

<b>ZONG 4G</b> A NEW DREAM			CMPAK 2016 Solar Project		
Effective	Owner	Replace	Date	Revision	Site ID
					2166

### **Final Acceptance Certificate (FAC)**

<b>Project Name</b>			
<b>PAT Date</b>	11/28/2017	<b>FAT Date</b>	
<b>Payment Milestone</b>			

*Submission of Certificates / Documents in a binder (Tick if YES/ cross NO. N/A if not applicable)*

Signed BOM / BOQ	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Site Acceptance	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A

No severity /failures (ma//jor/ minor service affecting) during FAT. Site final acceptance report has been agreed & contractor has fulfilled all liabilities as per contract/issued purchase order. Therefore, **FAC** is being issued under this contract/purchase order. No liability related to project, product or workmanship has been observed while issuing this certificate. All Snags highlighted at the time of PAT has been rectified.

<b>NC (Project lead):</b>	<b>NC (Manager):</b>	<b>Regional CTO:</b>
<b>Name:</b>	<b>Name:</b>	<b>Name:</b>
<b>Sign:</b>	<b>Sign:</b>	<b>Sign:</b>
<b>Date:</b>	<b>Date:</b>	<b>Date:</b>

<b>Project Manager (NC HQ)</b>
<b>Name: Younus Ishaq Khan</b>
<b>Sign:</b>
<b>Date:</b>

<b>ZONG 4G</b> A NEW DREAM			CMPAK 2016 Solar Project		
Effective	Owner	Replace	Date	Revision	Site ID
			10-02-2022		2166

## Final Acceptance Test

### TICK SHEET

**Region:** S-3

**Site ID:** 2166

**Address:** QUETTA

**City:** QUETTA

**Site Type:**

(Tick appropriate block):

Greenfield	Rooftop
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(Tick appropriate block):

New site build	Upgrade	Rebuild	Shared Site	Solar site
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#### CONCRETE WORK AND SERVICE ENTRIES

N/A if not applicable.

Item No.	Task description.	Severity	Check Nizam Energy	Verify CMPAK
1	Solar support foundation columns orientation according to site drawing.	A	ok	
2	Solar support foundation columns dimensions as per specification. Record dimensions.	A	ok	
3	Backfill and Compaction of Underground Battery Bank has been done properly.	A	ok	
4	General workmanship.	A	ok	

Checked by (Nizam Energy)

Verified by (CMPAK)

Name: Saqib Gul

Name: \_\_\_\_\_

Sign: \_\_\_\_\_

Sign: \_\_\_\_\_

Date: 10-Feb-2022

Date: \_\_\_\_\_

Effective	Owner	Replace	Date	Revision	Site ID
			10-02-2022		2166

**SOLAR SYSTEM INSTALLATION**

Tick if correct/ cross if not.

N/A if not applicable.

Item no.	Task description.	Severity	Check vendor Nizam Energy	Verify CMPAK
1	Solar panels and battery bank are deployed as per the approved design document. Vendor has the approved design document for supporting this verification	A	ok	
2	Battery bank is in healthy condition and can charge at minimum 0.1C. Battery bank voltage when fully charged and voltage drop when 60% discharge is as per the battery bank data sheet provided by the vendor	A	ok	
3	The quantity and specifications of solar module are in compliance with design requirements.	A	ok	
4	No component in the solar module is loose or damaged. Panels should be firm tight with no vibration or loose bolts	A	ok	
5	Panels as a whole system are providing peak current or watts as per the specifications on a sunny day at around noon time.	A	ok	
6	All parts of the solar panel supports are hot dipped galvanized	A	ok	
7	General workmanship.	A	ok	

Checked by (Nizam Energy)

Verified by (CMPAK)

Name: Saqib Gul

Name: \_\_\_\_\_

Sign: \_\_\_\_\_

Sign: \_\_\_\_\_

Date: 10-Feb-2022

Date: \_\_\_\_\_

Tick if correct/ cross if not!

N/A if not applicable.

