

## पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड

(भारत सरकार का उद्यम)

#### **POWER GRID CORPORATION OF INDIA LIMITED**

(A Government of India Enterprise)

Ref. No.: CC-CS/TWT/Amend–13 Date: 29.09.2022

#### << TO ALL THE BIDDERS THROUGH PORTAL>>

Sub: Package for procurement of Smart Meters including associated Communication Infrastructure, Head End System (HES), Meter Data Management system (MDM) for implementation of Advanced Metering Infrastructure Project(s) in Central & Western India; Specification No.: RTN1001566/OTHERS/DOM/A02; GeM Bid Number: GEM/2022/B/2006757 dated 08.03.2022

...Reg. Amendment No. 13 to the Bidding Documents

Dear Sir(s),

- 1.0 This has reference to the bidding documents for the subject package uploaded on Government e-Marketplace (GeM) Portal [GeM Bid No. GEM/2022/B/2006757 dated 08.03.2022] and subsequently issued Corrigendum/Amendments/Clarifications.
- 2.0 **Amendment No. 13** to the bidding documents enclosed herewith are uploaded on the GeM Portal.
- 3.0 Save and Except for the changes brought-out in the above-mentioned amendments, all other terms and conditions of the original bidding documents shall remain unaltered.

Thanking you,

For and On behalf of Power Grid Corporation of India Limited

Recoverable Signature

X Aakash Khandelwal

Aakash Khandelwal Manager (CS) Signed by: AAKASH KHANDELWAL

**Encl: As above** 

Website: www.powergridindia.com

Clause No.	Existing Clause in the Bidding Documents	Amended as
IFB Clause	Under the Integrity Pact Program (IPP), a panel of	Under the Integrity Pact Program (IPP), a panel of
12.0, Section-I,	Independent External Monitors (IEMs) comprising <b>Sh. Raj</b>	Independent External Monitors (IEMs) comprising <b>Sh. Nand</b>
VolI of the	kumar Singh, Sh. Anil Kumar and Sh. Shekhar Prasad	Lal Singh, Sh. Anil Kumar and Sh. Shekhar Prasad Singh
Bidding Documents	Singh has been appointed by CVC. Correspondence, if any, to the panel of IEMs be addressed to the following:	has been appointed by CVC. Correspondence, if any, to the panel of IEMs be addressed to the following:
	Independent External Monitor	Independent External Monitor C/o CGM (CS-P&S), Contract Services department
		Power Grid Corporation of India Limited,
	'Saudamini', 3rd Floor,	'Saudamini', 3rd Floor,
		Plot No. – 2, Sector – 29,
	Gurgaon – 122001, Haryana	Gurgaon – 122001, Haryana
	E-mail IDs of IEMs:	E-mail IDs of IEMs:
	mrrajksingh@gmail.com	nlsingh3@gmail.com
		anilsec1953@gmail.com spsinghias1983@gmail.com
	<u> эрэнідніаз гэоэ(ёдтіан.соні</u>	<u>spsiligilias 1903(@gmail.com</u>
ITB/BDS	Supplementing ITB clause 9.3(o) with the following:	Supplementing ITB clause 9.3(o) with the following:
Clause 9.3(o), Section-III,		
VolI of the	Under the Integrity Pact Program (IPP), a panel of	
0		Independent External Monitors (IEMs) comprising Sh. Nand
Documents		<b>Lal Singh</b> , Sh. Anil Kumar and Sh. Shekhar Prasad Singh has been appointed by CVC. Correspondence, if any, to the
	any, to the panel of IEMs be addressed to the following:	panel of IEMs be addressed to the following:
	Independent External Monitor	Independent External Monitor
		C/o CGM (CS-P&S), Contract Services department
		Power Grid Corporation of India Limited, 'Saudamini', 8th Floor,
	IFB Clause 12.0, Section-I, VolI of the Bidding Documents  ITB/BDS Clause 9.3(o), Section-III,	IFB Clause 12.0, Section-I, VolI of the Bidding Documents  Under the Integrity Pact Program (IPP), a panel of Independent External Monitors (IEMs) comprising Sh. Raj kumar Singh, Sh. Anil Kumar and Sh. Shekhar Prasad Singh has been appointed by CVC. Correspondence, if any, to the panel of IEMs be addressed to the following:  Independent External Monitor C/o CGM (CS-P&S), Contract Services department Power Grid Corporation of India Limited, 'Saudamini', 3rd Floor, Plot No. – 2, Sector – 29, Gurgaon – 122001, Haryana  E-mail IDs of IEMs: mrrajksingh@gmail.com aniisec1953@gmail.com spsinghias1983@gmail.com  Supplementing ITB clause 9.3(o) with the following:  Under the Integrity Pact Program (IPP), a panel of Independent External Monitors (IEMs) comprising Sh. Raj kumar Singh, Sh. Anil Kumar and Sh. Shekhar Prasad Singh has been appointed by CVC. Correspondence, if any, to the panel of IEMs be addressed to the following:

