence to use and copy all IP related to the *works* for the purposes of constructing, repairing, demolishing, operating and maintaining the works

Z14.4 The written approval of the *Contractor* is to be obtained before the *Contractor's* IP made available to any third party which approval will not be unreasonably withheld or delayed. Prior to making any *Contractor's* IP available to any third party the *Employer* shall obtain a written confidentiality undertaking from any such third party on terms no less onerous than the terms the *Employer* would use to protect its IP

Z14.5 The *Contractor* shall indemnify and hold the *Employer* harmless against and from any claim alleging an infringement of IP rights ("**the claim**"), which arises out of or in relation to:

Z14.5.1 the *Contractor's* design, manufacture, construction or execution of the Works

Z14.5.2 the use of the *Contractor's* Equipment, or

Z14.5.3 the proper use of the Works.

Z14.6 The *Employer* shall, at the request and cost of the *Contractor*, assist in contesting the claim and the *Contractor* may (at its cost) conduct negotiations for the settlement of the claim, and any litigation or arbitration which may arise from it.

Z15 Dispute resolution:

Z15.1 Appointment of the Adjudicator

An *Adjudicator* is appointed when a dispute arises, from the Panel of Adjudicators below. The referring party nominates an Adjudicator, which nomination is either accepted or rejected by the other party. In the instance of a rejection of the nominated *Adjudicator*, the referring Party refers the appointment deadlock to the Chairman of the Johannesburg Bar Council, who appoints an *Adjudicator* listed in the Panel of Adjudicators below

The Parties appoint the *Adjudicator* under the NEC3 Adjudicator's Contract, April 2013

Panel of Adjudicators

Name	Location	Contact details (phone and e mail)
Adv. Ghandi Badela	Gauteng	+27 11 282 3700 ghandi@badela.co.za
Mr. Errol Tate Pr. Eng.	Durban	+27 11 262 4001 Errol.tate@mweb.co.za
Adv. Saleem Ebrahim	Gauteng	+27 11 535-1800 salimebrahim@mweb.co.za
Mr. Sebe Msutwana Pr. Eng.	Gauteng	+27 11 442 8555 sebe@civilprojects.co.za
Mr. Sam Amod	Gauteng	sam@samamod.com
Adv. Sias Ryneke SC	Gauteng	083 653 2281 ryneke@duma.nokwe.co.za
Mr. Emeka Ogbugo (Quantity Surveyor)	Pretoria	+27 12 349 2027 emeka@gosiame.co.za

Z15.2 Appointment of the Arbitrator

An *Arbitrator* is appointed when a dispute arises from the Panel of Arbitrators below. The referring party nominates an Arbitrator, which nomination is either accepted or rejected by the other party. In the instance of a rejection of the nominated *Arbitrator*, the referring Party refers the appointment deadlock to the Chairman of the Johannesburg Bar Council, who appoints an *Arbitrator* listed in the Panel of *Arbitrators* below

Panel of Arbitrators

Name	Location	Contact details (phone and e mail)
Adv. Ghandi Badela	Gauteng	+27 11 282 3700 ghandi@badela.co.za
Mr. Errol Tate Pr. Eng.	Durban	+27 11 262 4001 Errol.tate@mweb.co.za
Adv. Saleem Ebrahim	Gauteng	+27 11 535-1800 salimebrahim@mweb.co.za
Mr. Sebe Msutwana Pr. Eng.	Gauteng	+27 11 442 8555 sebe@civilprojects.co.za
Mr. Sam Amod	Gauteng	sam@samamod.com
Adv. Sias Ryneke SC	Gauteng	083 653 2281 reyneke@duma.nokwe.co.za
Mr. Emeka Ogbugo (Quantity Surveyor)	Pretoria	+27 12 349 2027 emeka@gosiame.co.za

Z16 Notification of a compensation event

Z16.1 Delete “eight weeks” in clause 61.3 and replace with “four weeks”. Delete the words “unless the event arises from the Project Manager or the Supervisor giving an instruction, issuing a certificate, changing an earlier decision or correcting an assumption.”

Z17 BBBEE Certificate

Z17.1 The *Contractor* shall be expected to annually present a compliant BEE Certificate. Failure to do adhere to these requirements shall be considered a material breach of the conditions of this Contract, the sanction for which may be a cancellation of this Contract.

Z18 Communication

Z18.1 **Add a new Core Clause** 14.5 and 14.6 to read as follows:
The *Project Manager* requires the written consent of the Employer if an action will result in a change to the design, scope, and Works information that is 5% or more

Z18.2 The *Project Manager* requires the written consent of the Employer if an action will result in the Completion Date being extended by more than 30 days.

Z19 Delegation

As stipulated by Section 37(2) of the Occupational Health and Safety Act No. 85 of 1993 as amended the *Contractor* agrees to the following:

Z19.1 As part of this contract the *Contractor* acknowledge that it (mandatory) is an employer in its own right with duties as prescribed in the Occupational Health and Safety Act No 85 of 1993 as amended and agree to ensure that all work being performed, or Equipment, Plant and Materials being used, are in accordance with the provisions of the said Act, and in particular with regard to the Construction Regulations

PART C1.2b CONTRACT DATA

PART TWO – DATA PROVIDED BY THE CONTRACTOR

Clause	Statement	Data
10.1	The Contractor is (Name): Address: Telephone No. Fax No.	
11.2	The <i>working areas</i> are	Only the Site Area. See C4 'Site Information'
24.1	The <i>Contractor's Key people</i> are:	CV's to be appended to Tender Schedule
	Name:	
	Job:	
	Responsibility:	
	Qualifications:	
	Experience:	
	Name:	
	Job:	
	Responsibility:	
	Qualifications:	
	Experience:	
	Name:	
	Job:	
	Responsibility:	
	Qualifications:	
	Experience:	

11.2	The <i>completion date</i> is	24 months after signing of Contract by ACSA
11.2	The following matters will be included in the Risk Register	• Existing Services • Access to Site • Delay in supply of material and/or equipment • Progress of the works against the program • Travelling public and ACSA stakeholders • Long lead items • Weather conditions • Project Program delay • Payment delay
11.2	The <i>Works Information</i> is in	Part C3 'Scope of Works' section of this contract
31.1	The programme identified in the	Program schedule as per tender submission

Part C1: Agreements and Contract Data

C1.3: Form of Guarantee

This form is applicable to the successful contractor.

PRO FORMA FOR PERFORMANCE BOND

PERFORMANCE BOND

[TO BE REPLICATED ON BANK'S LETTERHEAD]

Brief description of contract.....

Name and address of Beneficiary.....

..... (whom the contract defines as the Contractor).

We, the undersigned and..... in our capacities as Guarantor's..... of (**Registration Number:**) (hereinafter called "the Bank") have been informed that hereinafter called the 'Principal') is your Contractor under such contract, which requires him to obtain an irrevocable, unconditional performance security.

At the request of the Principal, we(name of bank) hereby irrevocably undertake to pay you, the Employer, any sum or sums not exceeding in total the amount of(the "Guaranteed Amount") upon receipt by us of your first written demand stating that such an amount (or lesser amount) as may be claimed is due and payable to the Employer.

This guarantee constitute an irrevocable, unconditional, non-negotiable and non-transferable undertaking to pay in accordance with the above, subject to the proviso that this Letter will not be interpreted as extending the Bank's liability to anything more than the Guaranteed Amount.

Notwithstanding anything to the contrary herein contained, the Bank's obligation shall be construed as principal and not as accessory to the contract and shall not be delayed or discharged by the fact that a dispute exists between the Employer and the Contractor.

We undertake to pay you such Guaranteed Amount upon receipt by us, within such period of 14 days, of your first written demand stating that such an amount (or lesser amount) as may be claimed is due and payable to the Employer.

The guarantee shall be governed by and construed in accordance with the laws of the Republic of South Africa

Signed at _____ on _____ 20....

For:

Registration Number:

Name and Position

As witnesses:

1. _____

2. _____

PART C1: AGREEMENTS AND CONTRACT DATA

C1.4: OCCUPATIONAL HEALTH AND SAFETY AGREEMENT

OCCUPATIONAL HEALTH AND SAFETY AGREEMENT

AGREEMENT IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH and SAFETY ACT (ACT 85 Of 1993) and CONSTRUCTION REGULATION 5.1(k)

OBJECTIVES

To assist Airport Company South Africa (ACSA) in order to comply with the requirements of:

1. The Occupational Health and Safety (Act 85 of 1993) and its regulations and
2. The Compensation for Occupational Injuries and Diseases Act (Act 130 of 1993) also known as the (COLD Act).

To this end an Agreement must be concluded before any contractor/ subcontracted work may commence

The parties to this Agreement are:

Name of Organisation: AIRPORTS COMPANY SOUTH AFRICA KING SHAKA INTERNATIONAL AIRPORT
Physical Address: Airport Company South Africa King Shaka International Airport King Shaka Drive, La Mercy 4405

Hereinafter referred to as “Client”

Name of organisation:
Physical Address

Hereinafter referred to as “the Mandatary/ Principal Contractor”

MANDATORY'S MAIN SCOPE OF WORK

Design, Supply, Installation, Testing and Commissioning of Power Factor Correction equipment at King Shaka International Airport for a 24-Month Contract period.

