

Ref: WRTS-II/C&M/Corrigendum-III

Date: 05.12.2025

To,

Prospective Bidders

"Construction of 2 no's 400kV Line Bays (including associated tie bays) at Mandsaur S/s for Interconnection of 3x504MW PSP of Greenko MP01 IREP Pvt. Ltd. through Greenko MP01 - Mandsaur PS 400kV D/c line."

Specification Number : WR2/T/W-AIS/DOM/G01/25/14946
Rfx: 5002004884

Dear Sir,

- 1.0 This has reference to the above tender published on POWERGRID PRANIT Portal.
- 2.0 Queries raised by bidder and clarification is as per Annexure-I:
- 3.0 The bid sale period and Submission period has been Revised as per below:

Sl.no.	Description	Date & time	Revised
1	Bid sale period	02.12.2025/1500	12.12.2025/1500
2	Bid Submission Soft Copy and Hard Copy	02.12.2025/1500	12.12.2025/1500
2	opening date of First Envelope of Bid	02.12.2025/1530	12.12.2025/1530

- 4.0 The price schedule for the subject NIT has been revised and is appended with this amendment to the bidding document. Revised Price Schedule has been attached in the Rfx of subject tender on Pranit portal named as "Price_schedule_V1".
- 5.0 Bidders need to submit their price offer in the revised Price Schedule (excel sheet) named as "Price_schedule_V1" uploaded in RFX Technical Attachment. During bid creation the excel file has to be renamed as "Price_schedule_V1" and uploaded in the e tender portal.
- 6.0 All other terms & conditions shall remain the same.

Yours Sincerely,



(Nitesh Verma)
DGM (C&M)

पश्चिम क्षेत्र पारिषद प्रणाली-II / Western Region Transmission System - II

क्षेत्रीय मुख्यालय : प्लॉट नं. 54, समा-सावली रोड, वडोदरा-390 024. (गुजरात)

Regional Head Quarter : Plot No. 54, Sama Savli Road, Vadodara-390 024. (Gujarat)

केन्द्रीय कार्यालय : 'सौदामिनी' प्लॉट नं. 2, सेक्टर-29, गुरुग्राम-122001, (हरियाणा) दूरभाष : 0124-2571700-719

Corporate Office : "Saudamini", Plot No. 2, Sector-29, Gurugram-122001, (Haryana) Tel. : 0124-2571700-719

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 311

LECTURE 1

MECHANICS

LECTURE 2

LECTURE 3

LECTURE 4

LECTURE 5

LECTURE 6

LECTURE 7

LECTURE 8

LECTURE 9

LECTURE 10

LECTURE 11

LECTURE 12

LECTURE 13

LECTURE 14

Construction of 2 no's 400KV Line Bays (including associated tie bays) at Mandasaur S/S for Interconnection of 3x504MW PSP of Greenko MP01 IREP Pvt. Ltd. through Greenko MP01 – Mandasaur PS 400KV D/c line.