SI. No.	Clause No.	Existing Clause in the Bidding Documents	Amended as
		Plot No. – 2, Sector – 29, Gurgaon – 122001, Haryana]	Plot No. – 2, Sector – 29, Gurgaon – 122001, Haryana]
		E-mail IDs of IEMs: mrrajksingh@gmail.com anilsec1953@gmail.com spsinghias1983@gmail.com	E-mail IDs of IEMs: nlsingh3@gmail.com anilsec1953@gmail.com spsinghias1983@gmail.com
3.	ITB/BDS Clause 13.2, Section-III, VolI of the Bidding Documents	Supplementing ITB clause 13.2 with the following:  Bid Security shall be valid upto 02/05/2023, or any other date as subsequently requested under ITB Sub-Clause 14.2.	Supplementing ITB clause 13.2 with the following:  Bid Security shall be valid upto 19/06/2023, or any other date as subsequently requested under ITB Sub-Clause 14.2.
4.	ITB/BDS Clause 24.1(i), Section-III, VolI of the Bidding Documents	Add a new Sub Clause ITB 24.1(i) as under:  In addition to the above, the bidder shall also be assessed as under:  M/s. REC Limited (the Nodal Agency) has invited applications for "Empanelment of Firms for participation in RDSS AMISP tenders for providing Advance Metering Infrastructure (AMI) prepaid Solution after successful demonstration" vide Request for Empanelment (RFE) Documents issued on 11/03/2022 including subsequent Amendments/Clarifications/Corrigendum.	i. M/s. REC Limited (the Nodal Agency) has invited applications for "Empanelment of Firms for participation in RDSS AMISP tenders for providing Advance Metering Infrastructure (AMI) prepaid Solution after successful demonstration" vide
		After successful Empanelment in the above RFE, the	After successful Empanelment in the above RFE, the

SI. No.	Clause No.	Existing Clause in the Bidding Documents	Amended as
140.		applicant shall be issued a 'Certificate(s) for Empanelment - For successfully demonstrating an end-to-end AMI prepaid solution' for both (i) RF and (ii) Cellular Communication Technology (hereinafter referred to as 'Certificate(s) of Empanelment').	applicant shall be issued a 'Certificate(s) for Empanelment - For successfully demonstrating an end–to–end AMI prepaid solution' for both (i) RF and (ii) Cellular Communication Technology (hereinafter referred to as 'Certificate(s) of Empanelment').
submit 'Certificate(s) for Empanelment' issued on them against the above RFE issued by M/s. REC Limited for both (i) RF and (ii) Cellular Communication Technology. In case bidder has not already been issued the said Certificate(s) for Empanelment, then bidder is required to submit undertaking in first envelope of their bid declaring that they have submitted their application for Empanelment in the above RFE issued by M/s. REC Limited for both (i) RF and (ii) Cellular Communication Technology and that their Empanelment is under process.  submit 'Certificate(s) for Empanelment' them against the above RFE issued by Limited for both (i) RF and (ii) Communication Technology. In case bidded already been issued the said Certificate(s) for Empanelment' them against the above RFE issued by Limited for both (i) RF and (ii) Cellular Communication Technology and that their Empanelment' is submit 'Certificate(s) for Empanelment' them against the above RFE issued by Limited for both (i) RF and (ii) Cellular Communication Technology and that they have submitted their application Technology. In case bidd already been issued the said Communication Technology. In case bidd already been issued the said Communication Technology and the said Communication Technology. In case bidd already been issued the said Communication Technology and the said Communi		Communication Technology. In case bidder has not already been issued the said Certificate(s) for Empanelment, then bidder is required to submit undertaking in first envelope of their bid declaring that they have submitted their application for Empanelment in the above RFE issued by M/s. REC Limited for both (i) RF and (ii) Cellular Communication Technology and that their	
		Preliminary responsive bidders who have not already submitted 'Certificate(s) for Empanelment' shall be asked to submit the said 'Certificate(s) for Empanelment' for both (i) RF and (ii) Cellular Communication Technology issued in their name within stipulated period, before opening of Second Envelope Bids i.e. Price Bids for the subject package.	Preliminary responsive bidders who have not already submitted 'Certificate(s) for Empanelment' shall be asked to submit the said 'Certificate(s) for Empanelment' for both (i) RF and (ii) Cellular Communication Technology issued in their name within stipulated period, before opening of Second Envelope Bids i.e. Price Bids for the subject package.
		In case Bidder is not able to submit the above said 'Certificate(s) for Empanelment' for both (i) RF and (ii) Cellular Communication Technology within the specified	In case Bidder is not able to submit the above said 'Certificate(s) for Empanelment' for both (i) RF and (ii) Cellular Communication Technology within the