GENERAL INFORMATION FORMING PART OF THIS AGREEMENT

1. The Occupational Health and Safety Act comprises of SECTION 1-50 and all unrepealed REGULATIONS promulgated in terms of the former Machinery and Occupational Safety Act No.6 of 1983 as amended as well as other REGULATIONS which may be promulgated in terms of the Act and other relevant Acts pertaining to the job in hand.
2. "Mandatory" is defined as including as agent, a principal contractor or a contractor for work, but WITHOUT DEROGATING FROM HIS/HER STATUS IN HIS/HER RIGHT AS AN EMPLOYER or user of the plant
3. Section 37 of the Occupational Health and Safety Act potentially punishes Employers (PRINCIPAL CONTRACTOR) for unlawful acts or omissions of Mandatories (CONTRACTORS) save where a Written Agreement between the parties has been concluded containing arrangements and procedures to ensure compliance with the said Act BY THE MANDATARY.
4. All documents attached or refer to in the above Agreement form an integral part of the Agreement.
5. To perform in terms of this agreement Mandatories must be familiar and conversant with the relevant provisions of the Occupational Health and Safety Act 85 of 1993 (OHS Act) and applicable Regulations.
6. Mandatories who utilise the services of their own Mandatories (contractors) must conclude a similar Written Agreement with them.
7. Be advised that this Agreement places the onus on the Mandatory to contact the CLIENT in the event of inability to perform as per this Agreement.
8. This Agreement shall be binding for all work the Mandatory undertakes for the client.
9. All documentation according to the Safety checklist including a copy of the written Construction Manager appointment in terms of construction regulation 8, must be submitted 7 days before work commences.

THE UNDERTAKING

The Mandatory undertakes to comply with:

INSURANCE

1. The Mandatory warrants that all their employees and/or their contractor's employees if any are covered in terms of the COID Act, which shall remain in force whilst any such employees are present on the Client's premises. A letter is required prior commencing any work on site confirming that the principal contractor or contractor is in good standing with the Compensation Fund or Licensed Insurer.
2. The Mandatory warrants that they are in possession of the following insurance cover, which cover shall remain in force whilst they and /or their employees are present on the Client's premises, or which shall remain in force for that duration of their contractual relationship with the Client, whichever period is the longest.
 - a. Public Liability Insurance Cover as required by the Subcontract Agreement.
 - b. Any other Insurance cover that will adequately makes provision for any possible losses and/or claims arising from their and /or their Subcontractors and/or their respective employee's acts and/or omissions on the Client's premises.

COMPLIANCE WITH THE OCCUPATIONAL HEALTH and SAFETY ACT 85 OF 1993
--

The Mandatary undertakes to ensure that they and/or their subcontractors if any and/or their respective employees will at all times comply with the following conditions:

1. All work performed by the Mandatary on the Client's premises must be performed under the close supervision of the Mandatary's employees who are to be trained to understand the hazards associated with any work that the Mandatary performs on the Client's premises.
2. The Mandatary shall be assigned the responsibility in terms of Section 16(1) of the OHSAct 85 of 1993, if the Mandatary assigns any duty in terms of Section 16(2), a copy of such written assignment shall immediately be forwarded to the Client.
3. The Mandatary shall ensure that he/she familiarise himself/herself with the requirements of the OHSAct 85 of 1993 and that s/he and his/her employees and any of his subcontractors comply with the requirements.
4. The Mandatary shall ensure that a baseline risk assessment is performed by a competent person before commencement of any work in the Client's premises. A baseline risk assessment document will include identification of hazards and risk, analysis and evaluation of the risks and hazards identified, a documented plan and safe work procedures to mitigate, reduce or control the risks identified, and a monitoring and review plan of the risks and hazards.
5. The Mandatary shall appoint competent persons who shall be trained on any Occupational Health and Safety aspect pertaining to them or to the work that is to be performed.
6. The Mandatary shall ensure that discipline regarding Occupational Health and Safety shall be strictly enforced.
7. Any personal protective equipment required shall be issued by the Mandatary to his/her employees and shall be worn at all times.
8. Written safe working practices/procedures and precautionary measures shall be made available and enforced and all employees shall be made conversant with the contents of these practises.
9. No unsafe equipment/machinery and/or articles shall be used by the Mandatary or contractor on the Client's premises.
10. All incidents/accidents referred to in OHSAct shall be reported by the Mandatary to the Provincial Director: Department of Labour as well as to the Client.
11. No user shall be made by the Mandatary and/or their employees and or their subcontractors of any of the Client's machinery/article/substance/plant/personal protective equipment without prior written approval.
12. The Mandatary shall ensure that work for which the issuing of permit is required shall not be performed prior to the obtaining of a duly completed approved permit.
13. The Mandatary shall ensure that no alcohol or any other intoxicating substance shall be allowed on the Client's premises. Anyone suspected to be under the influence of alcohol or any other intoxicating substance shall not be allowed on the premises. Anyone found on the premises suspected to be under the influence of alcohol or any other intoxicating substance shall be escorted off the said premises immediately.
14. Full participation by the Mandatary shall be given to the employees of the Client if and when they inquire into Occupational Health and Safety.

FURTHER UNDERTAKING

1. Only a duly authorised representative appointed in terms of Section 16.2 of the OHS Act is eligible to sign this agreement on behalf of the Mandatary. The signing power of this representative must be designated in writing by the Chief Executive Officer of the Mandatary. A copy of this letter must be made available to the Client.
2. The Mandatary confirms that he has been informed that he must report to the Client's management, in writing anything he/she deems to be unhealthy and /or unsafe. He has versed his employees in this regard.
3. The Mandatary warrants that he/she shall not endanger the health and safety of the Client's employees and other persons in any way whilst performing work on the Client's premises.
4. The Mandatary understands that no work may commence on the Client's premises until this procedure is duly completed, signed and received by the Client.
5. Non-compliance with any of the above clauses may lead to an immediate cancellation of the contract.

ACCEPTANCE BY MANDATARY

In terms of section 37(2) of the Occupational Health and Safety Act 85 of 1993 and section 5.1(k) of the Construction Regulations 2014,

I a duly authorised 16.2 Appointee acting for and on behalf of (company name) undertake to ensure that the requirements and the provision of the OHSAct 85 of 1993 and its regulations are complied with.

Mandatary – WCA/ Federated Employers Mutual No.....

Expiry date

NAME AND SIGNATURE ON BEHALF OF MANDATARY

(Warrant his authority to sign)

DATE

NAME AND SIGNATURE ON BEHALF OF THE CLIENT

AIRPORT COMPANY SOUTH AFRICA

DATE

PART C1: AGREEMENTS AND CONTRACT DATA

C1.5: ACSA INSURANCE CLAUSES

Summary of Terms and other Matters Applicable to Employer Provided Insurance

The successful bidder must source the following insurance cover, which is the deductible in the ACSA insurance cover:

- *Aviation liability insurance covers an indemnity limit not less than R300 000 (three hundred thousand rands).*

Submit proof of insurance to ACSA before the work starts, and annually for the duration of the project.

APPENDIX A

CONTRACTORS CLAIMS ADVICE FORM - FOR ACSA INSURED CONTRACTS UNDER THE ANNUAL POLICY

Send to: Airports Company South Africa

E-Mail The Following People:

Nokulunga.Masiza@airports.co.za

Buhle.Mnguni@airports.co.za

*

.....

.....

.....

.....

.....

* (Please provide name of contracting company, site address, telephone numbers and e-mail address).

RE :ACSA CONTRACTORS : CAR/PL/PI : CLAIM

Date of loss : _____

Reported to site agent by : _____ Date : _____

Reported to Insurance Broker by : _____ Date : _____

Locality of Incident _____

How did the loss occur (cause) ? _____

Details and nature of loss or damage to Contract Works _____

Details of other property damaged _____

Names and address of witnesses _____

Estimated cost of repairs (Separate records of all costs must be kept) R__

Person whom assessor should contact _____

Telephone/Mobile Numbers Of Contact Person_____

Email Address of Contact Person

C2.1 Pricing assumptions: Option B

C2.1 Pricing Assumptions and General Notes

1. All Prices are to be shown excluding VAT unless instructed otherwise stated by the Employer in Tender Data or in an instruction the Employer has given before the bidder enters his Prices.
2. All prices are fixed and firm.
3. There is no CPI escalation on the prices
4. Prices must include customs and duties for items procured overseas.
5. Provision is made on the Final Summary for the applicable Value Added Tax to be added.
6. Abbreviations which may be used in the reference Bills of Quantities are as follows:

mm	=	millimetre	MPa	=	megapascal
m	=	metre	h	=	hour
km	=	kilometre	kg	=	kilogram
m ²	=	square metre	t	=	ton (1000 kg)
m ² .pass	=	square metre-pass	No.	=	number
ha	=	hectare	sum	=	lump sum
m ³	=	cubic metre	MN	=	meganewton
m ³ .km	=	cubic metre-kilometre	P C sum	=	Prime Cost sum
l	=	litre	Prov sum	=	Provisional sum
kl	=	kilolitre	kW	=	kilowatt
MI	=	megalitre	%	=	percent

7. All prices shall be tendered in South African Rands.
8. Principal Contractor to make allowances for Option X13 as it may have an effect on the Contractor's cash flow.
9. Contractor to take cognisance of CIDB requirements as per Construction Industry Development Board (2026) Standard for Developing Skills through infrastructure Contracts. Board Notice 913 of 2026. Government Gazette No.54575, 24 April.