Item no.	Task description.	Severity	Check Nizam Energy	Verify CMPAK
1	LCD display in Rectifier Rack works normally	A	ok	
2	LED display in Rectifier Rack works normally	A	ok	
3	When input and connecting loads of rectifier work normally , every rectifier model work normally	A	ok	

Checked by (Nizam Energy)

Verified by (CMPAK)

Name: Saqib Gul

Name: \_\_\_\_\_

Sign: \_\_\_\_\_

Sign: \_\_\_\_\_

Date: 10-Feb-2022

Date: \_\_\_\_\_

ZONG 4G A NEW DREAM			CMPAK 2016 Solar Project		
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			10-02-2022		2166

## SNAG LIST

Fault			Fault Resolved		
Item	Detail Description	Severity Level (A)	Date	Vendor Nizam Energy	Verify CMPAK
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

Note: Vendor to include all faults identified on equipment - specific tests in the above list.

- Severity Level A faults must be resolved immediately.
  - Severity Level B faults must be resolved within 10 days. (Number should not exceed 20)
- Target Date to clear the snags:\_\_

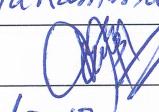
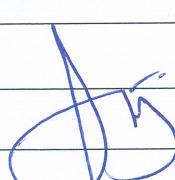
<u>Checked by (Nizam Energy)</u>	<u>Verified by (CMPAK)</u>
Name: <u>Saqib Gul</u>	Name: _____
Sign: _____	Sign: _____
Date: <u>10-Feb-2022</u>	Date: _____

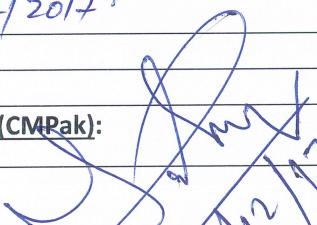
<b>ZONG 4G</b> A CHINA MOBILE COMPANY	<b>CMPak Solar Power Project-2016</b>		
Document Type	Project PO #	PAC Signing Date	Site ID
Provisional Acceptance Certificate (PAC)	PPC-069816 PPC-069821		2166 ✓

### Work Completion Certificate/Provisional Acceptance Certificate (PAC)

Project Name	CMPak Solar Power Project		
PO #	PPC-069816 PPC-069821	Vendor	M/s Nizam Energy (Pvt) Ltd.
Location	Site 2166-Quetta	Region	South-3

It is certified that contractor has successfully completed the Solar Power Project & other allied works as per the defined scope of works mentioned in the issued purchase order & as per BOQ locked for this project. Therefore, Work Completion or Provisional Acceptance Certificate is issued under this contract or purchase order, scope of work /specifications and design requirement as specified by CMPak. No major deficiency or defects in technical design (if applicable) and implementation has been observed while issuing this **Work Completion Certificate** against the aforementioned works at Site 2166 as per above referred contract or purchase order.

Project Manager-(Vendor):	Project Lead-Region (CMPak) :
Name: Muhammad Shoail	Name:
Sign: 	Sign: 
Date: 4/12/2017	Date: 11-12-2017

Regional CTO (CMPak):
Name:
Sign: 
Date:

Site Model

Site Name

Alias

Address

*Sub Site*

City

Region

Band

 1800
 
 2100
 

Site Type  
Civil

 New Site Build
 
 Rebuilt
 

Upgrade

Shared Site

If shared, with

Site Type  
(Technical)

 Hub Site
 
 BTS
 

BTS Model

 Node-b BBU 3900
 
 3012AE
 

3006C

1. CM Pak will provide tagging checklist and tags to contractor.
2. All assets, as per attached list will be tagged by contractor..
3. Tagging sheet is to be signed by CM Pak's designated officers (Rollout and O&M) and contractor at site and by RPA at office. The soft data (Excel Sheet) of Tagging to be prepared by contractor Regional accountant will cross match the Tagging sheet wi
4. All sites for which PAT has been done successfully, the tagging data (hard and soft) is required to be provided within 7 working days.
5. For a successful PAT, the successful completion of clause '3' above is mandatory.