S. No.	Part/ Vol	Clause no.	Clause	Query	Reply
7	Section- Switchgear- CB_Rev11	4.3-(b)	B. All gasketed surfaces shall be smooth, straight and reinforced. If necessary, to minimise distortion and to make a tight seal, the operating rod connecting the operating mechanism to the arc chamber (SF6 media) shall have adequate seals. The SF6 gas leakage should not exceed 0.5% per year and the leakage rate shall be guaranteed during the warranty period. In case the leakage under the specified conditions is found to be greater than 0.5% per year after commissioning of circuit breaker during the warranty period, the manufacturer will have to supply free of cost, the total gas requirement or subsequent ten (10) years, based on actual leakage observed during the warranty period.	For the offered circuit breakers, we guarantee a leakage rate of 0.5% per annum which means no extra gas (other than 20% spare gas which we are supplying) is required for a period of 10 years. In the event of any leakage, same shall be attended to bring down within permissible limit of 0.5% within warranty period of breaker. Hence 10 year leakage guarantee is not required.	Bidder to quote meeting the requirement as per TS.
8	Section- Switchgear- CB_Rev11	4.3-(C)	C. In the interrupter assembly there shall be an absorbing product box to minimise the effect of SF6 decomposition products and moisture. The material used in the construction of the circuit breakers shall be fully compatible with SF6 gas decomposition products.	Absorbing product box is not applicable in our offered design. We provide a molecular sieve to absorb the moisture.	Bidder to quote meeting the requirement as per TS.
9	Section- Switchgear- CB_Rev11	4.3-(g)	G. Sufficient SF6 gas (including that will be required for gas analysis during filling) shall be provided to fill all the circuit breakers being supplied. Spare gas shall be supplied in separate unused cylinders as per requirement specified in BPS.	We would like to inform that we shall supply 20% spare SF6 gas in the same cylinder which will be used to supply SF6 gas for actual requirement	Bidder to quote meeting the requirement as per TS.
10	Section- Switchgear- CB_Rev11	8.3-(f)	The spring charging failure alarm shall be provided with a time delay relay having setting range from 0-1 minute.	Alarm & time delay setting is not available for the offered design, as it may cause malfunction & affect the performance of the CB.	Bidder to quote meeting the requirement as per TS.
11	Section- Switchgear- CB_Rev11	10	The circuit breaker terminal pads shall be made up of high quality electrolytic copper or aluminium and shall be conforming to Australian Standard AS-2935 or equivalent standard for rated current. The terminal pad shall have protective covers which shall be removed before interconnections	The circuit breaker terminal pad shall be Aluminium & as per manufacturer type tested design or as per IN standard. Protective covers are not applicable.	Bidder to quote meeting the requirement as per TS.
12	Section- Switchgear- CB_Rev11	11.5	All inter-pole cabling of Circuit breakers and up to common marshalling box shall be done by plug-in type arrangement. Suitable removable type encasing cover shall be provided in case plug-in type connection arrangement is provided exterior side of LCC/MB. The plug-in type cable termination shall be conforming to IP-67 as per IEC60529. Cable sealing arrangement shall be provided (as per requirement) to avoid entry of moisture etc.	Offered CBs shall be without plug-in connections. Inter-pole cable shall be with stud type or catch-clamp type terminal connections. Relevant Type test reports as per IEC 62271-1 shall be submitted. Following type test are not applicable:- iii) Line charging current switching test - We have performed the cable charging current switching test duties CC1 & CC2, hence line charging is not performed. iv) Test to demonstrate the Power Frequency withstand capability of breaker in open condition at Zero Gauge pressure and at lockout pressure - NA as per IEC 62271-100 v) Seismic withstand for the worst conditions are performed & type test reports of the same shall be offered vi) Low & high temperature test - NA as per IEC vii) Humidity test - NA as per IEC as we are using heater inside the cabinet viii) Static Terminal Load test - We will furnish only calculation at the event of order. ix) Critical Currents test - NA as per IEC x) Shunt Reactor type test reports & Calculations are not applicable and hence not offered xi) CSD tests are not applicable	Please refer clause no. C(11.5. Specific requirement (Rev10)
13	Section- Switchgear- CB_Rev11	15.2	In accordance with the requirements stipulated under Section-GTR, the circuit breaker alongwith its operating mechanism shall conform to the type tests as per IEC: 62271-100. The type test reports as per IEC and the following additional type test reports shall also be submitted for purchaser's employer's review:		Bidder to quote meeting the requirement as per TS.

