GUJARAT INDUSTRIES POWER COMPANY LIMITED
PRE BID MEETING DATED 18.12.18

DATE OF ISSUE : 06/12/2018

TENDER NO.   : GIPCL/CENTRALIZED MONITORING SYSTEM-DATA INTEGRATION/2018

TENDER FOR   : IMPLEMENTATION OF CENTRALIZED MONITORING SYSTEM BY INTEGRATION OF DATA OF GIPCL CONVENTIONAL AND RENEWABLE ENERGY SOURCES & SUPPLY OF REQUIRED SOFTWARE AND HARDWARE

BID DUE DATE   : 04/01/2019 up to 14:00 Hrs (IST)

DATE OF AMENDMENT ISSUE: 26/12/2018

Amendment/Addendum/clarification-1

Sr. No.	Page No.	Clause No/Point No.	Title	DESCRIPTION OF CLAUSE/ ITEM AS PER GIPCL RFP DOCUMENT	Bidder's Query/suggetions	GIPCL Reply / Clarification/Amendment/Addendum
1	5	3	Bid Information Sheet	Last Date for physical & online submission of Bids ▢ Last Date : 04/01/2019 Up to 14:00 hrs (IST) for Online submission on n-procure ▢ Last Date: 05/01/2019 Up to 14:00 hrs (IST) for Physical submission at GIPCL office	We request to extend the online and physical submission of bids by 2-3 weeks from the date of the issuance of corrigendum /reply to the our queries to give us the requite time for preparation of our detailed proposal and getting requisite approval from our management	No change in RFP.
2	10	5	Definition	Tenderer/Bidder shall mean the Bidding Entity or the Bidding Consortium which has submitted a proposal, in response to this RFP to Owner	We understand that as per this definition, Consortium of bidders will be allowed to participate in the bid. Since this is a combined bid for both hardware and software components and since it will be difficult for one agency to manage the same, we request to allow for consortium of bidders	Consortium is not allowed.Definition to be read as **"Tenderer/Bidder shall mean the Bidding Entity which has submitted a proposal, in response to this RFP to Owner."**.
3	21	7.1	Bidder's Eligibility Criteria	The Bidder should have past experience of Design, Engineering and successfully implementation of Control, Monitoring & Reporting system i.e. ((SCADA /Data Acquisition system) with Energy Management solutions)) on turnkey basis for at least cumulatively 250 MW capacity in Energy/power sector /power plant/Process plants/captive power plant as on date of bid submission.	Kindly allow consortium for this criteria so that maximum bidder can be participated otherwise requesting you to relax the criteria as mentioned below,The Bidder should have past experience of Design, Engineering and successfully implementation of Control, Monitoring & Reporting system i.e. Integration of 3rd party and existing system on turnkey basis in any sector because this RFP is based on software development and integration methodology.	Please Refer GIPCL reply agaianst point 2.

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4	21	7.0 Point A	Bidder's Eligibility Criteria	Technical Eligibility 7.1 The Bidder should have past experience of Design, Engineering and successfully implementation of Control, Monitoring & Reporting system i.e. ((SCADA /Data Acquisition system) with Energy Management solutions)) on turnkey asis for at least cumulatively 250 MW capacity in Energy/power sector /power plant/Process plants/captive power plant as on date of bid submission. 7.2 Bidder should have experience in Renewable sector for successfully implementation of Control, Monitoring & Reporting system i.e. ((SCADA /Data Acquisition system) with Energy Management solutions)) for At least one single project of minimum 10 MW capacity in each wind and solar with cumulative capacity of both solar and wind project of minimum 75 MW during last 5 years as on date of bid submission.	We understand that the credentials of the consortium members will be considered for meeting the technical eligibility requirements. Please confirm.	Please Refer GIPCL reply agaianst point 2.
5	21	7.2	Bidder's Eligibility Criteria	Bidder should have experience in Renewable sector for successfully implementation of Control, Monitoring & Reporting system i.e. ((SCADA /Data Acquisition system) with Energy Management solutions)) for At least one single project of minimum 10 MW capacity in each wind and solar with cumulative capacity of both solar and wind project of minimum 75 MW during last 5 years as on date of bid submission.	Kindly allow consortium for this criteria so that maximum bidder can be participated.	Please Refer GIPCL reply agaianst point 2.
6	22	7.0 Point B Financial Eligibility	Bidder's Eligibility Criteria	Bidder shall have had Annual Average Turnover of Rs.1 Crores in last three Financial Years.	Considering the importance of the project, we feel that the Annual Average Turnover requirements of Rs. 1 crores is too low. We understand that GIPCL is looking for firms having good amount of technical & IT experience in the required work in the power sector and should therefore increase the turnover requirements.It can be increased to minimum of Rs. 25 crores	No change in RFP condition.
7	22	8	Bid Evaluation	Bid Evaluation Sr. no. 5 CMMI level for Bidder Level ≥ 3- 15 points Level<3- 0 points	Suggestion- Level - 3, 5 Points Level- > 3 to <5, 10 Point Level- 5, 15 Points	No change in RFP