NB: Works for this bid to be carried out during the day (viz 06h00-18h00) and after the last flight and before the first flight viz. from 22:00 – 04:00.

AIRPORTS COMPANY OF SOUTH AFRICA

Design, Supply, Installation, Testing and Commissioning of Power Factor Correction equipment at King Shaka International Airport for a 24-Month Contract period.

C2.2 Pricing Schedule

Refer to the Appendix 2: Pricing Data, which must be signed and stamped.

NB: INSERT A SIGNED AND STAMPED BOQ HERE

C2.3 DECLARATION (In respect of completeness of Tender)

I/we, the undersigned, do hereby declare that these are the properly priced according to part C2.2 of this Contract Document in consecutive order upon which my/our tender for **Design, Supply, Installation, Testing and Commissioning of Power Factor Correction equipment at King Shaka International Airport for a 24-Month Contract period** has been based.

DULY AUTHORISED SIGNATURE and STAMP OF TENDERER/S

DATE

The Table below will be applicable on Contingency amount; The Contractor shall populate the mark up percentage. This will enable ACSA to manage better the contingency when the need arises, it does not affect the Total tendered Amount.

Value of Items	(Z) Mark up (contractor to complete)
R0 – R29,000	%
R30,000 – R49,000	%
R50,000 – R199,000	%
R200,000 – R299,000	%
R300,000 - R500,000 and above	%

Part 3: Scope of Work

Document reference	Title	No of pages
	This cover page	1
C3.1	<i>Employer's Works Information</i>	
C3.2	<i>Contractor's Works Information</i>	
	Total number of pages	

C3: Scope of Work

C3.1: Employer's Works Information

3.1 Background and or Purpose of this Bid

The existing PFC equipment at KSIA is not suitable to achieve real time PF correction due to limitations in the switching technology as well as non-functioning equipment.

Real time Power Factor correction is required to effectively compensate reactive power consumption at the intake level in order to achieve the benefits associated with an improved Power Factor (PF), namely, energy efficiency, savings on electricity bills as well as increased asset lifespan.

The appointed Contractor is required to conduct Power Quality Studies at the respective installation points to finalise the concept PFC system sizes. The full scope of work for the appointed Contractor will be to Design, Supply, Install, Test and Commission new PFC equipment as per scope of work and technical requirements.

The proposed PFC technology/systems are to be compliant with the specifications as well as the schedule of requirements that are contained in this bid document.

C3.2: Scope of the Works (Summary)

ACSA KSIA seeks to appoint a prospective service provider to Design, Supply, Installation, Testing and Commissioning of Power Factor Correction equipment at King Shaka International Airport for a 24-Month Contract period.

Phase 1 - Power Quality Studies and System Design:

1.1 Conduct a PQ study at the following points to finalize sizing of the PFC solution

- MSP LV DB 400V incomer
- ATC LV DB 400V incomer
- Airside Substation 1 400V DB main incomer
- Airside Substation 2 400V DB main incomer
- Airside Substation 3 400V DB main incomer
- Airside Substation 4 400V DB main incomer
- Terminal Building Substation 400V DB main incomer 1
- Terminal Building Substation 400V DB main incomer 2
- Terminal Building Substation 400V DB essential section main incomer
- Sky Tanking Fuel Storage Depot 400V DB main Incomer A (Normal supply)
- Sky Tanking Fuel Storage Depot 400V DB main Incomer B (Essential supply)
- Sky Tanking Forward fuel depot 400V MCC main incomer

Specifications for the PQ Study are detailed below:

- Class A IEC 61000-4-30 PQ Meter
- Measurements are to be done over a period of one month
- Calibration certificate of meters to be provided before commencement of measurements
- Meter to be used must be an IEC 61000-4-30 CLASS A meter
- A comprehensive report is to be provided, including analysis of the following (not limited to):
 - Power Quality events during the recording period
 - Regulation
 - Power Factor
 - Harmonics
 - Current and Voltage unbalance
- Report is to be signed off by an ECSA registered professional (Pr. Tech Eng/Pr. Eng)

1.2 PFC System sizing and Integration design:

The appointed Contractor shall develop the following designs for the Engineer's approval:

- Proposed PFC system sizing based on the PQ Study analysis
- Integration of PFC into existing electrical network as per specifications, including single line diagrams, cable reticulation, protection and existing DB modifications
- Integration of PFC into the existing SCADA network

Phase 2 - Procurement:

- Upon Engineer's approval of the appointed Contractors design, sourcing and procurement of the required PFC equipment
- Organize Factory Acceptance Test (FAT) with the Original Equipment Manufacturer (OEM), Client to participate.

Phase 3 - Permitting and Approvals:

- Obtaining all necessary permits and approvals from airport authorities and local regulatory bodies as required.

Phase 4 - Installation, Testing and Commissioning:

Site Facilities:

- Establishment of facilities on site, inclusive of a noticeboard and de-establishment on completion. Facilities include material storage and require provisions for the execution of the works.

New PFC equipment:

- Installation, Testing and Commissioning of new PFC equipment including cabling, protection, measurement, control as well as integration into the existing SCADA network.

Testing and commissioning of new PFC equipment:

- Testing and commissioning of newly installed PFC equipment, including post commissioning PQ Study as per specifications.

Decommissioning, dismantling and discarding of existing PFC equipment:

- Testing and commissioning of newly installed PFC equipment, including post commissioning PQ Study as per specifications.

Phase 5 - Handover:

Final Inspections:

- Joint inspection with airport authorities to ensure compliance with specifications and safety standards.
- Snagging and rectification of any identified defects.

Documentation and Training:

- Provision of as-built drawings, operation and maintenance manuals, test reports, and warranties.
- Training airport personnel in the operation, troubleshooting and basic maintenance of the new PFC systems.

Handover:

- Formal handover of the completed project to the airport project manager.

C3.3: Scope of the Works (Detailed per Substation/Switch room)

The following new Static Var Generator (SVG) PFC equipment is to be provided.

Scope is for the Design, Supply, Rig, Install, Test and commissioning of new SVG PFC systems. Including power cabling, protection, control cabling.

The proposed PFC system sizes and associated equipment are for tendering purposes and will be firmed up during the contractor Design stage of the project as detailed in section C3.2.

3.3.1 MSP LV Switch room

- Decommission and remove the existing PFC equipment, including power and control cabling. Existing equipment to be discarded and disposed at approved disposal site, proof of disposal certificate shall be provided to ACSA.
- Design, Supply, Install, Test and commission **1 x 300kVar SVG PFC** system to provide stepless Power Factor Correction and Harmonic current compensation. PFC equipment to be installed inside switch room
- Install, test and commission **3 x 95mm² 4C Cu Cable** from new PFC equipment to new circuit breaker installed in existing DB, including cable support system
- Install, test and commission new **600A, 50kA MCCB** (Electronic Trip Unit) in existing DB to provide short circuit, overload and earth fault protection
- Supply and Install **3 x 600/5A split core CTs** on existing busbar/cable at the main incomer
- Supply and install new test block to accommodate termination of current and voltage signals from existing DB to new PFC equipment
- Supply and install 7-core, 2.5mm² control cable from new CTs to test block and then to the new PFC equipment
- Supply and install 2.5mm² control cable between PFC controller and existing Diesel Generator controller. The PFC equipment is to be programmed to disconnect from the grid when the diesel generator switches on
- Supply and install 70mm² insulated copper earth cable from new PFC to existing substation earth bar

3.3.2 ATC LV Switchroom

- Decommission and remove existing PFC equipment, including power and control cabling. Existing equipment to be discarded and disposed at approved disposal site, proof of disposal certificate shall be provided to ACSA
- Design, Supply, Install, Test and commission **1 x 300kVar SVG PFC** system to provide stepless Power Factor Correction and Harmonic current compensation. PFC equipment to be installed inside switch room
- Install, test and commission **3 x 95mm² 4C Cu Cable** from new PFC equipment to new circuit breaker installed in existing DB, including cable support system
- Install, test and commission new **600A, 50kA MCCB** (Electronic Trip Unit) in existing DB to provide short circuit, overload and earth fault protection
- Supply and Install **3 x 600/5A split core CT's** on existing busbar/cable at the main incomer
- Supply and install new test block to accommodate termination of current and voltage signals from existing DB to new PFC equipment
- Supply and install 7-core, 2.5mm² control cable from new CT's to test block and then to the new PFC equipment
- Supply and install 2.5mm² control cable between PFC controller and existing Diesel Generator controller. The PFC equipment is to be programmed to disconnect from the grid when the diesel generator switches on
- Supply and install 70mm² insulated copper earth cable from new PFC to existing substation earth bar