Pre-bid Queries

Annexure-I		Annexure-I																
Construction of 2 no's 400kV Line Bays (including associated tie bays) at Mandsaur S/s for Interconnection of 3x604MW PSP of Greenko MP01 IREP Pvt. Ltd. through Greenko MP01 - Mandsaur PS 400kV D/c line.																		
S. No.	Part/ Vol	Clause no.	Clause															
14	Section- Switchgear- CB_Rev11	15.3	<p>Routine tests as per IEC:62271-100 shall be performed on all circuit breakers.</p> <p>i) Speed curves for each breaker shall be obtained with the help of a suitable operation analyzer to determine the breaker contact movement during opening, closing, auto reclosing and trip free operation under normal as well as limiting operating control voltage conditions. The tests shall show the speed of contacts directly at various stages of operation, travel of contacts, opening time, closing time, shortest time between separation and meeting of contacts at break make operation etc. This test shall also be performed at site for which the necessary operation analyzer along with necessary transducers, cables, console etc. shall be arranged by the contractor at his own cost.</p> <p>ii) During testing of CB, dynamic contact resistance measurement (DCRM) shall be carried out for close-open (CO) operations with delay of 300ms between close and trip operations. Minimum 100A current shall be injected for DCRM test. Travel characteristics, injected current, trip/close coil current shall also be recorded along with DCRM test.</p> <p>iii) Routine tests on Circuit breakers with Controlled switching device as per IEC/TR 62271-302</p> <p>iv) Tan delta and Capacitance measurement for grading capacitors at rated voltage and also at 10kV (for reference).</p>															
15	Section- Switchgear- CB_Rev11	16- (15)	<table border="1"> <thead> <tr> <th>Tan delta (at)</th> <th>45</th> <th>65</th> <th>65</th> <th>65</th> </tr> </thead> <tbody> <tr> <td>Tan delta (at)</td> <td>45</td> <td>65</td> <td>65</td> <td>65</td> </tr> </tbody> </table>	Tan delta (at)	45	65	65	65	Tan delta (at)	45	65	65	65					
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16	GTR-15	4.6-9- (ii)	<p>SECTION-GENERAL TECHNICAL REQUIREMENTS (GTR)</p> <table border="1"> <thead> <tr> <th>Sr. No</th> <th>Description of parameters</th> <th>765kV System</th> <th>400kV System</th> <th>220kV System</th> </tr> </thead> <tbody> <tr> <td>ii.</td> <td>Phase to earth (for conductors-structure)</td> <td>4900mm</td> <td>3500 mm</td> <td>2100 mm</td> </tr> <tr> <td></td> <td></td> <td colspan="3">(for 6400mm (for rod-structure))</td> </tr> </tbody> </table>	Sr. No	Description of parameters	765kV System	400kV System	220kV System	ii.	Phase to earth (for conductors-structure)	4900mm	3500 mm	2100 mm			(for 6400mm (for rod-structure))		
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17	GTR-15	14.2	<p>The contractor shall supply all special tools and tackles required for Operation and maintenance of the equipment. The special tools and tackles shall only cover items which are specifically required for the equipment offered and are proprietary in nature. The list of special tools and tackles, if any, shall be finalized during detail engineering and the same shall be supplied without any additional cost implication to the Employer.</p>															
18	GTR-15	18-18.3	<p>A canopy and sealing arrangements for operating rods shall be provided in marshalling boxes / Control cabinets to prevent ingress of rain water</p>															
19	GTR-15	18- 18.10	<p>Earthing of the cabinet shall be ensured by providing two separate earthing pads. The earth wire shall be terminated on to the earthing pad and secured by the use of self etching washer. Earthing of hinged door shall be done by using a separate earth wire.</p>															
			<p>The routine tests shall be as per MQP from OEM and applicable tests as per IEC:62271-100.</p> <p>1) DCRM is not a recommended test & the test results is influenced by many variable internal and external parameters during testing and no correct data is possible based on DCRM test results</p> <p>2) CSD is not offered here so not applicable for the offered CB</p> <p>3) Not applicable as grading capacitors is not offered.</p>															
			<p>Rated break time of offered 245 kV CB shall be <60 ms.</p>															
			<p>The phase to earth clearance for 245kV CB the same shall be 1930 mm instead of 2100 mm. We would like to clarify that as per IEC-71-2 clearance may be lower. It has been passed the tests. Offered breaker is impulse tested as per IEC-694, and hence given clearance is not required. Request you to kindly accept.</p>															
			<p>We confirm that no special tools and tackles are required for the offered circuit breakers.</p>															
			<p>The cabinets of offered CBs are successfully IP-55 type tested. Hence, canopy is not required for the offered CBs.</p>															
			<p>As per IS 3043 cl no 22.1.2, two earthing terminals are required where supply voltage is more than 240 V AC. For the offered CB, the maximum supply voltage of auxiliaries in control cabinet is 240VAC. Hence, the offered CB shall be provided with single earthing terminal with each cabinet. Request you to kindly accept.</p>															
			<p>Noted, Bidder to quote meeting the requirement as per TS.</p>															
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Construction of 2 no's 400kV Line Bays (including associated the bays) at Mandasaur SIs for Interconnection of 3x504MW PSP of Greenko MPO1 IREP Pvt. Ltd. through Greenko MPO1 - Mandasaur PS 400kV Dic line.