SI.	Clause No.	Existing Clause in the Bidding Documents	Amended as
SI. No.	Clause No.	period, the bid from such bidder shall be summarily rejected and their price bid shall not be opened. The Employer shall be the sole judge in this regard and the Employer's decision shall be final and binding.  In case Bidder is an Individual Firm the said 'Certificate(s) for Empanelment' is required to be issued in the name of Bidder itself. In case Bidder is a Joint Venture (JV) of two or three firms, the said 'Certificate(s) for Empanelment' is required to be issued in the name of Lead Partner of the JV.	
			Evaluation Testing within 2 months from the date of First Envelope Bid Opening, the bid from such

SI. No.	Clause No.	Existing Clause in the Bidding Documents	Amended as
			a bidder shall be summarily rejected and their price bid shall not be opened. The Employer shall be the sole judge in this regard and the Employer's decision shall be final and binding.  Note: Bidders may please note that successful demonstration of 'Performance Evaluation Testing' by the Bidder should not be construed to mean that the bid submitted by the bidder is considered techno-commercially responsive and/or meeting the Qualifying Requirements (QR). The responsiveness of a bid shall be ascertained in line with the provisions of the Bidding Documents.
5.	GCC / SCC Clause 21.2, Section-V (SCC), VolI of the Bidding Documents	Replace the GCC Clause 21.2 with the following:  Except in case of Force Majeure or where the delay in delivery of the Solution is caused due to any delay or default of Utility/Employer if the Installation Milestone is delayed by more than 27 (twenty-seven) months from the effective date of the Contract the Contractor shall be liable to pay liquidated damages as per the rates specified in this clause.  Employer shall without prejudice to all its other remedies under the Contract, deduct from the amount due to be paid, as liquidated damages, 50% of the Notional Monthly Service charge per meter for contractor plus GST payable	Replace the GCC Clause 21.2 with the following:  Except in case of Force Majeure or where the delay in delivery of the Solution is caused due to any delay or default of Utility/Employer if the Installation Milestone is delayed by more than 27 (twenty-seven) months from the effective date of the Contract the Contractor shall be liable to pay liquidated damages as per the rates specified in this clause.  Employer shall without prejudice to all its other remedies under the Contract, deduct from the amount due to be paid, as liquidated damages, 50% of the Notional Monthly Service charge per meter for contractor for each delayed meter for each completed month of delay for a maximum period of 12