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8	23	8.0 Point A1	Bid Evaluation Criteria & Methodology Technical/Quality Evaluation	Total Experience of Successful execution of SCADA with Energy Management Solutions involving supply of Hardware, Networking & Software implementation with customized MIS Reports, Web & Mobile Application etc. Criteria for assigning Points: ≥1000MW - 25 points ≥750 MW - 20 points ≥500 MW - 15 points ≥250 MW - 10 points	Kindly allow consortium for this criteria so that maximum bidder can be participated.	Please Refer GIPCL reply agaianst point 2.
9	23	8.0 Bid Evaluation	Bid Evaluation Criteria & Methodology Technical/ Quality Evaluation	Bid Evaluation Criteria & Methodology Technical/Quality Evaluation: Overall Experience for SCADA Integration & Implementation with Customization And Experience of successfully implementation of SCADA with Energy Management Solutions , customization and Data Integration (Hardware, Networking & Software) for Renewable Projects	The criteria for assigning points is very stringent and may act as a hurdle for a fair competition. We request to relax the criteria in terms of MW capacity of the plants and no. of required projects to increase the competition. We also request to allow the credentials of the consortium members to be considered for the scoring of points.We suggest that there should be points for other important criteria like DSM regulations, Generation billing, foracasting, scheduling, energy accounting, MIS dashboards, Mobile apps, websites, etc. related to power sector which is missing in the given scoring requirements	No change in RFP
10	24	8.0 Point A2	Bid Evaluation Criteria & Methodology Technical/Quality Evaluation	Experience of successfully implementation of SCADA with Energy Management Solutions , customization and Data Integration (Hardware, Networking & Software) for Renewable Projects Criteria for assigning Points for implemented renewable projects Wind & Solar cumulative capacity: ≥250 MW -25 points ≥150 MW-20 points ≥100 MW-15 points ≥75 MW-10 points	Kindly allow consortium for this criteria so that maximum bidder can be participated.	Please Refer GIPCL reply agaianst point 2.
11	27	9	Detail Scope of Works		Need to discuss architecture,layout of existing set up & BOM	Please Refer RFP Clause 9 for Detail scope of work.
12	27	9	Detail Scope of Works		As per the layout given in tender , we need total 3 DCU at 3 locations.Please Confirm	Yes.As per scheme envisaged, 1 no.DCU will be required at 1 MW DSPP Amrol solar plant, 1 DCU at SLPP and 1 DCU at Kotadapitha s/s for RTU data (Total nos. 03(Three) to be considered .