**6. If old equipment is re-used, the old tag / serial numbers shall be written in the tagging sheet which is attached herewith. Note that old tags shall not be replaced with new tags in case of re-use equipment**

**ZONG 4G**

Document Type

Solar Equipment Supply and Services PAT document

Project PO #

PPC-069816  
PPC-069821

Site ID

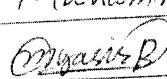
2166

Supply & Services BOQ

Items		Qty	Unit	CMPak Verified
PV Panels	PV Modules Poly-crystalline 250W along with MC4 connectors	36	Nos	✓
Solar Power System	Power Plant 450Amp Infinity S Power System including all allied accessories and cables:  o Fan/Filter Cooling and Front door o 9 universal positions o Hot-swappable modular design o Protection degree IP55 o MCU – (Monitoring and control unit) o Communication via SNMP/RS232 o LVBD o LVLD	1	Nos	✓
	NE050ECO48ATEZ Rectifier/Solar Charge ECO Priority Module	8	Nos	✓
	Pulsar Plus System Controller	1	Nos	✓
	PDU – (Power distribution unit) incl. circuit breakers (8 x 10 A, 6 x 16 A, 2 x 32 A, 2 x 63 A), protections	1	Nos	✓
Underground Battery Cabinet	Underground battery cabinet with GRP Casing and Geothermal Plates, IP68 with fan/filter for ventilation for 800AH bank	1	Nos	✓
	DC power cable, 4 mm <sup>2</sup> Red for panel interconnection	130	Meter	✓
	DC power cable, 4 mm <sup>2</sup> Black for panel interconnection	130	Meter	✓
	DC power cable, 4 mm <sup>2</sup> for Earthing	60	Meter	✓
	DC power cable, 4 mm <sup>2</sup> for Earthing of power cabinet	10	Meter	✓
	Power cable, 70 mm <sup>2</sup> between battery bank and solar controller	60	Meter	✓
	Earthling Cable 70 mm <sup>2</sup> , including associated material required to ground the Solar Solution	25	Meter	✓
	AC power cable, 10 mm (4 core) for AC connection	15	Meter	✓
	Solar Panel Structure Foundation for solar panel design along with underground battery civil works as of given specifications, foundation pad for the solar charge controller cabinet, installation testing and commissioning of complete system in all respect including 3-year complete warranty (for supply and services) and corrective maintenance support.	1	Set	✓

Checked by (Vendor)

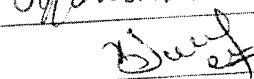
Name: Muhammad Yasin

Sign: 

Date: 28/11/2017

Verified by (CMPAK)

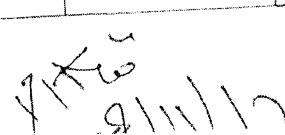
Name: Muhammad Reza

Sign: 

Date: 28-Nov-2017











## Solar Equipment and Services PAT document

Site ID :	2166
PO Number :	PPC-069816 PPC-069821

Asset Tag Sheet

Asset Tag and Description					
Asset Description	Ref No.	Serial Number	Model/Make	Asset Code	Remarks
Solar PV(Polycrystalline) , 265 Watt { 36 panels} including all power cables between solar panels	PV Panels	JA-P6-60-265-3BB-118 JA-P6-60-265-3BB-154	JA Solar, 265Wp	CM1455319	
Underground battery cabinet for 800Ah battery bank along with ventilation system, sensors and allied accessories	Battery Cabinet	NE-SBC-02166	NE-SBC Battery Cabinet	CM1455332	
Power System Cabinet including 08 Eco priority meter / Charge Controllers , Pulsar plus controller and DC distribution complete in all respects as per BOQ	Power System Cabinet	CO-002016-000-004	GE	CM1455320	

Nizam Energy  
Authorized PersonName:  
Signature:  
Date:*Muhammad Yaseen*CM Pak  
Authorized Person: RolloutName:  
Signature:  
Date:*Naseem*CM Pak  
Authorized Person: O & MName:  
Signature:  
Date:CM Pak  
Authorized Person: Fixed Asset Team (FAT)Name:  
Signature:  
Date:  
*Ali*

<b>ZONG</b>			CMPAK 2016 Solar Project		
Effective	Say it all Owner	Replace	Date	Revision	Site ID
					2166

## ACCEPTANCE TEST PROCEDURE

### TICK SHEET

Region: South - 03

Site Name: 2166

Address: Intiqal #147, Tehsil city Quetta -

City: Quetta

Site Type:

(Tick appropriate block):

Greenfield <input checked="" type="checkbox"/>	Rooftop
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(Tick appropriate block):

New site build	Upgrade	Rebuild	Shared Site	Solar site <input checked="" type="checkbox"/>
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Approved layout & DED attached in the PAT folder