SI. No.	Clause No.	Existing Clause in the Bidding Documents	Amended as
		<b>thereon</b> for each delayed meter for each completed month of delay for a maximum period of 12 (twelve) months.	(twelve) months.
		The Employer may, without prejudice to any other method of recovery, deduct the amount of such damages from any monies due or to become due to the Contractor. The payment or deduction of such damages shall not relieve the Contractor from his obligation to complete the Works, or from any other of his obligations and liabilities under the	The Employer may, without prejudice to any other method of recovery, deduct the amount of such damages from any monies due or to become due to the Contractor. The payment or deduction of such damages shall not relieve the Contractor from his obligation to complete the Works, or from any other of his obligations and liabilities under the Contract.
6.	Article 6	Contract.  Article 6. Integrity Pact	Article 6. Integrity Pact
	(Integrity Pact), Form No. 5 (FORM OF CONTRACT AGREEMENT) , Section-VI	Under the Integrity Pact Program (IPP), a panel of Independent External Monitors (IEMs) comprising <b>Sh. Raj kumar Singh</b> , Sh. Anil Kumar and Sh. Shekhar Prasad Singh has been appointed by CVC. Correspondence, if any, to the panel of IEMs be addressed to the following:	Under the Integrity Pact Program (IPP), a panel of Independent External Monitors (IEMs) comprising <b>Sh. Nand Lal Singh</b> , Sh. Anil Kumar and Sh. Shekhar Prasad Singh has been appointed by CVC. Correspondence, if any, to the panel of IEMs be addressed to the following:
	(Sample Forms and Procedures), VolI of the Bidding Documents	Independent External Monitor C/o CGM (CS-P&S), Contract Services department Power Grid Corporation of India Limited, 'Saudamini', 8th Floor, Plot No. – 2, Sector – 29, Gurgaon – 122001, Haryana]	Independent External Monitor C/o CGM (CS-P&S), Contract Services department Power Grid Corporation of India Limited, 'Saudamini', 8th Floor, Plot No. – 2, Sector – 29, Gurgaon – 122001, Haryana]
			E-mail IDs of IEMs:  nlsingh3@gmail.com anilsec1953@gmail.com spsinghias1983@gmail.com

S. No.	Clause Ref.	Existing Provision	Amended Provision
1.	Volume II, Technical Specifications, Section 3, Clause 1. General Requirement (Amendment no. 12 dtd. 18.08.2022)	1. General Requirement Communication infrastructure solutions shall be based on following communication technologies:  1. RF (License free frequency band)  2. Cellular (4G) The contractor shall have to meet the data availability criteria as mentioned in other part of technical specification. The communication module to be provided by contractor shall be of plug & play type.	1. General Requirement Communication infrastructure solutions shall be based on following communication technologies:  1. RF (License free frequency band) 2. Cellular (5G/4G/NB-IoT) The contractor shall have to meet the data availability criteria as mentioned in other part of technical specification. The communication module to be provided by contractor shall be of plug & play type.  Before large scale deployment, Contractor has to demonstrate "Communication Performance Evaluation" as per Annexure-I for all proposed communication technologies (i.e RF/5G/4G/NB-Iot). The sample size for Communication Performance Testing of meters for each proposed Communication Technology shall not be less than 1000 nos.
2.	Volume II, Technical Specifications, Section 3, Clause 1. General Requirement (Amendment no. 12 dtd. 18.08.2022)	1.4 Communication Module  The smart meters shall have plug and play type communication module for two-way communication for any given communication technology with HES/Access Points/DCU.  In case of GPRS meters communication shall happen primarily on 4G; In case of contingency communication module/SIM card shall be able to communicate over any other frequency band or any other Technology.	1.4 Communication Module The smart meters shall have plug and play type

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S. No.	Clause Ref.	Existing Provision	Amended Provision
3.	Volume II, Technical	1.7 Communication module	1.7 Communication module
	Specifications,	The contractor can also provide communication module	The contractor can also provide communication module
	Section 3,	based on <b>4G</b> communication technologies and shall	based on <b>5G/4G/NB-IOT</b> communication technologies
	Clause 1. General	have capability to fall back on any other frequency	and shall have capability to fall back on any other
	Requirement	band or any other Technology in case of contingency.	
	(Amendment no. 12	However, the communication module shall be designed	the communication module shall be designed in such
	dtd. 18.08.2022)	in such way that SIM card from any service provider in	way that SIM card from any service provider in India can
		India can be used for data communications to HES	be used for data communications to HES without any
		without any change in hardware/software of	change in hardware/software of communication module.
		communication module. Contractor shall provide one	Contractor shall provide one SIM Card for each Cellular
		SIM Card for each GPRS based Smart meter and Two	Smart meter and Two SIM Cards for each DCU. For
		SIM Cards for each DCU. For purpose of recurring	purpose of recurring charges Contractor shall quote a
		charges Contractor shall quote a levelized Rate for per	levelized Rate for per month charges of SIM Cards,
		month charges of SIM Cards, which shall be applicable	which shall be applicable for all SIM cards in the system.
		for all SIM cards in the system.	