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13	27	9	Detail Scope of Works	Indicative figure on GIPCL Remote Monitoring Scheme	We request to provide details of existing SCADA with OEM details and availability of existing database needs to be shared. We also request to provide details of field equipment(s) at each site which are not connected to SCADA but needs to be connected to the proposed system.	Data to be fetched/available up to GIPCL Vadodara end as follows: 1.0) Data available on FTP up to GIPCL end from 5 different wind sites as shown in RFP and 80 MW solar plant Charanka and 75 MW solar plant at charanka under execution data to be available on FTP up to GIPCL end. 2.0) Kotadapitha SS data :Data to be fetched from spare Modbus port of existing RTU(Dynalog Make) 3.0) Data to be fetched from SLPP: 1MW DSPP:Max DNA make system, 5 MW Solar plant:ABB make SCADA CHMI800,70 KW Rooftop system: maxDNA or Schneider Inverter with Modbus 485 system, 500 MW SLPP Data: CMS make ABT Server Database with SQL Server 2005 . For SLPP data bidder has to provide DCU with Modem and data logger (if required) for all data transfer up to GIPCL vadodara end. 4.0) 1 MW DSPP Aamrol data :To be fetched by providing enclosure for field devices along with DCU with I/Os & Modem for data transfer as per RFP. 5.0)30 KW Rooftop system: to be fetched from Scheinder make Inverter on Modbus RS485 to Network switch. 6.0) 310 MW CCPP: from existing database of CMS make ABT Server Database with SQL Server 2005
14	27	9	Detail Scope of Works		What is the actual purpose of data logger?	Data logger is envisaged for storage of data from Rooftop Solar Inverter for local storage to take care of communication failure with DCU/ Server. Two (02) nos. may be envisaged for the present.
15	28	9A Point 1	Detail Scope of Works	Kotadapitha wind farm pooling substation RTU data to be fetched at GIPCL Baroda end.	1. In which format Kotadapitha wind farm pooling substation RTU data will be available? 2. Is RTU data required to be fetched from hardware?	RTU Data to be fetched through Modbus and from available spare channels of RTU & by providing Data Concentrator unit with inbulit menory & a GSM Modem for communication with SCADA main server for fetching electrical parameters of the Kotadapitha Windfarm Pooling S/s.
16	28	9A Point 3	Detail Scope of Works	Data from Conventional Sources i.e. 310 MW Baroda plant is to be queried from existing SQL Server data base for every 15 min. by bidder.	We assume that GIPCL will provide the necessary access and rights for particular existing server.	Noted in line with RFP scope of work.
17	28	9A, Point no:2	Detail Scope of Works	Data for 75 MW solar (Under execution) and 80 MW Solar Plant at Charanka shall be fetched through FTP Server in .CSV/ Excel format.	Please provide accessibility details of the data. We expect the data is availble at site over suitable communication port and the device OEM protocol / open protocol is available.	For 80 MW Solar plant at Charanka , Data are available in 15 Minutes file on FTP at GIPCL Vadodara end. 75 MW Solar plant under excution and data will be available up to GIPCL Vadodara end in same manner.

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18	28	9A, Point no:4	Detail Scope of Works	For rooftop system at locations, the RS-485/ modbus data from the inverter/energy meter shall be mapped through data logger (if required) & pushed to a Data concentrator unit with adequate in-built memory by bidder.	GIPCL to provide all related device MODBUS mapping details for the data integration purpose.	Details shall be shared with successful bidder during detailed engineering stage.
19	29	9A, Point no:5b	Detail Scope of Works	Data of 5 MW Solar PV Plant shall be fetched from existing SCADA system and routed via data concentrator at SLPP/ Internet.	We expect the data access at 5MW Solar PV Plant is avaialble thorugh local SCADA OPC. In case any other available connectivity option, pls do share.	Data to be fetched from ABB Scada CHMI 800 through OPC/ ODBC connectivity.
20	29	9A, Point no:7,8	Detail Scope of Works	Bidder has to provide Secure Database of critical parameters for the data of Wind Turbine Generators (WTGs), Solar PV as well as Roof top solar & Conventional Generation in 1/5 / 10/ 15 minute data as per GIPCL requirement. The data would be systematically organized and stored in a secure database residing in the Central Server cum FTP cum Web server. In future OPC Server may also be onneted. The secure SCADA database shall also contain provision for storing all the Operation, Maintenance and Billing Reports of the assets.	GIPCL requires 1/5/10/15 minutes data. Future requirement of real time data in 1/5/10/15 minute requirement would require high speed data access and hardware updagrade. Also this clause mentions that database shall also contain provision for storing operation and maintenance data as well. CMS suggests to narrow down the requirement for specific objective only as integration of more O&M SCADA parameters and real time data requirement will impact system performance over long run.	Current requirement to Integrate available data in average 10 & 15 Minutes time Interval. However for system hardware selection and software design 5 minute time interval data may be considered for FTP input since it is going to be the norm in near future. For database size and memory sizing 5 minute data with a design margin of 25% may be considered .
21	29	9A, Point no:10	Detail Scope of Works	Bidder Scope covers Supply, installation, configuration, Integration and commissioning the required Hardware and software for Central Server cum FTP cum web Server, Data Concentrator(with in-built memory) units, Data loggers, communication equipment like Modems, Network Switches, Cabling,Converters, OFC cabling and termination, Surge Protectors & Power Distribution Boards etc. and successfully integrating them.	we need to know requirement of supply and laying of OFC cable , Power Distribution Board etc What is the need of OFC Cable if we are going to transmit data over internet?What is Surge Protectors , Power Distribution Board ? Why is it required?	Power distribution board is power strip with multiple sockets with indivdual switch and surge protected and of reputed make for server and other equipment .Bidder's scope includes supply of all Misc. items required for successfully completion of job as per Detail scope of work. Small panel with terminal boards would be required at 1 MW Amrol Solar Plant and may be required at other sites during detailed engg. OFC cable as such not envisaged. However to avoide any discripency bidder is requested to visit the site to familiarize with the detailed requirements.
22	29	9.0 Point A.6	Detail Scope of Works	The FTP Software shall be able to generate 1/5/10/15 minute .csv files of tags/data provided by GIPCL from the existing SCADA system / SQL Server database /Data Concentrator and push to the central FTP Server periodically.	Whether the software needs to generated for all 1/5/10/15 minute data or part of it? As per the present scheduling procedures 15 minute data is required and with CERC order on 5 minute scheduling we may only include the data from software of 5/10/15 minute.	Presently the data from Windfarms is available in 10 min. interval and from Solar/ Conventional plants in 15 minutes. However in future 5 min. interval is envisaged and hence system should be designed as such.