Checked by (Vendor)

Name: Muhammad Yasin

Sign: Yasin

Date: 28/11/2017

Verified by (CMPAK)

Name: Ali - Riazuddin

Sign: Ali

Date: 28-Nov-17

<b>ZONG</b>			CMPAK 2016 Solar Project		
Effective	Say it all Owner	Replace	Date	Revision	Site ID
			R166		

**SITE LAYOUT**  
N/A if not applicable.

Item No.	Task description.	Severity Level	Check Vendor	Verify CMPAK
1	Vendor has an approved site layout plan	A	✓	✓
2	Site laid out as per approved plan	A	✓	✓

**CERTIFICATES AND TEST REPORTS IN THE SITE BINDER**  
N/A if not applicable.

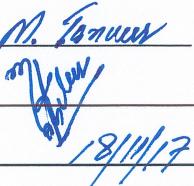
Item No.	Task description.	Severity Level	Check Vendor	Verify CMPAK
1	Steel test report	A	✓	✓
2	Concrete cube test report – 28 days	A	✓	(A)

\*\* Material, approved brands, and labs are already communicated and shared with vendors in the kick-off meeting and minutes of meeting.

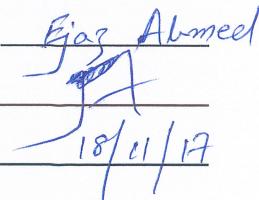
**CONCRETE WORK AND SERVICE ENTRIES**  
N/A if not applicable.

Item No.	Task description.	Severity Level	Check Vendor	Verify CMPAK
1	Concrete cube test results conform to strength requirements of 25 MPa after 28 days	A	✓	(A)
2	Solar support foundation columns orientation according to site drawing.	A	✓	✓
3	Solar support foundation columns dimensions as per specification. Record dimensions.	B	✓	✓
4	Backfill and Compaction of Underground Battery Bank has been done properly.	B	✓	✓
5	Solar Support structures installed as per specification.	A	✓	✓
6	CMPak approved brands and approved labs are being consulted for civil work testing reports and material installation			
7	General workmanship.	B	✓	✓

Checked by (Vendor)

Name: M. Farwarr  
Sign:   
Date: 18/11/17

Verified by (CMPAK)

Name: Ejaz Ahmed  
Sign:   
Date: 18/11/17

ZONG 			CMPAK 2016 Solar Project		
Effective	Say it all Owner	Replace	Date	Revision	Site ID
					R166

### SOLAR SYSTEM INSTALLATION

Tick if correct/ cross if not.

N/A if not applicable.

Item no.	Task description.	Severity Level	Check vendor	Verify CMPak
1	Solar panels and battery bank are deployed as per the approved design document. Vendor has the approved design document for supporting this verification	A	✓	✓
2	Battery bank is in healthy condition and can charge at minimum 0.1C. Battery bank voltage when fully charged and voltage drop when 60% discharge is as per the battery bank data sheet provided by the vendor	A	✓	✓
3	The quantity and specifications of solar module are in compliance with design requirements.	A	✓	✓
4	No component in the solar module is loose or damaged. Panels should be firm tight with no vibration or loose bolts	B	✓	✓
5	The control units in solar panel are positioned and oriented according to design requirements.	A	✓	✓
7	The coating of control unit is intact. The surface of equipment is neat without such stains as fingerprints. All the labels are correct, legible, intact, firmly attached, and hard to be destroyed for aging, soaking and other reasons.	B	✓	✓
8	All the supports of solar array are connected to the site's grounding network.	B	✓	✓
9	Inside the solar power controller, the surge protection grounding is firm, with the grounding lead connected to the site's copper grounding bar.	B	✓	✓
10	The storage batteries and battery brackets are positioned and oriented according to design requirements. The batteries are placed orderly and firmly.	B	✓	✓
11	Panels, Batteries & Charge controller supplied are of approved brand as per specified in the technical specifications and PO	B	✓	✓
12	Panels as a whole system are providing peak current or watts as per the specifications on a sunny day at around noon time. To be verified on charge controller	A	✓	✓
13	Battery cabinet is properly ventilated and has gas exhaust ducts (for underground battery banks)	A	✓	✓
14	Interconnecting cables, DC cables, and earthing cables used are per the technical specifications and comply CMPak standards	A	✓	✓
15	Rationality of installing position for GSU and sensors (for external alarms)	B	✓	✓
16	The Solar Controller and DCDC converter (If available) are positioned and oriented according to design requirements.	B	✓	✓
17	Correct Brand material is used according to specification.	B	✓	✓
18	All parts of the solar panel supports are hot dipped galvanized	A	✓	✓
19	General workmanship.	B	✓	✓