S. No.	Part/ Vol	Clause no.	Clause	Query	Reply
20	GTR-15	18- 18.13	The enclosures of bay marshalling kiosk, junction box, terminal box and control cabinets shall conform to IP-55 as per IS/IEC60947 including application of 1kV ms for 1 (one) minute after IP-55 test.	The offered CB conforms to IEC-62271-100 and hence, 1 kV for 1 second is required to be applied on auxiliary / control circuit to check the IR of the wires used in control cables.	Bidder to quote meeting the requirement as per TS.
21	GTR-15	23	Motors shall be "Squirrel Cage" three phase induction motors of sufficient size capable of satisfactory operation for the application and duty as required for the driven equipment and shall be subjected to routine tests as per applicable standards. The motors shall be of approved make	Universal type motor is used charging the offered spring-circuit breakers.	Bidder to quote meeting the requirement as per TS.
Electrical					
22	Busbar protection Section - Project	2.2.1.1.b. page 4	Complete Control, Relay and Protection system for bays under present scope as per Section-Control and Relay Panels. Any modification required in the existing protection scheme is also included in the present scope. Protection panels for 400kV Line Bays, Line Current Differential relay at both ends (with back up distance protection feature) as Main-1 and Main-II shall be provided under present scope of work. Differential relays for remote end shall be provided as loose supply under present scope of work. Associated power and control cabling and integration with SAS at remote end shall be done by Remote Bay owner. 400kV Busbar Protection Augmentation: 400kV Buses at Mandasaur Substation are being equipped with Numerical duplicate Distributed Bus Bar Protection scheme under a separate Package. Make and Model of the Bus Bar Protection Relay shall be shared with the successful bidder during detailed Engineering. Augmentation of said existing 400kV Bus bar protection scheme including required Bus bar protection bay modules, trip/auxiliary relays, wirings etc. for present scope 400kV bays are under present scope. Under present scope, necessary modification, wiring/cabling, and integration for completion of 400kV Bus Bar protection for the bays under present scope is envisaged.	Pls confirm the make & model of existing Busbar central unit, to consider compatible bay level peripheral units for the present scope of work. We also presume that the existing Busbar central unit shall accommodate the present scope of bays without any hardware enhancement. However, scheme modification /soft logic if any shall be considered in present scope for extended scope of bays.	Make & model of existing Busbar relay is GE & P741 respectively
23	Busbar protection Section - Project	2.2.1.1.b. page 3			Existing Busbar central unit shall accommodate the present scope of bays, however supply of bay peripheral units, trip/auxiliary relays, wirings etc. for present scope 400kV bays including necessary modification, wiring/cabling, and integration for completion of 400kV Bus Bar protection
24	Scope of work VMS Section - Project	2.2.1.1.a. page 6	AUGMENTATION OF VISUAL MONITORING SYSTEM: Augmentation of Visual monitoring system (VMS) for area under present scope, and their integration with existing Substation VMS system. The existing VMS drawing shall be provided to the contractor during detailed engineering. The bidder shall provide 4(Four) Numbers of color IP camera, with PAN, TILT and ZOOM facilities, suitably located in the switchyard for monitoring of bays and equipments under present scope. The scope of bidder shall include providing all items, Accessories, Line Interface units, Fiber patch cords, Power supply units, Junction Boxes, Cables, Fiber Optic Cables, Hardware and Software, etc., as are applicable to the product design, to meet functional requirements. Compatibility enhancement of existing VMS system, as needed, shall be done to integrate visual monitoring for bays under present scope with existing Visual monitoring system of the station. The cameras to be supplied under present scope are also to be integrated with NVR or N/AW/C system at site. All SDK (Software development kit) /APIs (Application programming interface) are in the scope of the bidder. Additional Camera licenses in NVR shall be provided by Contractor for present scope of work. A copy of specification for Visual Monitoring system is enclosed at Specific Requirement Rev. 09, which shall, be read for the Augmentation scope of existing VMS system	As per the said clause, bidder to provide 4 nos of cameras and to integrate with the existing VMS system. In this regard we understood that the existing main system has sufficient capacity to integrate the new 4 nos cameras including the storage & central UPS back up requirements.	Bidder scope is amply clear. Bidder to quote accordingly
25	BPS - CB with PIR	BPS-Item no. 6	420kV, 3150A, 63KA Circuit Breaker (3-Phase) with closing resistor with support structure	As per the present practice 400kV CB shall be accepted with CSD in place of CB with closing resistor. Hence we will propose 400kV CB with CSD against the BPS item no. 6. Please confirm.	Bidder scope is amply clear. Bidder to quote accordingly