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23	29	9.0 Point A.6	Detail Scope of Works	Bidder shall provide the required software tool to generate (*.csv) files from data sources and make it available to the central FTP Server, query from existing SQL server database, SCADA, Solar Inverters etc.	Can we directly transmit data over internet to server or every time need to generate (.csv) file?	For solar charanka park & all wind farm data avaialble in 15min & 10 Min FTP file up to GIPCL end . For balance data as per scope of work bidder may directly transmit to server & generate data in 10/15 Min average ,by querying from source or in from of CSV/ Excel file directly from source. The actual execution would be done in the best possible manner. However data on front end shall be shown in 10/15 min. avg as per scope of work and the data shall brought to a common timebase.
24	30	9.0 Point A.12	Detail Scope of Works	"Bidder shall provide the required power strips of standard make with surge protection and fuses with sufficient spare sockets, power distribution boards of reputed makes with required cables and wires wherever required with sufficient spare capacity."	Explain this statement.	Bidder may Please refer GIPCL comment at Point 21.
25	31	9.0 Point A.13	Detail Scope of Works	--	Is it compulsory to take DCU as per the specifications given in tender document only ?Please Confirm	1. DCU with 8 DI & 8DO & 4 Analog inputs : 01 no. (Amrol Site) 2. DCU with 4 DI & 4DO & 4 Analog inputs : 01 no. (Kotadapitha S/s) 3. Rest of the DCUs need not have any I/Os.
26	31	9.0 Point A.13	Detail Scope of Works	FTP, HTTP, SMTP, UDP and also support MODBUS RTU, MODBUS TCP/IP, BACnet and DLMS, protocol for target device communication.	DCU should support all the protocols mentioned in tender document? (FTP, HTTP, SMTP, UDP and also support MODBUS RTU, MODBUS TCP/IP, BACnet and DLMS, protocol for target device communication)	Yes it should support all formats. However bidder may familiarize with site visit.
27	31	9.0 Point A.13	Detail Scope of Works	DCU should support FTP/web service/email/TCP/IP (bi-directional –Server/Client)	Emails should get sent through DCU?	E-Mail facility not envisaged.
28	31	9.0 Point A.13	Detail Scope of Works	Remote Configuration of modem & target device through web browser.	If we are going to connect DCU with internet data card (DCU supports USB Port to connect internet data cards) , then what is the purpose of Modem?	DCU with in-builit memory may have modem in-built or separate. Best technical and commercial option to be selected.