3.3.3 Airside Substation 1 LV Switch room

- Decommission and remove existing PFC equipment, including power and control cabling. Existing equipment to be discarded and disposed at approved disposal site, proof of disposal certificate shall be provided to ACSA.
- Design, Supply, Install, Test and commission **2 x 200kVAr SVG PFC** system to provide stepless Power Factor Correction and Harmonic current compensation. PFC equipment to be installed inside substation LV room. The systems are to be connected in parallel to achieve the total required compensation.
- Install, test and commission **2 x 95mm² 4C Cu Cable** from **each** new PFC system to new circuit breaker installed in existing DB, including cable support system
- Install, test and commission **new 400A, 50kA MCCB** (Electronic Trip Unit) **per PFC system**, in existing DB to provide short circuit, overload and earth fault protection
- Supply and Install **3 x 400/5A split core CT's for each system** on the existing busbar/cable at the main incomer
- Supply and install new test block **per system** to accommodate termination of current and voltage signals from existing DB to new PFC equipment
- Supply and install 7-core, 2.5mm² control cable from new CT's to test block and then to the new PFC equipment
- Supply and install 2.5mm² control cable between PFC controller and existing Diesel Generator controller. The PFC equipment is to be programmed to disconnect from the grid when the diesel generator switches on
- Supply and install 70mm² insulated copper earth cable from new PFC to existing substation earth bar

3.3.4 Airside Substation 2 LV Switch room

- Design, Supply, Install, Test and commission **1 x 100kVAr SVG PFC** system to provide stepless Power Factor Correction and Harmonic current compensation. PFC equipment to be installed inside switch room
- Install, test and commission **1 x 95mm² 4C Cu Cable** from new PFC equipment to new circuit breaker installed in existing DB, including cable support system
- Install, test and commission new **200A, 50kA MCCB** (Electronic Trip Unit) in existing DB to provide short circuit, overload and earth fault protection
- Supply and Install **3 x 200/5A split core CTs** on existing busbar/cable at the main incomer
- Supply and Install new test block to accommodate termination of current and voltage signals from existing DB to new PFC equipment
- Supply and install 7-core, 2.5mm² control cable from new CTs to test block and then to the new PFC equipment
- Supply and install 2.5mm² control cable between PFC controller and existing Diesel Generator controller. The PFC equipment is to be programmed to disconnect from the grid when the diesel generator switches on
- Supply and install 70mm² insulated copper earth cable from new PFC to existing substation earth bar

3.3.5 Airside Substation 3 LV Switch room

- Design, Supply, Install, Test and commission **1 x 100kVAr SVG PFC** system to provide stepless Power Factor Correction and Harmonic current compensation. PFC equipment to be installed inside switch room
- Install, test and commission **1 x 95mm² 4C Cu Cable** from new PFC equipment to new circuit breaker installed in existing DB, including cable support system
- Install, test and commission new **200A, 50kA MCCB** (Electronic Trip Unit) in existing DB to provide short circuit, overload and earth fault protection
- Supply and Install **3 x 200/5A split core CT's** on existing busbar/cable at the main incomer

- Supply and install new test block to accommodate termination of current and voltage signals from existing DB to new PFC equipment
- Supply and install 7-core, 2.5mm² control cable from new CTs to test block and then to the new PFC equipment
- Supply and install 2.5mm² control cable between PFC controller and existing Diesel Generator controller. The PFC equipment is to be programmed to disconnect from the grid when the diesel generator switches on
- Supply and install 70mm² insulated copper earth cable from new PFC to existing substation earth bar

3.3.6 Airside Substation 4 LV Switch room

- Decommission and remove existing PFC equipment, including power and control cabling. Existing equipment to be discarded and disposed at approved disposal site, proof of disposal certificate shall be provided to ACSA.
- Design, Supply, Install, Test and commission **2 x 200kVar SVG PFC** system to provide stepless Power Factor Correction and Harmonic current compensation. PFC equipment to be installed inside substation LV room. The systems are to be connected in parallel to achieve the total required compensation.
- Install, test and commission **2 x 95mm² 4C Cu Cable** from **each** new PFC system to new circuit breaker installed in existing DB, including cable support system
- Install, test and commission **new 400A, 50kA MCCB** (Electronic Trip Unit) **per PFC system**, in existing DB to provide short circuit, overload and earth fault protection
- Supply and Install **3 x 400/5A split core CT's for each system** on the existing busbar/cable at the main incomer
- Supply and Install new test block **per system** to accommodate termination of current and voltage signals from existing DB to new PFC equipment
- Supply and install 7-core, 2.5mm² control cable from new CT's to test block and then to the new PFC equipment
- Supply and install 2.5mm² control cable between PFC controller and existing Diesel Generator controller. The PFC equipment is to be programmed to disconnect from the grid when the diesel generator switches on
- Supply and install 70mm² insulated copper earth cable from new PFC to existing substation earth bar.

3.3.7 Terminal Building Substation A2 – Incomer 1

- Design, Supply, Install, Test and commission **4 x 300kVar SVG PFC** system to provide stepless Power Factor Correction and Harmonic current compensation. PFC equipment to be installed inside substation LV room. The systems are to be connected in parallel to achieve the total required compensation.
- Install, test and commission **3 x 95mm² 4C Cu Cable** from **each** new PFC system to new circuit breaker installed in existing DB, including cable support system
- Install, test and commission **new 600A, 50kA MCCB** (Electronic Trip Unit) **per PFC system**, in existing DB to provide short circuit, overload and earth fault protection
- Supply and Install **3 x 600/5A split core CT's for each system** on the existing busbar/cable at the main incomer
- Supply and install new test block **per system** to accommodate termination of current and voltage signals from existing DB to new PFC equipment
- Supply and install 7-core, 2.5mm² control cable from new CT's to test block and then to the new PFC equipment
- Supply and install 2.5mm² control cable between PFC controller and existing Diesel Generator controller. The PFC equipment is to be programmed to disconnect from the grid when the diesel generator switches on

- Supply and install 70mm² insulated copper earth cable from new PFC to existing substation earth bar

3.3.8 Terminal Building Substation A2 – Incomer 2

- Design, Supply, Install, Test and commission **4 x 300kVAr SVG PFC** system to provide stepless Power Factor Correction and Harmonic current compensation. PFC equipment to be installed inside substation LV room. The systems are to be connected in parallel to achieve the total required compensation.
- Install, test and commission **3 x 95mm² 4C Cu Cable** from **each** new PFC system to new circuit breaker installed in existing DB, including cable support system
- Install, test and commission **new 600A, 50kA MCCB** (Electronic Trip Unit) **per PFC system**, in existing DB to provide short circuit, overload and earth fault protection
- Supply and Install **3 x 600/5A split core CT's for each system** on the existing busbar/cable at the main incomer
- Supply and install new test block **per system** to accommodate termination of current and voltage signals from existing DB to new PFC equipment
- Supply and install 7-core, 2.5mm² control cable from new CTs to test block and then to the new PFC equipment
- Supply and install 2.5mm² control cable between PFC controller and existing Diesel Generator controller. The PFC equipment is to be programmed to disconnect from the grid when the diesel generator switches on
- Supply and install 70mm² insulated copper earth cable from new PFC to existing substation earth bar

3.3.9 Terminal Building Substation A2 – Emergency Section

- Decommission and remove existing PFC equipment, including power and control cabling. Existing equipment to be discarded and disposed at approved disposal site, proof of disposal certificate shall be provided to ACSA
- Design, Supply, Install, Test and commission **2 x 200kVAr SVG PFC** system to provide stepless Power Factor Correction and Harmonic current compensation. PFC equipment to be installed inside substation LV room. The systems are to be connected in parallel to achieve the total required compensation.
- Install, test and commission **2 x 95mm² 4C Cu Cable** from **each** new PFC system to new circuit breaker installed in existing DB, including cable support system
- Install, test and commission **new 400A, 50kA MCCB** (Electronic Trip Unit) **per PFC system**, in existing DB to provide short circuit, overload and earth fault protection
- Supply and Install **3 x 400/5A split core CTs for each system** on the existing busbar/cable at the main incomer
- Supply and install new test block **per system** to accommodate termination of current and voltage signals from existing DB to new PFC equipment
- Supply and install 7-core, 2.5mm² control cable from new CTs to test block and then to the new PFC equipment
- Supply and install 2.5mm² control cable between PFC controller and existing Diesel Generator controller. The PFC equipment is to be programmed to disconnect from the grid when the diesel generator switches on
- Supply and install 70mm² insulated copper earth cable from new PFC to existing substation earth bar