 Say it all			CMPAK 2016 Solar Project		
Effective	Owner	Replace	Date	Revision	Site ID
					R166

Checked by (Vendor)

Name: M.Yasir

Sign: M.Yasir B

Date: \_\_\_\_\_

Verified by (CMPAK)

Name: JYI-reqteend

Sign: Wajid

Date: 28-Nov-17

**SOLAR SYSTEM Alarms Integration**

Tick if correct/ cross if not.

N/A if not applicable.

Item no.	Task description.	Severity Level	Check vendor	Verify CMPak
1	Solar system alarms are properly integrated and operational with CMPak alarm monitoring system and can be visible and monitored at CMPak NOC	A	✓	✓
<b>Commercial Power Alarms</b>				
	CP failure alarm	A	✓	✓
	Phase miss / Low voltage alarm	B	✓	✓
<b>Rectifier Alarms</b>				
	Rectifier input failure alarm	A	✓	✓
	Rectifier module failure alarm	B	✓	✓
	DC low voltage alarm	A	✓	✓
<b>Battery Alarms</b>				
	Battery over temperature alarms	A	✓	✓
	Battery cabinet over temperature alarms	A	✓	✓
	Battery cabinet fan failure alarm	A	✓	✓
<b>DG Alarms</b>				
	DG running alarm	A	✓	✓
	DG failure alarm	A	✓	✓
	Low fuel alarm	B	N/A	N/A

Checked by (Vendor)

Name: M.Yasir

Sign: M.Yasir B

Date: 28/11/2017

Verified by (CMPAK)

Name: Mr. Raseem

Sign: Wajid

Date: 28-Nov-17

**ON AIR by Solar System CHECK LIST**

Tick if correct/ cross if not!

N/A if not applicable.

 Say it all			CMPAK 2016 Solar Project		
Effective	Owner	Replace	Date	Revision	Site ID
					2166

Item no.	Task description.	Severity Level	Check vendor	Verify CMPak
1	Open circuit voltage range of the solar photovoltaic array when sunlight illumination is sufficiently strong , the range is between 90V—140V。Check in junction box side	A	✓	✓
2	Solar controller parameter setting: voltage limit for battery under-voltage alarm must between 46V—48V	B	✓	✓
3	Solar controller parameter setting: voltage limit for battery over-discharge protection must between 42V—48V	B	✓	✓
4	Solar controller parameter setting: voltage limit for battery overcharge alarm must between 57V—60V	B	✓	✓
5	LCD display in Rectifier Rack works normally	B	✓	✓
6	LED display in Rectifier Rack works normally	B	✓	✓
7	The voltage of whole group of battery is higher than 48V after full charging, check in battery side	B	✓	✓
8	When input and connecting loads of rectifier work normally , every rectifier model work normally	B	✓	✓
9	The output voltage of the rectifier is between 53V to 57V, check in rectifier side	A	✓	✓
10	Battery charging and discharging tests	A	✓	✓
11	LLVD & BLVD tests		✓	✓

Checked by (Vendor)

Name: M.Yasir  
 Sign: Myself  
 Date: 28/11/2017

Verified by (CMPAK)

Name: Ali - Riaz ebad  
 Sign: Ali  
 Date: 28-Nov-17

 Say it all			CMPAK 2016 Solar Project		
Effective	Owner	Replace	Date	Revision	Site ID
					2166

## CMPak Civil Approved Brand List

The contractor has used the material from the below listed approved brands during the construction.