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**ANNEXURE-I** 

## <u>Performance Evaluation Testing for Communication Infrastructure</u>

#### SECTION 3 (COMMUNICATION INFRASTRUCTURE) TECHNICAL SPECIFICATIONS VOL. II

Bidder's proposed communication solution i.e. RF & Cellular(5G/4G/NB-IOT) shall be evaluated as per following.

1. As a part of first envelope bid evaluation for the subject package, a bidder shall be required to successfully demonstrate the performance of each of the proposed communication technology(ies) i.e. RF & Cellular (5G/4G/NB-IOT) (hereinafter referred to as 'Performance Evaluation Testing'), within the 2 months from the date of First Envelope Bid Opening.

The minimum Performance Requirement which is required to be demonstrated during **Performance Evaluation Testing** is brought-out at sl no 5 below.

For demonstrating the performance of different communication technology(ies) during **Performance Evaluation Testing**, the bidder is required to mandatorily deploy smart meters manufactured by all the Smart Meter Manufacturer(s) proposed in the bid for the subject package.

In case Bidder is not able to successfully demonstrate the stipulated Performance Requirement criteria during Performance Evaluation Testing, the bid from such a bidder shall be summarily rejected and their price bid shall not be opened. The Employer shall be the sole judge in this regard and the Employer's decision shall be final and binding.

- 2. The Performance Evaluation Testing shall be demonstrated by Sole Bidder / duly authorized Partner of a Joint Venture (*in case bid is submitted by a Joint Venture*)
- 3. The Bidder shall demonstrate the Performance Evaluation Testing in **Laboratory Environment** i.e. Demonstrate the functionalities in test lab through suitable set up with required number of smart meters, in the presence of Employer's designated representative.
- 4. The Bidder is required to demonstrate **Performance Evaluation Testing** in the following manner

- (i) Performance Evaluation Testing of RF Communication Technology on 1000 nos. of RF based Smart Meters
- (ii) Performance Evaluation Testing of Cellular Technology (5G/4G/NBIOT) on 1000 nos. of Cellular based Smart Meters.

If Bidder proposes more than one cellular technology solution, then Performance Evaluation Testing shall be carried out on each of the proposed cellular technology solution deploying 1000 nos. of smart meters

For the purpose of (i) and (ii) above, in case bidder has proposed to source Smart Meters from more than one Smart Meter Manufacturer(s), then during Performance Evaluation Testing, Meters manufactured by each of the proposed Smart Meter Manufacturer(s) shall be deployed. However, total number of Smart Meters for the purpose of Performance Evaluation Testing shall be as per sl no (i) and (ii) above.

5. Following parameters shall be tested during the performance evaluation testing of communication infrastructure. These parameters shall be complied daily for one week (7 days) to assess capability of Communication Infrastructure.

Data Type	Performance Requirement	
1. Load Profile Data Read		
Periodic collection of the interval load profile	95% of meters within 8 hours	
data for the day <sup>1</sup>	98% of meters within 12 hours	
Previous days interval energy and total	99.5% of meters within 24 hours	
accumulated energy	after midnight	
On Demand collection of 7 days interval		
energy data and the current total accumulated	100% complete within 4 hours	
energy from a group of 10% of installed base of		
meters (configurable)		
2. Billing Profile Data Read		
Collection of billing data	More than 99.5% of meters within 72	
	hours of the scheduled periodic	
	collection.	
3. On-Demand Remote reads of meters		
Collection of 7 days of interval energy data and	within 2 minutes	
the current total accumulated energy from a		
selected individual meter		