3.3.10 Sky Tanking – Fuel Storage Depot – Incomer A

- Decommission and remove existing PFC equipment, including power and control cabling. Existing equipment to be discarded and disposed at approved disposal site, proof of disposal certificate shall be provided to ACSA

- Design, Supply, Install, Test and commission **2 x 200kVar SVG PFC system** to provide stepless Power Factor Correction and Harmonic current compensation. PFC equipment to be installed inside substation LV room. The systems are to be connected in parallel to achieve the total required compensation.
- Install, test and commission **2 x 95mm² 4C Cu Cable** from **each** new PFC system to new circuit breaker installed in existing DB, including cable support system
- Install, test and commission **new 400A, 50kA MCCB** (Electronic Trip Unit) **per PFC system**, in existing DB to provide short circuit, overload and earth fault protection
- Supply and Install **3 x 400/5A split core CT's for each system** on the existing busbar/cable at the main incomer
- Supply and install new test block **per system** to accommodate termination of current and voltage signals from existing DB to new PFC equipment
- Supply and install 7-core, 2.5mm² control cable from new CT's to test block and then to the new PFC equipment
- Supply and install 2.5mm² control cable between PFC controller and existing Diesel Generator controller. The PFC equipment is to be programmed to disconnect from the grid when the diesel generator switches on
- Supply and install 70mm² insulated copper earth cable from new PFC to existing substation earth bar

3.3.11 Sky Tanking – Fuel Storage Depot – Incomer B

- Decommission and remove existing PFC equipment, including power and control cabling. Existing equipment to be discarded and disposed at approved disposal site, proof of disposal certificate shall be provided to ACSA
- Design, Supply, Install, Test and commission **2 x 200kVar SVG PFC system** to provide stepless Power Factor Correction and Harmonic current compensation. PFC equipment to be installed inside substation LV room. The systems are to be connected in parallel to achieve the total required compensation.
- Install, test and commission **2 x 95mm² 4C Cu Cable** from **each** new PFC system to new circuit breaker installed in existing DB, including cable support system
- Install, test and commission **new 400A, 50kA MCCB** (Electronic Trip Unit) **per PFC system**, in existing DB to provide short circuit, overload and earth fault protection
- Supply and Install **3 x 400/5A split core CTs for each system** on the existing busbar/cable at the main incomer
- Supply and install new test block **per system** to accommodate termination of current and voltage signals from existing DB to new PFC equipment
- Supply and install 7-core, 2.5mm² control cable from new CTs to test block and then to the new PFC equipment
- Supply and install 2.5mm² control cable between PFC controller and existing Diesel Generator controller. The PFC equipment is to be programmed to disconnect from the grid when the diesel generator switches on
- Supply and install 70mm² insulated copper earth cable from new PFC to existing substation earth bar

3.3.12 Sky Tanking – Forward Fuel Depot

- Design, Supply, Install, Test and commission **1 x 100kVar SVG PFC system** to provide stepless Power Factor Correction and Harmonic current compensation. PFC equipment to be installed inside switch room
- Install, test and commission **1 x 95mm² 4C Cu Cable** from new PFC equipment to new circuit breaker installed in existing DB, including cable support system
- Install, test and commission **new 200A, 50kA MCCB** (Electronic Trip Unit) in existing DB to provide short circuit, overload and earth fault protection

- Supply and Install **3 x 200/5A split core CTs** on existing busbar/cable at the main incomer
- Supply and install new test block to accommodate termination of current and voltage signals from existing DB to new PFC equipment
- Supply and install 7-core, 2.5mm² control cable from new CTs to test block and then to the new PFC equipment
- Supply and install 2.5mm² control cable between PFC controller and existing Diesel Generator controller. The PFC equipment is to be programmed to disconnect from the grid when the diesel generator switches on
- Supply and install 70mm² insulated copper earth cable from new PFC to existing substation earth bar.

3.3.13 Decommissioning and safe disposal of existing equipment

Decommission and discarded, safe disposal at an approved disposal site, proof of disposal certificate shall be provided to ACSA:

- 2 x 250kVAr LV PFC units
- 4 x 300kVAr LV PFC units
- 2 x 3000kVAr MV PFC units

3.3.13.1 Summary of PFC Systems

3.3.13.2 Bidders are required to take measurements of the existing substation rooms during the compulsory site visit to inform the contractor's design.

The PFC systems are summarised in the table below:

No.	Substation/Switchroom/Distribution Board	kVAr Requirement	Proposed PFC System(s)
1	MSP LV Switchroom	300kVAR	1 x 300kVAR Static VAr Generator
2	ATC LV Switchroom	300kVAR	1 x 300kVAR Static VAr Generator
3	Airside Substation 1 LV DB	400kVAR	2 x 200kVAR Static VAr Generator
4	Airside Substation 2 LV DB	100kVAr	1 x 100kVAR Static VAr Generator
5	Airside Substation 3 LV DB	100kVAr	1 x 100kVAR Static VAr Generator
6	Airside Substation 4 LV DB	400kVAR	2 x 200kVAR Static VAr Generator
7	Terminal Building Substation A2 - Incomer 1	1200kVAr	4 x 300kVAR Static VAr Generator
8	Terminal Building Substation A2 - Incomer 2	1200kVAr	4 x 300kVAR Static VAr Generator
9	Terminal Building Substation A2 - Emergency Section	350kVAr	2 x 200kVAR Static VAr Generator
10	Sky Tanking - Fuel Storage Depot - Incomer A	400kVAR	2 x 200kVAR Static VAr Generator
11	Sky Tanking - Fuel Storage Depot - Incomer B	400kVAR	2 x 200kVAR Static VAr Generator
12	Sky Tanking - Forward Fuel Depot (Airside)	100kVAr	1 x 100kVAR Static VAr Generator

3.4 DETAILED TECHNICAL SPECIFICATIONS

The project shall be executed in full accordance with the detailed technical specifications outlined herein, together with the Bill of Quantities (BoQ) contained in Annexure A and the Technical Schedule of requirements forming part thereof.

3.3.14 General

3.3.14.1 Description

The proposed PFC equipment will provide Static VAr compensation and Harmonic current compensation using IGBT power electronic technology. The equipment will be connected to the respective LV distribution boards at a nominal voltage of 400V, 50Hz.

The PFC equipment shall be rated for the following conditions:

- Rated voltage: 360 – 440Vac
- Rated frequency: 50Hz
- Compensation type: 3-phase
- Earthing system: TN-C, TN-S and TN-C-S

A summary of the technical requirements is provided below.

3.3.14.2 Relevant standards

The proposed solution shall at a minimum comply with the following standards:

Standard	Description
IEC 61439	Low-voltage switchgear and control gear assemblies
IEC 61000-3-2	Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions
IEC 60146-1-1	Semiconductor converters - General requirements and line commutated converters
IEEE 519 - 2014	IEEE Recommended Practice and Requirements for Harmonic Control in Electric Power Systems
IEC 62443	Industrial communication networks – Network and system security

3.3.14.3 Enclosure

The equipment shall be rated IP41 (Ingress Protection 41) rated steel enclosure, wall-mounted or floor-standing as applicable, with top or bottom cable entry and a powder-coated finish.

The equipment shall have a suitably designed forced ventilation system to manage heat dissipation.

The equipment shall be mounted on a suitably designed base frame to provide ground floor clearance.

Doors are to be lockable to prevent unauthorised access.
Internal safety partitions shall be provided to minimise accidental contact risk.

Floor standing units shall provide for a door interlocked circuit breaker. Power connections shall be screened off to prevent accidental contact after terminations are completed.

3.3.14.4 Service Conditions

The proposed PFC shall be suitable to operate in the following conditions:

Continuous operation ambient temperature:	16°C to +50°C.
Relative Humidity:	0 - 95%, non-condensing
Operating altitude:	0 to 1000m (no derating)

3.3.15 PFC Performance Specifications

The PFC equipment shall be able to function in multiple modes to provide; reactive power correction, balancing of load current and harmonic compensation both simultaneously and independently as standalone functions.

Reactive Power compensation:

Reactive power compensation shall improve displacement power factor through VAr injection (leading or lagging) using a IGBT technology.

- Provide stepless power factor correction per phase to dynamic and rapidly changing loads
- Accuracy should be within 1 kVAr with instantaneous reactive power control
- Power factor control is to be dynamic and programmable from 0.6 Inductive to 0.6 Capacitive providing power factor correction for leading and lagging VAr control.
- Responds to load changes within 25µs, resulting in a stable, power factor even in dynamic load conditions.
- The controller shall include an option to achieve optimized PF correction. Optimized PF correction shall be designed to prevent correction when the system PF is closer to unity than the user programmed PF set point.