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29	31	9.0 Point A.13	Detail Scope of Works	Auto IP reports to the Dynamic DNS MODBUS 32 Bit DCU compatible 16 Channel Digital IO module, 4 analog Inputs.	Explain this statement.	Bidder may supply Please refer GIPCL comment at Point 25.
30	33	9B, Point no:2	Detail Scope of Works	Dashboard must show over all Plant status ,data of Individual turbines and performance metrics such as production with key parameters for different sources like Status of Individual Turbine (Wind & conventional) and Over all Farm"s data of Electrical parameters with cumulative Generation, Power etc with Wind Speed, Wind & Nacelle Angle, Turbine speed, critical mperatures of Turbines and plants, creation Power curve & Wind Rose based on Wind data, Budgeted Vs Actual generation etc, weather station data like irradiance, energy & temperature string level voltage/current and power generation of solar plant etc.	GIPCL will provide suitable protocol details / interface details / OPC tag details to fetch the required data	Sample files with different Parameters of Wind & Solar received on FTP is attached as an *Annexure-I.* This is purely to understand the nature of job. However the detailed scope of work to be carried out by Bidder shall remain as per GIPCL RFP clause 9.0 i.e."Detail scope of work."
31	34	9B Point 5(iii)	Detail Scope of Works	System shall have the facility for controlling equipments remotely like Breakers, relays, and other equipments if needed	Which types of control will be required? Please explicit the same.What kind of other equipments need to be controlled ? Where are these breakers or relays ?	For 1 MW Amrol Solar plant only remote operation of 11 KV and 415 V Breakers is envisaged.
32	34	9B Point 6	Detail Scope of Works	Bidder shall consider Total Tags for above works around 10000 and no. Of input sources as detailed above. However Bidder shall keep Provision of additional tags as decided by Owner during detail engineering/ execution if required.	Please specify this point in detailed. Which type of tags we have to consider?	Each parameter of data has been considered as a tag.
33	34	9B Point 5(iv)	Detail Scope of Works	The Bidder shall consider at least 10 user accounts/login over LAN /Web/ Mobile within the quoted price.	10 users for LAN , WEB , Mobile each?	Yes
34	35	9B, Point no:8	Detail Scope of Works	Bidder shall provide complete system i.e. Dashboard software,Reporter ,Alarm & Historian software, Software for data Pushing/Pulling on Central FTP cum web server as well as MIS Reports for easily scalable and configurable for GIPCL future needs. There shall not be any recurring Renewal Licence Fee payable in O&M stage and all cost for all such development to be clearly included in quoted supply and installation cost and same shall be considered as Total contract value on which Bidder"s bid shall be evaluated	Please provide details of 'Alarm & Historian' Software.	Bidder has to create Alarm & History based on available realtime data through any means like FTP/QUERY/OPC etc. and also from the timeblock/daily/monthly/quarterly/yearly reports uploaded to the database through data from OEM web portals/ SLDC website.

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35	36	9B, Point no:16	Detail Scope of Works	User shall be able to modify or create a new dashboard pages as per requirement. User shall be allowed post facto updation of data manually in the database.	Please explain this statement.	The dashboard software shall permit changes in the display screens , creating of new screens , create new or modify existing single line diagrams. Bidder shall provide interface for modifying erroneous or missing data of any period post-facto to the authorized user.
36	36	9B, Point no:20	Detail Scope of Works	The software shall generate alarms in case of Status Change of the machine/ Inverter/device and generate visual as well as audible alarm. Communication loss shall be indicated distinctly.	Audible alarms will be at local station. Visual alarm is required at local station or control room?	Audible & visual alarm to be generated by Main Scada Server in the Control Room at Baroda at the operator consoles & large screen displays.
37	37	9B, Point no:25	Detail Scope of Works	Daily /Monthly/Yearly Generation reports, Alarm Reports, O & M Reports, Wind Energy Certificates, Solar Energy Certificates, DC, Schedule and Deviation Reports etc. would also be input into the database either manually or through automatic download. The same shall also be available through Reporter.	Direct certificate input needs to be given to the system manually.	Noted.
38	37	9B, Point no:23	Detail Scope of Works	The database shall be optimally organized so that the queries are executed quickly. Options to pivot or transpose the data shall be provided. Data from different sources are received with different timestamp. The same would have to be integrated/ averaged to obtain a uniform 15min. Blockwise value of total generation.	Pivot and Data transpose are basically MS Excel functions and will be incorporated in Reporter Module (Excel Reports). Please confirm.	Noted.Suitable queries shall be made to achieve the same.
39	40	10	Completion Time	The bidder has to complete the implementation of Centralize Monitoring system with Integration as per detail scope of work clause 9 of this RFP in all respect within 3 months from the date of issuance of Letter of Intent (LOI).	We understand that this type of project requires meticulous planning and wide range of discussions with GIPCL management prior to approval of solution design and installation of the hardware and software. Considering this, we request to consider the extension of completion time for the project from 3 months to 6 months	No change in RFP.
40	41	13	Annual Maintenance	Any creation of new report, screens, alarms or modification/changes of existing ones shall be carried out as part of AMC at no extra cost.	We need to know that how many new reports will be in scope of AMC (or the reports should in line with existing reports) - This is an open ended requirement.	Any changes /modification envisaged by GIPCL management shall be carried out by Bidder at no extra cost hence No change in RFP.
41	--	--	--	Estimated cost of the project	We request to provide the estimated cost of the project	Not relevant in line with RFP terms.
42	--	--	--	--	Will they allow us to access files from local server at wind farm?	Data from OEM server is available through FTP in the form of CSV /Excel format. Blockwise /Daily /Monthly/Yearly reports are available through customer web portal of OEMs.