Data Type	Performance Requirement		
4. Remote connect / disconnect			
Remote connect / disconnect of the Smart	Action performed 99.5% of meters		
Meters	within 6 hours		
Action to response for individual meter	within 3 mins		
5. Ping Response with acknowledgement/response	e for selected meters		
For meters under testing	More than 98% of meters within 5		
	Minute		
For an individual meter	within 3 seconds		
6. Meter loss and restoration of supply			
Receiving of alert for all affected Smart meters	within 3 minutes for more than 60%		
	of meters		
7. Events / Alerts			
Receiving of alert for an individual meter	within 3 minutes		
For All the Smart Meters under test	100% of meters within 24 hours		
For reading the full event log remotely for	100% of meters within 6 hours		
installed AMI meter			
9. Firmware upgrade with acknowledgement/ response	onse for selected meters		
For All the Smart Meters under test	100% of meters within 24 hours		
10. Remotely altering settings in meter			
For installed Smart meters (for a batch of at	100% of meters within 24 hours		
least 20% of installed base)			

N.B: Bidder may demonstrate the above parameters either on HES/MDM.

- 6. The communication infrastructure shall also be tested to assess the fallback capabilities of Cellular Technology. In case of failure of primary network, the communication primary network shall automatically switch to fallback technology (for Cellular Meters). In case of RF network, the communication infrastructure shall have to demonstrate self-healing capabilities on failure of any node.
- 7. After opening of First Envelope bids for the subject package, the bidder shall be required to give an advance notice to the Employer atleast one week prior to the proposed Performance Evaluation Testing schedule, thereby intimating necessary details such as schedule of Performance Evaluation Testing, location of test lab, no. of meters sourced from each Meter Manufacturer(s), Communication Technology(ies), details of HES/MDM etc., for approval of the Employer.

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# पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड





### **POWER GRID CORPORATION OF INDIA LIMITED**

(A Government of India Enterprise)

Ref. No.: CC-CS/G3/OBD EX-13 Date: 26.09.2022

#### << TO ALL THE BIDDERS THROUGH PORTAL>>

Sub: Package for procurement of Smart Meters including associated Communication Infrastructure, Head End System (HES), Meter Data Management system (MDM) for implementation of Advanced Metering Infrastructure Project(s) in Central & Western India; Specification No.: RTN1001566/OTHERS/DOM/A02

.. Reg. Extension of date of downloading of Bidding Documents, Bid Submission & Bid Opening Date.

Dear Sir(s),

- 1.0 This has reference to the bidding documents for the subject package uploaded on Government e-Marketplace (GeM) Portal [GeM Bid No. GEM/2022/B/2006757 dated 08.03.2022] alongwith subsequently issued Corrigendum(s), Amendments and Clarifications.
- 1.1 The date of downloading of Bidding Documents and deadline for submission of Bids & the **date for Bid**Opening are hereby extended and rescheduled as per the following program:

Existing Schedule	Revised Schedule
Downloading of Bidding Documents:	Downloading of Bidding Documents:
upto 30/09/2022, Time: upto 11:00_hrs.	Extended till 10/10/2022, Time: upto 11:00 hrs.
Bid Submission: (a) For soft copy part of bids: Date: 30/09/2022, Time: upto 1100 Hrs	Bid Submission: (a) For soft copy part of bids: Date: 10/10/2022, Time: upto 1100 Hrs
(b) For Hard copy part of bids: Date: 04/10/2022, Time: upto 1100 Hrs	(b) For Hard copy part of bids: Date: 12/10/2022, Time: upto 1100 Hrs
Bid Opening (1st Envelope): Date: 04/10/2022, Time: upto 11:30 Hrs	Bid Opening (1st Envelope): Date: : 12/10/2022, Time: upto 11:30 Hrs

- 1.2 You are requested to ensure validity of Bid, to be submitted by you, based on the above revised dates.
- 2.0 Except for the above, all other terms and conditions of the Bidding Documents thereof remain unchanged.

Thanking you,

For and On behalf of Power Grid Corporation of India Limited

9/26/2022



Encl: As above