Harmonic Correction:

- Provide harmonic current mitigation typically present in commercial and industrial loads
- Compensation shall limit the following harmonic
- Simultaneous filtering shall be provided for at least four individual harmonics, notably the 5th, 7th, 11th and 13th harmonic orders
- Harmonic correct must be fully selectable and adjustable in amplitude (%) and be able to be switched on or off depending on site requirements

3.3.16 Operation and Interface capabilities

The PFC equipment shall:

- Be able to sense any resonance and take corrective actions to reduce current output at/near the resonant frequency, to prevent occurrence of resonance
- Automatically check for CT polarity errors and be able to apply correction to the settings as required.
- Include a built-in EMC filter, certified to CE and carry the CE mark.
- Operate on positive or negative phase sequence and shall not be sensitive to phase rotation
- Forced mechanical ventilation shall be used to ensure heat dissipation. Speed control fans shall be employed.
- Reduce its output automatically when ambient temperature is above its limits and self-protect by switching off before maximum temperature threshold is reached, the unit shall employ an auto restart function once temperature is within acceptable limits
- Auto-restart on loss of mains supply, without any user intervention. Previous settings and configurations shall not be lost on restart.

- Diagnostics files, commissioning documents and event history shall be available for download directly from the equipment service port.

Parallel PFC units:

- Multiple units configured in parallel to provide additional compensation shall use a communication bus between each operating unit. Load CTs on parallel units shall not be acceptable
- The units shall function independently. If one unit is stopped or faulted, the remaining units will continue to operate normally and make up for the lost capacity caused by the faulted unit – within limitations of equipment rating.
- Parallel PFC units shall offer full redundancy. PFC units shall support multi-master, multi-slave arrangements.

3.3.17 Protection

The Internal components of the PFC unit will be protected via fuses and circuit breakers. The tie-in cable between the PFC and the existing network will be protected via a suitably rated MCCB that will provide overload and S/C protection. The new MCCB will be retrofitted into the existing LV panels.

The main CB on the PFC unit shall be interlocked with the door mechanism to prevent incidental contact with live components.

3.3.18 Measurement and Control

3.3.18.1.1 PFC Controller

- The PFC equipment shall have a panel mounted HMI with touch screen control rated IP65, dust tight and liquid resistant.
- It shall have provision to display waveform and provide a bar graph feature to display specific parameters.
- Performance trend curves shall be displayed for load total RMS current, load RMS harmonic current per phase, PFC harmonic current output per phase, AC mains voltage per phase, THDi, TDD, load RMS reactive current and PFC RMS reactive current output. Further there should be an option for screen capture for each of the screens in the Human Machine Interface (HMI).
- Bar graphs shall be provided for display of the mains and load harmonic current amplitudes per harmonic order.
- HMI shall display operating and setup parameters plus event/fault messages in plain English, without the sole use of error codes
- HMI shall provide a step-by-step commissioning protocol.
- The controller shall also allow for paralleling algorithm for intelligent functionality to configure the entire system from any one unit.

3.3.18.1.2 Current Transformers

Current Transformers will be of the split core type. CTs shall be installed on all 3 phases.

Current transformers shall be rated:

- Class 1.0 accuracy or better
- 50/60 Hz or 400 Hz
- 1A or 5A secondary.
- Primary current ratings to match the nominal rating of the main CB (as indicated on technical schedule)

The location of the CT's shall be on the source side of the PFC power connections for all PFC systems whether the system is a single unit or multiple units.

3.3.18.1.3 Test Blocks

Signals from the new Current Transformers (CT's) will be routed via a Measurement/Test block, this will allow for ease of testing and shorting out of CTs.

3.3.18.1.4 Diesel Generator integration

The PFC system must disconnect from the grid when the existing Diesel Generator starts up, the works related to achieve this functionality is to be completed by the appointed Contractor.

3.3.19 Power Cabling

- Power cabling to connect the PFC equipment to the grid shall comply with the following specifications:
 - 4-core LV Cable, PVC, Copper conductor, unarmoured
- Cable shall be supported on cable trays along the route between the PFC and the tie-in point

3.3.20 Communications and Software Platform

- The PFC shall have the ability to communicate over a standard industrial communications network such as Modbus RTU, Modbus TCP/IP. Remote communications shall provide full control and monitoring ability of all PFC functions including all operating parameters and diagnostics.
- The Software Platform shall have specialized data acquisition, visualization, analysis and reporting tools specifically designed for PQ Management applications. Software Platform's web applications shall be simultaneously accessible from their unique web addresses.
- The Software Platform shall have purpose-built dashboard to demonstrate the performance of the PFC system
- The Software Platform shall comply with cybersecurity standard IEC62443
- The Software Platform shall be designed to easily verify set PF Targets and IEEE 519 Power Quality Compliance.

3.3.21 Power Quality Metering

Permanent Class (A) Power Quality analysers shall be installed at each PFC installation point to enable better management of PQ at each major LV switch room. The meter/analyser is to be retrofitted into the existing LV DB.

The meters shall provide real-time cycle by cycle data that can be downloaded to a local computer or accessed remotely via network connection.

Specialised PQ software shall be provided to process and analyse the PQ data.

Specifications as follows:

- Class A IEC 61000-4-30 PQ Meter
- Suitable for a 400V, 50Hz system
- Measurements must be cycle by cycle (not average)
- Sampling rate to be minimum 512 samples per cycle
- Internal memory to be minimum 4GB

3.3.22 Installation

- Installation shall be in accordance with the final approved for construction drawings in line with signed of workshop drawings.
- Installation shall comply with electrical, safety and environmental regulations
- All components and materials shall be sourced from reputable suppliers and be fit for purpose in accordance with the approved final design.

3.3.23 Testing and Commissioning

3.3.23.1 Factory Acceptance Test

- Prior to shipment, the manufacturer shall fully test the performance of the PFC at full current and rated voltage while functioning as a harmonic correction device to assure technical compliance with specifications
- The FAT shall be witnessed by the Client as well as the Client's Engineer
- A certified test report (FAT Report) shall be provided to the Client on completion of the tests

3.3.23.2 Site Acceptance Test

- The PFC equipment shall be tested once more after installation to ensure conformance to the specifications post installation.

3.3.23.3 Commissioning

- The PFC equipment shall be commissioned by a suitably qualified and experienced commissioning engineer.

3.3.23.4 Post commissioning Power Quality Study

- A post-commissioning PQ study will be conducted to prove functionality of the newly installed PFC equipment. A PQ meter will be installed at tie-in point for each of the newly installed PFC.

Specifications for the PQ study are as follows:

- Class A IEC 61000-4-30 PQ Meter
- Measurements are to be done over a period of 1 month
- Calibration certificate of meters to be provided before commencement of measurements
- Meter to be used must be an IEC 61000-4-30 CLASS A meter
- A comprehensive report is to be provided, including analysis of the following (not limited to):
 - Power Quality events during the recording period
 - Regulation
 - Power Factor
 - Harmonics
 - Current and Voltage unbalance
- Report is to be signed off by the appointed Consultant registered professional (Pr. Tech Eng/Pr. Eng) on behalf of the client (ACSA).

3.3.24 Quality Assurance

- The manufacturer of the PFC equipment shall be a company engaged in the fabrication of low voltage PFC/active harmonic filters and whose equipment have been in industry service for a minimum of 5 years.
- The manufacturing plant shall be ISO 9001 certified.
- Proof of ISO 9001 certificate to be provided by the successful bidder post award.

3.3.25 Training and Handover

- The appointed Contractor shall train the Client's maintenance personnel on procedures related to startup and shutdown, troubleshooting, servicing, data extraction, analyses and preventative maintenance.

- Upon completion, the Contractor shall compile a closeout file containing the following minimum information:
 - OEM user manuals including standard operating procedures (SOP).
 - OEM brochures/technical catalogues/maintenance schedules
 - List of minimum critical spare parts
 - Drawings (SLD, DGA etc.)
 - ACSA shall retain full software ownership and administrative access rights and may appoint a third party for maintenance after the guarantee period.
 - Contractor to provide OEM support continuity letter

Warranty documentation

3.3.26 Warranties

- The following minimum warranties will be required:
 - PFC – 2 years post commissioning
 - Cables, Circuit Breakers, CT's and Test Blocks – 1 year post commissioning
 - Workmanship – 1 year post commissioning

3.4 MINIMUM RESOURCES REQUIRED AS PER FUNCTIONALITY

the Contractor is obligated to supply the minimum resources listed below as a mandatory condition of this Contract.