Pre-bid Queries			Annexure-I
Construction of 2 no's 400kV Line Bays (including associated tie bays) at Mandsaur S/s for Interconnection of 3x504MW PSP of Greenko MP01 IREP Pvt. Ltd. through Greenko MP01 – Mandsaur PS 400kV D/c line.			
S. No.	Part/ Vol	Clause no.	Clause
26	BPS - CB relay panels - 2 nos	BPS- item no. 12	400KV Circuit Breaker Relay Panel (With Automation) - 2 nos
27	SLD & GA	Jack bus for future line bays 403 & 406 and 407 & 409	The number of 400KV CBs are 4 nos in total, however the number of CB relay panels mentioned are only 2 nos. Please confirm. As per the NOTES from SLD & GA, it is indicated to consider the Jack bus for the said future line bays. In this regard we understood that only Jack bus with tension hardware with in the bay is required to consider. However, Transmission Line side Tension insulators for the future line bays are not required to consider. Please confirm.
28	SLD & GA	Tower with Double tier arrangement	As per the NOTES from SLD & GA, it is indicated that, "Towers in present scope diameters are double tier arrangement." Please confirm whether future diameter 407-408-409 is also with Double tier arrangement ? Future diameter 407-408-409 is not with Double tier arrangement
CIVIL			
29	15_0 Civil Works Rev 12	2.1	preparation of detailed Geo-technical report including specific recommendations for the type of foundations and the allowable safe bearing capacity for different sizes of foundations at different founding strata starting from 0.5M from existing ground level for the various structures of the substation.
30	BPS Sch 3	57	It is requested to provide the preliminary soil investigation report to access the foundation type required at site for different structures & Request to provide the contour survey drawing to access the topographical nature of plot and filling required to achieve the FGL. No lead mentioned for disposal of hard rock related soil, where as all other BOQ's call for 2 kM lead for disposal, please confirm
31			Disposal of excavated materials for leads up to 2Km under this item Refer TS / SFQP documents attached with tender documents
Others			
1	Section-III BDS_SS and ITB 20.1	ITB 16.2(a), ITB 16.2(b), ITB 17.1 and ITB 20.1	The deadline for submission of Hard copy part of the bid is as under: Date : 24.11.2025 Time: 1500 hours (Indian Standard Time) Address for submission of Hard copy of Documents; "As per BDS (ITB 16.2(a)) hard-copy submission of bid documents is stipulated; however, in recent PGCIL WR-I/INR projects this requirement has been removed and bids are accepted only through the e-procurement portal. Kindly confirm that physical hard-copy submission may be waived and only online submission will be required."
2	Appendix 1	Terms of payment	"As per SCC, the Advance Payment has been specified as interest-bearing; however, in recent PGCIL SSTL packages the Advance Payment is released interest-free. Kindly clarify whether the Advance Payment for this tender shall also be interest-free, in line with current PGCIL practice." No Change

Pre-bid Queries

Annexure-1

Construction of 2 no's 400KV Line Bays (including associated tie bays) at Mandasaur S/S for Interconnection of 3x504MW PSP of Greenko MPO1 IREP Pvt. Ltd. through Greenko MPO1 – Mandasaur PS 400KV D/c line.

S. No.	Part/ Vol	Clause no.	Clause	Query	Reply
3	Appendix – 2	PRICE ADJUSTMENT	Price of all items shall remain firm during the entire currency of the contract. No Price Adjustment shall be applicable in any of the items of BOQ.	the contract is specified on a Firm Price basis, however, recent PGCL SS/TL packages have allowed Price Variation (PVC) considering current market volatility. Kindly confirm whether PVC can be made applicable for this package as well	No Change
4	Section-III BDS_SS	ITB 24.1 (c)	Duration in Months from the date of Notification of Award - 8 Months	The period of completion is specified as 8 months, whereas major equipment such as 400 KV circuit breakers have a delivery period of 12-14 months and other primary items exceed 9 months. In view of realistic manufacturing cycles, kindly consider revising the completion period to 18 months.	No Change
5	BPS	Sch 3	Civil working Quantities	Quantities mentioned for Civil BOQ are on higher side w.r.t. scope of work, please clarify on any additional scope is envisaged	Bidder to quote as per BPS and TS