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1	11	6.2	Bid Submission	Bidder will have to upload scanned copy of Bidder & Bid Information (Annexure-II) as per attached format as a part of Technical Bid (Part-I) on nprocure portal in the Technical Bid section.	Text ammended and to be read as:**"Bidder will have to upload scanned copy of Bidder & Bid Information (Annexure-II) as per attached format as a part of Technical Bid (Part-I) along with scan copy Tender Fee DD & EMD DD/BG on nprocure portal in the Technical Bid section."**
2	59	hecklist point -	Annexure-X	Has the offer (Part-I only) been submitted in one original plus one copy?	Amendment to be read as:**"Has the offer (Part-I & II) been submitted in one original plus one copy?"**
3	36	9B., Point 21	Detail Scope of Works	The SCADA System Time shall be synchronized using existing GPS Clock output/ existing Server Time.	GPS CLOCK Details: Meinberg GPS170 PCI . Synchronizing of Main SCADA Server time to be done through network. All devices connected to the Main Server shall be maintained in time synchronism with Main SCADA Server.
4	28	9	Detail Scope of Works	03 nos. Industrial grade Large Screen LED Displays of minimum 65" shall be stationed and supply by Bidder in the Control Room to view the Real Time Status of various assets and their performance.	Display of 65" Panasonic make shall be considered as 65" Industrial grade LED TV of Panasonic make.
5	69	Part-II	Various clauses in GCC	DELETAED	Typographical error in RFP for the word. To be read as "DELETED" wherever aplicable
6	--	--	Detail Scope of Works	Network Switch for Main SCADA Server at Baroda	Network switch details for Main Server : Dlink 24 port L3 Switch Model DGS3627.