Contractor's Key Personnel Required		
Title	Education	Experience
ELECTRICAL TECHNOLOGIST OR ENGINEER	ECSA registered AND BTech or Advanced Diploma in Electrical Engineering or equivalent to NQF 7	• Experience as a Professional Technologist in designing Power Factor Correction systems. • Minimum 2 years' experience
PROJECT MANAGER	SACPCMP or PMP® AND Diploma in Built Environment or equivalent to NQF 6	• Experience as a Professional Construction Project Manager in leading and coordinating the activities of the project team members, ensuring clear communication and collaboration. • Minimum 2 years' experience
ELECTRICIAN	N2 with Trade Test or Higher in Electrical AND Operating Regulations for High Voltage Systems Certificate AND Wireman's Licence	• Electrician to have experience in medium voltage installations. • Minimum 2 years' experience
Health and Safety Officer	Registered with SACPCMP as a Construction Health & Safety Officer. Diploma in Occupational Health and Safety	• Experience as a Construction Health and Safety Officer in projects inherently involve numerous safety risks associated with working at height, electrical installations, heavy lifting & rigging. • Minimum 2 years' Experience.

3.5 STANDARD OF WORK, EQUIPMENT AND MATERIALS

All work shall be executed in a neat, orderly manner in accordance with ACSA requirements. All equipment must be installed to allow easy access for maintenance. Electrical installations shall comply with SANS 10142 and the specifications outlined in this document.

All equipment and materials used shall be of high-quality design and manufacture and must comply with the relevant specifications and standards referenced in this document.

Every reasonable precaution and provision shall be incorporated in the design of the equipment for the safety and security of the system and for those concerned with its operation and maintenance.

The extent of work described herein shall be read in conjunction with the other parts of the specification, technical schedules and accompanying drawings.

The Electrical Contractor shall provide all materials, equipment, labour and services necessary for the complete, safe and efficient operation of the electrical installation in accordance with the intent of this Specification and the accompanying documentation.

4. INSPECTION OF THE SITE

Tenderers are advised to visit the site and thoroughly acquaint themselves with the nature and extent of the Work to be done, and to make allowance for the items obviously intended and necessary for the proper completion of the Work, although not specifically specified. Claims due to lack of knowledge will not be entertained.

A compulsory pre-tender meeting with representatives of Airports Company South Africa (ACSA) will take place at the KSIA at the time and date as indicated in the Tender Notice and Invitation to Tender.

Tenderers that do not attend the compulsory site visit/inspection will be liable for disqualification.

5. PROGRAMME

The Electrical Contractor shall draw up and submit to the Employer a Programme of works.

Should the Programme be altered for any reason prior to completion of the Contract then the Electrical Contractor shall submit the revised Programme to the Employer.

The Electrical Contractor shall ensure that he has adequate staff available to complete the contract.

The cost of overtime, additional labour and plant for the completion of the works in accordance with the Programme shall be included in the Electrical Contractors' price for the project.

The costs of any work outside the requirements of the programme or necessary under exceptional circumstances shall be for the Employer's account only under a Variation Order if agreed to in writing before the work takes place.

Installation of new work and connections to the existing work shall be planned to ensure minimal interference with the regular operation of existing facilities. Necessary temporary shutdowns of existing services must be approved in writing by the Employer.

6. ELECTRICAL CONTRACTOR'S RESPONSIBILITY

The Electrical Contractor shall be responsible for the supply, factory testing, delivery to site, offloading, storage until required, installation, erection, site testing, commissioning and handing over in working order the electrical systems detailed by this Specification and scope of works. The Contractor shall provide all materials, equipment and services necessary for the complete, safe and efficient progress and completion of the Contract.

The Electrical Contractor shall arrange timeously with the local supply authority/ACSA for the isolation and earthing of the existing electrical services as and when required.

The Electrical Contractor shall ensure that the unnecessary interrupting of electrical services is avoided and shall schedule the Work to minimize power outages, if required.

The Electrical Subcontractor shall provide all materials, equipment, labour and services necessary for the complete, safe and efficient operation of the electrical installation in accordance with the intent of this Specification and Drawings. The works shall be carried out strictly in accordance with the following:

- The Occupational Health and Safety Act No. 85 of 1993 and the relevant Regulations as amended.
- The Code of Practice for the Wiring of Premises - SANS 10142-1 as amended.
- The relevant local by-laws and regulations of the Supply Authority.
- Major National tenant specifications.

7. DELIVERY AND STORAGE

The Contractor shall make his own arrangements for the provision, transport, offloading and storage of materials and shall provide his own handling plant. Under no circumstances shall he expect or request the Supply Authority or the Employer to provide and take delivery of or to store materials on his behalf.

8. INSPECTION AND TESTS

The Employer reserves the right to inspect any equipment being manufactured in terms of the Contract, and to require that up to 5% of such equipment be subjected to such tests as may be defined in writing by the Employer prior to delivery to site of the said equipment. All such tests shall be carried out in the presence of the Employer. Any waiving of this right does not relieve the Contractor of supplying and installing equipment in full accordance with the Contract and to the approval of the Employer. In the event of inspection and testing being required the details of this requirement will be conveyed in writing.

9. CONTRACT MANAGEMENT

Management meetings

- Risk Reduction meeting to be held monthly.
- Representatives of the contractor and the Airports Company South Africa to be present in the meeting.
- Meeting to be held at the Employer's site and a venue to be communicated a week in advance.

Title and purpose	Approximate time and interval	Location	Attendance by:
Risk reduction meeting and compensation events	Monthly	KSIA Boardroom	<i>Contractor, Employer, Supervisor</i>
Overall contract progress and feedback	Monthly	KSIA Boardroom	<i>Employer, Contractor, Supervisor,</i>

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.

Health and safety risk management

- The contractor shall have a toolbox meeting stating all the health and safety related issues and must be documented as such before any work can start.
- The Contractor shall comply with the health and safety requirements contained Part C1.4 to this Works Information.
- The contractor shall ensure that all personnel performing work have correct PPE

The contractor to ensure that the design and his associated activities (installation, disposal of waste, noise, pollution etc.) complies with ACSA environmental policy. The contractor is required to report monthly on any environmental issues that affect the project or affected by project.

Quality assurance requirements

Within the period stated in the Contact Data, the *Contractor* submits his complete quality control and assurance system (with all quality control and assurance procedures and manuals) for review and acceptance by the *Employer*. The manual includes pro-forma checklists for all requirements of the *Contractor's* quality control and assurance program and those called for in the Scope.

Acceptance by the *Employer* of the *Contractor's* quality assurance programme, quality plans and/or inspection and/or test plans, or of those of his Subcontractors will not relieve the *Contractor* of his obligation to provide services which meet the requirements of the Contract.

10. ENGINEERING AND DESIGN OF THE WORKS

Procedure for submission and acceptance of *Contractor's* design

The contractor's design shall be submitted to the Employer or Employers Agent for review and approval. The design submissions shall be of high quality and comply with the requirements of the specification.

Use of *Contractor's* design

The contractor to ensure adherence to the specification as per tender documents and build the final product for purpose that is intended for.

Equipment required to be included in the *works*

The contractor may use any electrical equipment or tool to ensure the proper completion of works. The list of all tools to be used onsite to be presented as the part of safety file including the safe operating procedures for those tools.

As-built drawings, operating manuals and maintenance schedules

The contractor to provide As-built drawings, operating manuals and maintenance as stated in the Bill of Quantities as the part of the hand-over documentation.

11. CONSTRUCTION

Temporary works, Site services and construction constraints

Site establishment and equipment to be based on the airside. It will be the contractor's responsibility to provide a secure environment for their equipment. The contractor's personnel will be restricted to the contractor's own established site and the agreed area of work. The contractor's personnel will not be permitted at the Airside/restricted areas without the necessary reflective jackets.

Employer's Site entry and security control, permits, and Site regulations.

An induction course must be attended by the contractor and all personnel who will access the site. The contractor to ensure their staff have valid medicals and schedule with the ACSA's project manager for the induction course(s). Security arrangements would be discussed at the induction meeting and should be strictly adhered to. It should be noted that ACSA premises complies to National Key Point Regulations, every person who conduct work at the airport will be subjected to security vetting. ACSA will not be held liable should one of the contractor members fail SAPS vetting process.

All airside services are in restricted areas and access-controlled areas; accordingly it is crucial for the Contractor to note that King Shaka International Airport is a National Key Point and governed as such.

- (a) The Contractor shall be compensated for costs relating to Employer required permits.
- (b) The Contractor must ensure that he/she is, at all times, familiar with the Employer's safety and security requirements relating to permits in order for no services to be delayed as a result thereof. This includes the permit application process (available to the Contractor upon request).
- (c) The Contractor shall have no claim against the Employer in the event that a permit request is refused for reasons not attributable to the Employer.
- (e) The following table is not all inclusive, but is provided for illustration purposes:

<i>Permit</i>	<i>Required by/for</i>	<i>Department</i>
<i>AVOP – Airside Vehicle Operator permit</i>	<i>All drivers of vehicles on airside</i>	<i>ACSA Safety</i>
<i>Airside Vehicle Permit</i>	<i>All vehicles that enter airside</i>	<i>ACSA Safety</i>

<i>Basement Parking permit</i>	<i>All vehicles allowed to enter the delivery basement</i>	<i>ACSA Parking</i>
<i>Personal permit</i>	<i>All persons employed on the airport</i>	<i>ACSA Security</i>
<i>Cell phone permit</i>	<i>All persons taking cell phones to airside</i>	<i>ACSA Security</i>
<i>Lap top permit</i>	<i>All persons taking lap top computers to airside</i>	<i>ACSA Security</i>
<i>Camera permit</i>	<i>All persons taking cameras or camera equipment to airside</i>	<i>ACSA Security</i>
<i>Hot Works Permit</i>	<i>All welding and/metal cutting services</i>	<i>ACSA Safety / Fire and Rescue</i>

(f) Proof of having attended the airside induction training course is required for all personal permit applications. Persons applying for an AVOP must provide proof of having attended an AVOP course. Fees are levied for these courses. Fees are further levied for all permit renewals and refresher courses - where applicable.