S.No.	Material	Severity Level	Approved Brand
1	Cement brands	A	Askari cement, best way cement, lucky cement, DG cement, Fecto, Pak Cement
2	Steel brands	A	Fazal, Ittehad, Itefaq, Mughal, Model, Ishtiaq, Afco, NSS
3	Design companies	A	EDB, Niazi, Exponent engineers, Designmen, MTE
4	Soil/Steel/Concrete tests	A	UET Lahore, UET Taxila, UET Peshawar & other UETs, NUST, CMTL (Wapda), PCSIR, BZU Multan, UET Khuzdar, NED Karachi
5	Sand source	A	Lawrencepur Sand, Chenab/Sakhi sarwar, Hub river, Run Pathani or euqivalent
6	Crush source	A	Margalla, Sargodha, Run Pathani or equivalent
7	Power cable and earthing cable brand	A	Pakistan Cable, FAST cable, New Age, Pioneer

## SNAG LIST

Site Name:

2166

Address:

City Quetta.

Fault			Fault Resolved		
Item	Detail Description	Severity Level (B)	Date	Vendor	Verify CMPak
1.	* Grouting required				✓ 
2.	* Check nuts are loose	(A)			✓ 
3.	* 28 day concrete test report required	(A)			✗ 
4.					
5.	* earthe wire pipe required				✓ 
6.	* also test required				✓ 
7.	* 7 days concrete test report required				✓ 
8.					
9.	* Column resurfacing required				✓ 
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					

Note: Vendor to include all faults identified on equipment - specific tests in the above list.

- Severity Level A faults must be resolved immediately.

5/18/11/P

 Say it all			CMPAK 2016 Solar Project		
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- Severity Level B faults must be resolved within 14 days. (Number should not exceed 20)
- Target Date to clear the snags: \_\_\_\_\_

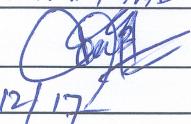
Main Vendor:

Accepted by for (CMPak)

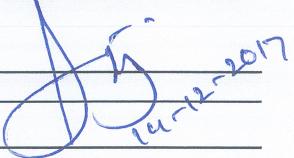
Authorized Person (Manager):

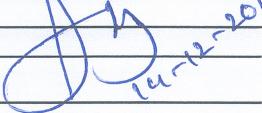
Authorized Person (Regional PM):

Name: MUHAMMAD SHOAIB

Sign: 

Date: 4/12/17

Name: 

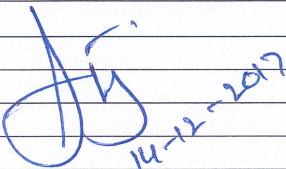
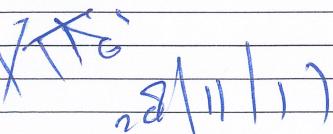
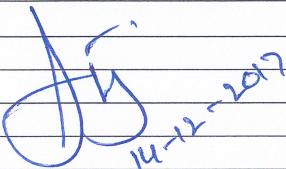
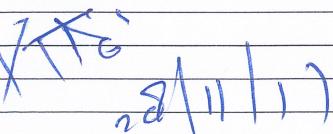
Sign: 

Date: 14-Nov-2017

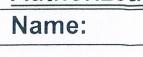
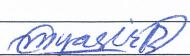
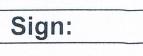
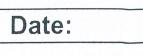
#### PRELIMINARY ACCEPTANCE TEST performed by:

<u>Vendor:</u>	<u>CMPak</u>
<u>Authorized Person:</u>	<u>Authorized Person:</u>
Name: <u>Muhammad Yasir</u>	Name: <u>Ali - Aslam</u>
Sign: 	Sign: 
Date: <u>28/11/2017</u>	Date: <u>28-Nov-17</u>

#### Approved by:

<u>CMPak</u>	
<u>Regional Project Manager- Rollout:</u>	<u>Regional Manager –O&amp;M:</u>
Name: 	Name: 
Sign: 	Sign: 
Date: <u>28/11/2017</u>	Date: <u>28/11/17</u>

#### FINAL ACCEPTANCE TEST performed by:

<u>Vendor:</u>	<u>CMPak</u>
<u>Authorized Person:</u>	<u>Authorized Person:</u>
Name: <u>Muhammad Yasir</u>	Name: 
Sign: 	Sign: 
Date: <u>28/11/2017</u>	Date: 

CMPak

			CMPAK 2016 Solar Project		
Effective	Owner	Replace	Date	Revision	Site ID
					2166

<u>Regional Manager O&amp;M:</u>	<u>RCTO:</u>
Name:	Name:
Sign:	Sign:
Date:	Date:
<u>Approved by:</u>	