Date_Time	SCADA_ID	Turbine_Name	Turbine_IP	ActivePower_Avg	ActivePower_Min	ActivePower_Max	CummulativeEnergy Reading	Windspeed_Avg	Windspeed_Max	Windspeed_Min	WindDirection	NacellePos	AuxilaryPower	ReactivPower_RKVA_Min	ReactivPower_RKVA_Max	ReactivPower_RKVA_Avg	Pitch_Voltage_1	Pitch_Voltage_2	Pitch_Voltage_3	ambtemp
5/2/2018 0:10	RJ7T02	RJ7T02	192.0.6.15:	721.14	554.26	919.56	120.11	7.43	9	5.69	185.87	189.91	0.02	-17.94	15.93	0.01	0	0	0	0
5/2/2018 0:10	RJ7T03	RJ7T03	192.0.6.15:	609.96	398.82	948.59	101.66	7.29	9.84	5.42	90.21	88.77	0.45	-17.03	16.3	0	0	0	0	0
5/2/2018 0:10	RJ7T04	RJ7T04	192.0.6.154	751.49	651.64	871.03	125.31	7.76	9.53	6.28	330.82	335.52	0.04	-12.27	12.45	-0.01	0	0	0	0
5/2/2018 0:10	RJ7T05	RJ7T05	192.0.6.15!	899.53	108.22	1040.41	149.95	8.17	10.05	6.4	211.12	214.46	0	-51.27	106.57	-0.02	0	0	0	0
5/2/2018 0:10	RJ7T42	RJ7T42	192.0.6.16!	0	0	0	0	7.85	7.85	7.85	91.23	96.73	0.16	0	0	0	0	0	0	0
5/2/2018 0:10	ROJ55	ROJ55	192.0.6.15(	499.72	298.28	771.42	83.29	6.79	8.93	4.39	84.29	85.14	0.01	-9.7	10.99	0.01	0	0	0	0
5/2/2018 0:10	RJ7T01	RJ7T01	192.0.6.15:	554.34	410.98	701.2	92.39	6.97	8.37	5.47	14.3	8.45	11.31	-13.73	10.8	0	0	0	0	0
5/2/2018 0:10	RJ8T180	RJ8T180	192.0.6.20'	573.23	393.33	843.93	95.57	7.02	8.84	5.57	240.38	244.54	10.04	-21.06	22.34	-0.01	0	0	0	0
5/2/2018 0:10	RJ8T181	RJ8T181	192.0.6.20!	733.93	607.32	834.05	122.38	7.25	8.8	5.65	187.51	193.17	0.1	-21.79	18.68	-0.01	0	0	0	0
5/2/2018 0:10	RJ8T185	RJ8T185	192.0.6.21(	534.39	439.91	622.86	89.01	6.7	8.16	5.3	329.76	333.26	0.39	-4.39	4.58	0	0	0	0	0
5/2/2018 0:10	RJ9T074	RJ9T074	192.0.6.21:	691.8	335.35	915.43	115.26	7.84	9.65	5.61	222.41	225.88	11.44	-62.99	173.58	0.02	0	0	0	0
5/2/2018 0:20	RJ7T02	RJ7T02	192.0.6.15:	752.11	625.67	923.58	125.37	7.49	9.14	5.81	185.58	189.91	0	-18.86	16.85	0	0	0	0	0
5/2/2018 0:20	RJ7T03	RJ7T03	192.0.6.15:	506.84	387.82	744.32	84.47	6.9	8.99	5.11	87.79	88.76	0.14	-13.37	8.97	0.01	0	0	0	0
5/2/2018 0:20	RJ7T04	RJ7T04	192.0.6.154	939.37	792.11	1071.72	156.51	8.29	9.69	6.22	330.95	335.52	0.02	-9.7	8.24	0	0	0	0	0
5/2/2018 0:20	RJ7T05	RJ7T05	192.0.6.15!	977.37	819.58	1040.77	162.81	8.39	9.99	7.1	212.1	211.22	0	-13.73	12.82	0.02	0	0	0	0
5/2/2018 0:20	RJ7T42	RJ7T42	192.0.6.16!	0	0	0	0	7.85	7.85	7.85	91.23	96.73	0.15	0	0	0	0	0	0	0
5/2/2018 0:20	ROJ55	ROJ55	192.0.6.15(	738.06	470.03	938.42	122.91	7.82	9.46	5.73	82.47	85.14	0.02	-14.1	13.73	0.01	0	0	0	0
5/2/2018 0:20	RJ7T01	RJ7T01	192.0.6.15:	634.72	505.34	843.49	105.82	7.25	9.08	5.59	12.18	8.45	11.64	-20.14	23.99	0.02	0	0	0	0
5/2/2018 0:20	RJ8T180	RJ8T180	192.0.6.20'	925.39	609.55	1139.7	154.28	8.04	9.45	5.64	240.5	244.54	11.41	-26.73	24.54	0	0	0	0	0
5/2/2018 0:20	RJ8T181	RJ8T181	192.0.6.20!	826.66	664.26	934.97	137.73	7.52	9.03	6.18	187.97	190.23	0.36	-23.25	16.3	0	0	0	0	0
5/2/2018 0:20	RJ8T185	RJ8T185	192.0.6.21(	724.36	603.26	896.12	120.85	7.31	8.94	5.74	330.15	333.26	0.01	-13.55	11.17	0	0	0	0	0