(g) Use of cell phones on airside is not permitted unless the user is in possession of an appropriate Airport permit for the device. Cell phone permit issuing authority lies with the ACSA Security department.

(h) The Contractor shall not be allowed to use two-way radios at on the Employer's Premises unless these radios are of the type as approved by the ACSA IT department and are intrinsically safe.

Restrictions to access on Site, roads, walkways and barricades

The Contractor shall protect the site properly and shall so arrange his operations that the minimum danger and inconvenience is caused to airport operations. For this purpose, he shall provide and maintain sufficient signs, lights, barriers, fencing and guarding as may be necessary or required

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

It is expected that contractors wear visible company uniform or reflector jackets with contractor name there-on when entering the premise as form of identification. Permits to be displayed at all times whilst on site.

Work will be conducted during the day (06h00-18h00) and/or at night (10pm – 4am) to minimize the impact on operations. Work program to be submitted with the tender to ensure the manoeuvring area is clear of aircraft movements prior and during construction work.

Title to materials from demolition and excavation

The contractor must submit a method statement to the environmental department regarding explosion and excavations.

Contractor's Equipment

Contractor to keep record of equipment on site, service history etc. and keep a copy on site

Site services and facilities provided by the Employer

The Contractor shall be entitled to use such supplies of electricity and water as may be available on the Site for the purpose of the Works and at his own expense, shall provide any apparatus necessary for such use. The Contractor shall notify ACSA of any equipment or facility, which will be a consumer of electricity and water. The Contractor shall provide everything else necessary for Providing the Works

Facilities provided by the Contractor

Facilities e.g. storage, site offices, vehicle, equipment provided by the contractor should be safeguarded by the contractor during the construction, and be removed off site upon the completion of the contract

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

All operations required in connection with the Agreement shall, as far as the provisions of the Agreement permit, not unnecessarily or in an improper manner encroach upon the use of airport facilities.

The contractor is to take cognizance that the airport is used by others and other contractors may be on site for unrelated projects/services

Site conditions and requirements

Safety measures to be adhered to according OHS Act. Adhere to ACSA airside safety requirements regarding equipment, vehicles, and personnel operating on the airside.

Full risk analysis on working on height, next to aircraft and airside and mitigation thereof to be considered as part of safety file requirements.

Contractor to ensure that other Underground services, other existing services, cable and pipe trenches and covers are identified to prevent any disruption to these services due to contractor's activities.

Contractor to take necessary steps to control noise, dust, water and waste during his/her activities onsite.

Completion, testing, commissioning and correction of Defects

Work to be done by the Completion Date

All work is to be done by the Contractor shall be completed by the Completion Date,

The Project Manager cannot certify Completion until all the work except that listed above has been completed 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.

Use of the works before Completion has been certified

The Employer may use any part of the works before Completion has been certified but if he does so he takes over the part of the works. Any defect must be attended to as stipulated in the defect clause

Commissioning

The contractor to submit the commission procedures and plan to the Project Manager for approval. The commissioning procedure and plans will be adhered to during commissioning.

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

The contractor to ensure that he complies with all ACSA security, safety, environmental and operational requirements prior to the commencement of works complete accordingly

Take over procedures

The works will be handed over partially or fully once commissioned and certified by Project Manager. The commissioning should be witnessed by both ACSA representative and the contractor representative

Access given by the Employer for correction of Defects

The Project Manager arranges for the Employer to allow the Contractor access to and use of a part of the works which has been taken over if needed to correct a Defect. After the works have been put into operation, the Employer may require the Contractor to undertake certain procedures before such access can be granted. Performance tests after Completion.

Performance tests after Completion

Contractor to ensure all necessary tests and calibrations are conducted and submit all reports to the *Employer*

Operational maintenance after Completion

Maintenance manuals and training will be provided by the contractor on completion of works.

12. CONSTRUCTION INDUSTRY DEVELOPMENT BOARD (CIDB) CONTRACT SKILLS DEVELOPMENT GOAL (CSDG) REQUIREMENTS.

Contractor will be required to comply with CIDB Requirements for CSDG as per CIDB's **Standard for Developing Skills through Infrastructure Contracts**.

Skills development requirements

The contractor shall achieve in the performance of the contract the contract skills development goal established in this Standard for developing skills through infrastructure contracts.

The contractor is to determine the skills Methods to be implemented as per the Standard. Financial Penalties may apply to the contractor where CSDG goals are not achieved.

PART C4: SITE INFORMATION

13. SITE LOCATION AND DESCRIPTION

The site is in La Mercy, KwaZulu-Natal, approximately 35 km North of the City Centre of Durban. The site has a full range of vehicular access. The site is located at GPS Co-ordinates: -29°36'25.42" S 31°11'2.12" E

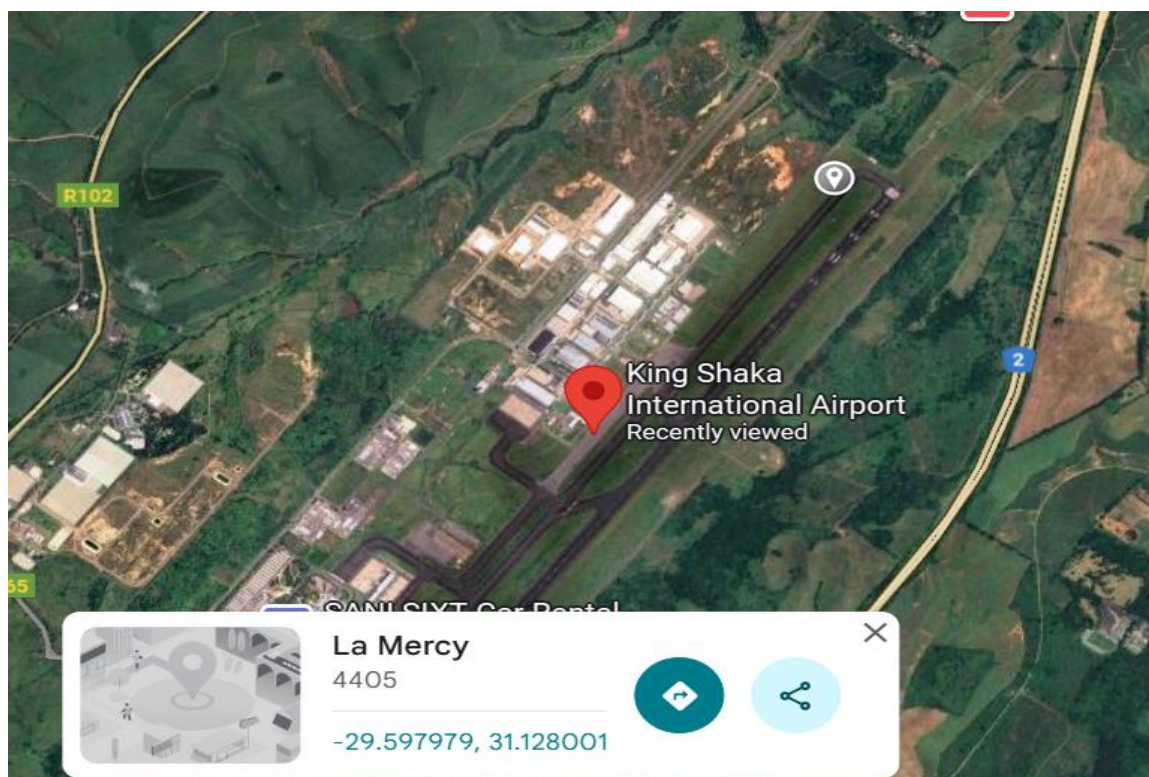


Figure 1: Geographic location

Weather and Environmental Conditions

The works are carried out entirely within an enclosed, permanent, and weather-tight structure.

The Contractor is deemed to have allowed for all normal and abnormal weather conditions in the execution of the works.

Weather conditions do not affect:

- Access to the working areas,
- productivity, sequencing, or method of working,
- storage of materials, plant, or equipment, or
- the Contractor's ability to provide the works in accordance with the Scope.

Weather conditions do not constitute a compensation event where the effects of the weather are prevented by the enclosed nature of the works.