ZONG 4G A NEW DREAM			CMPAK 2016 Solar Project		
Effective	Owner	Replace	Date	Revision	Site ID
					2807

Final Acceptance Certificate (FAC)

Project Name			
PAT Date	02/23/2018	**FAT Date**	
Payment Milestone			

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

Signed BOM / BOQ	✓ □Yes	□No	□N/A
Site Acceptance	✓ □Yes	□No	□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.

NC (Project lead):	**NC (Manager):**	**Regional CTO:**
Name:	**Name:**	**Name:**
Sign:	**Sign:**	**Sign:**
Date:	**Date:**	**Date:**

Project Manager (NC HQ)
Name: Younus Ishaq Khan
Sign:
Date:

ZONG 4G A NEW DREAM			CMPAK 2016 Solar Project		
Effective	Owner	Replace	Date	Revision	Site ID
			10-02-2022		2807

Final Acceptance Test

TICK SHEET

Region: S-3

Site ID: 2807

Address: CHAMAN

City: CHAMAN

Site Type:

(Tick appropriate block):

Greenfield ✓	Rooftop

(Tick appropriate block):

New site build	Upgrade	Rebuild	Shared Site	Solar site ✓

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)

Name: Saqib Gul

Sign:_____

Date:10-Feb-2022

Verified by (CMPAK)

Name:_____

Sign:_____

Date:_____

ZONG 4G A NEW DREAM			CMPAK 2016 Solar Project		
Effective	Owner	Replace	Date	Revision	Site ID
			10-02-2022		2807

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:_____**

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:_

Checked by (Nizam Energy)	**Verified by (CMPAK)**
Name: Saqib Gul	**Name:_____**
Sign:_____	**Sign:_____**
Date: 10-Feb-2022	**Date:_____**

ZONG 4G A CHINA MOBILE COMPANY	CMPak Solar Power Project-2016		
Document Type	Project PO #	PAC Signing Date	Site ID
Provisional Acceptance Certificate (PAC)	PPC-069816 PPC-069821		2807

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 2807-Chaman	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 2807** as per above referred contract or purchase order.

Project Manager-(Vendor):	Project Lead-Region (CMPak) :
Name: Muhammad Shoaib	Name:
Sign:	Sign:
Date: 23/06/2018	Date: 25-6-2018

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

ZONG
Say it all

Solar Equipment Tagging Sheet (Nizam Energy)

Site Model				
Site Name	2807			
Alias				
Address	Killi Doalatabad, Bogra Road, Chaman			
City	Chaman			
Region	South			
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**

4G

Document Title	Project PO #	Site ID
Solar Equipment Supply and Services PAT document	PPC-069816 PPC-069821	2807

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: [illegible] anticorrosion coating [illegible] power equipment [illegible] [illegible] Front door [illegible] positions [illegible] modular design [illegible] Protection degree IP55 [illegible] monitoring and control unit) [illegible] SNMP RS232 [illegible] [illegible]	1	Nos	✓
	[illegible] Rectifier/Solar Charge ECO Priority Module	8	Nos	
	[illegible] System Controller	1	Nos	\
	PDU [illegible] unit) incl. circuit breakers (8 [illegible] 63 A) protections	1	Nos	\
Underground Battery Cabinet	Underground battery cabinet with GRP Casing and Geothermal Plates IP55 with fan/filter for ventilation [illegible]	1	Nos	✓
DC power cable [illegible] Red for panel interconnection		120	Meter	✓
DC power cable [illegible] Black for panel interconnection		120	Meter	✓
DC power cable [illegible]		50	Meter	✓
DC power cable [illegible] Power Cabinet		9	Meter	✓
DC power cable [illegible] between battery bank and solar controller		68	Meter	✓
Earthling Cable 70mm [illegible] associated material required to ground the Solar Solution		40	Meter	✓
AC power cable [illegible] for AC connection		10	Meter	✓
Installation material & accessories		1	Lump Sum	✓
Site survey		2	Per site	✓
Engineering design		1	Per site	✓
Transportation of solar system & materials etc to site		1	Per site	✓
Foundation for solar support structure		1	Per site	✓
Foundation for solar [illegible]		1	Per site	✓
Solar panel & support system installation and commissioning		1	Per site	✓
Solar control equipment installation		1	Per site	✓
Solar system commissioning		1	Per site	✓
Battery Bank Installation		1	Per site	✓

10/4/18

10-04-18

23/2/2018

4G		
Document Type	Project PO #	Site ID
Solar Equipment Supply and Services PAT document	PPC-069816 PPC-069821	2807

Supply & Services BOQ

Items	Qty	Unit	CMPak Verified
Extension, patching, commissioning & testing (from NOC) of all the solar alarms	1	Per site	
AC and DC cables laying	1	Per site	
Concrete compressive strength test results	1	Per site	
Steel Test Report	1	Per site	
Backfilling compaction test results	1	Per site	

Checked by (Vendor)	Verified by (CMPAK)
Name: Muhammad Tanveer	Name:
Sign:	Sign:
Date:	Date:
Verified by (CMPAK)	**Verified by (CMPAK)**
Name:	Name:
Sign:	Sign:
Date:	Date:
Verified by (CMPAK)	**Verified by (CMPAK)**
Name:	Name:
Sign:	Sign:
Date:	Date:

	Solar Equipment and Services PAT document
Site ID :	2807
PO Number :	PPC-069816 PPC-069821

Asset Tag Sheet

Asset Tag and Description					
Asset Description	Part No	Serial Number	Model/Make	Asset Code	Remarks
[illegible] power cables between [illegible]		JA-P6-60-265-3BB-565 JA-P6-60-265-3BB-601	JA Solar 265W	CM1468156	
[illegible] and Battery cabinet [illegible]		NE-SBC-02807	NE-SBC Battery Cabinet	CM1468155	
				CM1468154	

Nizam Energy

Muhammad Farooq

CM Pak

CM Pak

Syed Sarmad Ali

23/01/2018

CM Pak

2807
Nizam Solar

13-01-18

10/4/18

10-04-18

23/04/2018

ACCEPTANCE TEST PROCEDURE

TICK SHEET

Region: South 3

Site Name: 2807

Address: Killi Doulatzad.

City: Chaman

Site Type:

(Tick appropriate block):

Greenfield ✓	Rooftop

(Tick appropriate block):

New site build	Upgrade	Rebuild	Shared Site	Solar site ✓
	X	X	X	

☐ **Approved layout & DED attached in the PAT folder**

Checked by (Vendor)

Name: Muhammad Tanveer

Sign:

Date: 23/7/18

Verified by (CMPAK)

Name: Syed Sajjad Ullah

Sign:

Date: 23/07/2018

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	✓	✓

**** 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	✓	✓
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: Muhammad Farees

Sign:

Date: 23/1/18

Verified by (CMPAK)

Name: Syed Sami Ullah

Sign:

Date: 23/01/2018

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	✓	✓

Checked by (Vendor)

Name: M. Shoaib

Sign:

Date: 23/4/18

Verified by (CMPAK)

Name: Syed Sami ullah

Sign:

Date: 23/04/2018

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	✓	✓
	Commercial Power Alarms			✓
	CP failure alarm	A	✓	✓
	Phase miss / Low voltage alarm	B	✓	✓
	Rectifier Alarms			✓
	Rectifier input failure alarm	A	✓	✓
	Rectifier module failure alarm	B	✓	✓
	DC low voltage alarm	A	✓	✓
	Battery Alarms			
	Battery over temperature alarms	A	✓	✓
	Battery cabinet over temperature alarms	A	✓	✓
	Battery cabinet fan failure alarm	A	✓	✓
	DG Alarms			
	DG running alarm	A	✓	✓
	DG failure alarm	A	✓	✓
	Low fuel alarm	B	✓	✓

Checked by (Vendor)

Name: Muhammad Ewaz

Sign:

Date: 23/4/18

Verified by (CMPAK)

Name: Syed Sami ullah

Sign:

Date: 23/04/2018

ON AIR by Solar System CHECK LIST

			CMPAK 2016 Solar Project		
Effective	Owner	Replace	Date	Revision	Site ID
					2807

Tick if correct/ cross if not!
N/A if not applicable.

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: Muhammad Tanveer

Sign:

Date: 23/1/18

Verified by (CMPAK)

Name: Syed Samiullah

Sign:

Date: 23/01/2018

23/01/2018

CMPak Civil Approved Brand List

☐ The contactor 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: 2807

Address:

Item	Fault: Detail Description	Fault: Severity Level (B)	Fault Resolved: Date	Fault Resolved: Vendor	Fault Resolved: Verify CMPak
1.	Backfilling required.				
2.	grouting required.				
3.	Torque tightly checked required.				
4.					
5.	Elec test check required.				
6.	All civil related doc				
7.	required				
8.	28 days test required				
9.	7 days test required				
10.	grouting required after				
11.	backfill.				
12.	jubilee clean required.				
13.	Ha fixed pipe to				
14.	structure.				OK
15.	1 power rectifire module faulty. at site.	✓			OK

Alarm rectification required.

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.**
- **Severity Level B faults must be resolved within 14 days. (Number should not exceed 20)**

Target Date to clear the snags:_____

Main Vendor:

Authorized Person (Manager):

Name: M. Shoaib

Sign: _____

Date: 23/4/18

Accepted by for (CMPak)

Authorized Person (Regional PM):

Name: _____

Sign: _____

Date: _____

PRELIMINARY ACCEPTANCE TEST performed by:

Vendor:	**CMPak**
Authorized Person:	**Authorized Person:**
Name: Muhammad Tanveer	**Name:** Syed Sarmad Ullah
Sign:	**Sign:**
Date:	**Date:** 23/08/2018

Approved by:

CMPak	
Regional Project Manager- Rollout:	**Regional Manager –O&M:**
Name:	**Name:**
Sign:	**Sign:**
Date: 25-6-2018	**Date:** 10/4/18

10-04-18

FINAL ACCEPTANCE TEST performed by:

			CMPAK 2016 Solar Project		
Effective	Owner	Replace	Date	Revision	Site ID
					2807

Approved by:

CMPak	
Regional Manager O&M:	**RCTO:**
Name:	**Name:**
Sign:	**Sign:**
Date:	**Date:**