5/2/2018 0:20	RJ9T074	RJ9T074	192.0.6.21:	684.48	466.49	880.91	114.16	7.9	10.14	6.01	223.89	225.88	12.52	-19.78	16.3	-0.01	0	0	0	0
5/2/2018 0:30	RJ7T02	RJ7T02	192.0.6.15:	809.41	661.69	992.43	134.99	7.56	9.53	5.8	187.71	189.91	0.01	-17.94	15.75	0	0	0	0	0
5/2/2018 0:30	RJ7T03	RJ7T03	192.0.6.15:	615.98	430.31	908.94	102.65	7.15	9.84	5.27	90.19	88.77	0.2	-16.66	16.3	0	0	0	0	0
5/2/2018 0:30	RJ7T04	RJ7T04	192.0.6.154	934.31	832.12	1056.61	155.72	8.24	10.17	6.66	332.16	335.52	0.1	-8.61	6.96	0.01	0	0	0	0
5/2/2018 0:30	RJ7T05	RJ7T05	192.0.6.15!	997.66	898.86	1031.98	166.36	8.5	10.43	6.77	213.48	211.22	0	-7.32	7.32	0	0	0	0	0
5/2/2018 0:30	RJ7T22	RJ7T22	192.0.6.15:	0	0	0	0	3.58	10.36	0	215.41	215.09	0.05	0	0	0	0	0	0	0
5/2/2018 0:30	RJ7T40	RJ7T40	192.0.6.164	0	0	0	0	0	0	0	1.47	1.47	0	0	0	0	0	0	0	0
5/2/2018 0:30	RJ7T42	RJ7T42	192.0.6.16!	0	0	0	0	7.88	9.84	6.28	91.95	96.73	1.17	0	0	0	0	0	0	0
5/2/2018 0:30	ROJ55	ROJ55	192.0.6.15(	656.55	443.3	885.68	109.42	7.43	9.86	5.65	84.01	85.14	0.05	-19.23	11.9	0	0	0	0	0
5/2/2018 0:30	RJ7T01	RJ7T01	192.0.6.15:	662.96	565.04	850.67	110.51	7.24	9.01	5.74	8.26	8.45	11.08	-22.89	17.21	-0.01	0	0	0	0
5/2/2018 0:30	RJ8T180	RJ8T180	192.0.6.20'	1017.13	821.5	1224.81	169.46	8.25	9.64	6.78	241.4	244.54	12.07	-19.96	20.51	0	0	0	0	0
5/2/2018 0:30	RJ8T181	RJ8T181	192.0.6.20!	980.27	792.29	1092.91	163.43	7.92	9.57	6.7	190.88	189.29	0.37	-12.63	10.25	0	0	0	0	0
5/2/2018 0:30	RJ8T185	RJ8T185	192.0.6.21(	778.5	678.96	843.57	129.68	7.49	8.84	6.23	329	333.26	0.01	-11.54	12.63	-0.01	0	0	0	0
5/2/2018 0:30	RJ9T074	RJ9T074	192.0.6.21:	886.31	582	1142.88	147.64	8.45	10.2	6.45	224.3	225.88	12.1	-18.13	14.47	0.01	0	0	0	0
5/2/2018 0:40	RJ7T02	RJ7T02	192.0.6.15:	912.16	690.86	1041.87	151.9	7.94	10.42	6.35	190.95	189.91	0	-17.21	14.1	0.01	0	0	0	0
5/2/2018 0:40	RJ7T03	RJ7T03	192.0.6.15:	672.34	411.67	891.38	112.09	7.57	10.55	5.19	92.74	88.77	0.35	-21.42	14.47	-0.02	0	0	0	0
5/2/2018 0:40	RJ7T04	RJ7T04	192.0.6.154	1027.6	902.15	1192.57	171.32	8.53	10.15	6.48	334.88	335.52	0.48	-4.39	4.39	-0.01	0	0	0	0
5/2/2018 0:40	RJ7T05	RJ7T05	192.0.6.15!	1000.14	981.63	1016.05	166.63	8.86	10.85	7.27	217.35	211.22	0	-2.93	3.3	0	0	0	0	0
5/2/2018 0:40	RJ7T22	RJ7T22	192.0.6.15:	-0.17	-49.07	0	-0.03	8	10.41	5.45	326.1	324.66	0	-2.56	1.28	0	0	0	0	0
5/2/2018 0:40	RJ7T40	RJ7T40	192.0.6.164	-0.07	-32.04	0	-0.01	6.99	10.21	0	28.21	24.18	0	-1.46	6.96	0.01	0	0	0	0
5/2/2018 0:40	RJ7T42	RJ7T42	192.0.6.16!	-0.26	-57.48	0	-0.04	8.69	10.78	6.28	96.15	96.73	5.87	-1.65	8.06	0	0	0	0	0
5/2/2018 0:40	ROJ55	ROJ55	192.0.6.15(	435.48	259.83	673.1	72.6	6.56	8.67	4.31	84.98	85.14	0.02	-10.07	8.06	0	0	0	0	0
5/2/2018 0:40	RJ7T01	RJ7T01	192.0.6.15:	824.56	639.88	1020.98	137.4	7.83	10.7	6.14	10.19	8.45	11.49	-19.78	21.79	-0.01	0	0	0	0
5/2/2018 0:40	RJ8T180	RJ8T180	192.0.6.20'	1045.87	905.2	1157.17	174.23	8.31	10.17	7.08	241.25	244.54	11.02	-18.31	17.03	-0.01	0	0	0	0
5/2/2018 0:40	RJ8T181	RJ8T181	192.0.6.20!	1121.56	918.73	1371.02	186.93	8.38	10.39	6.77	194.36	189.29	0.34	-8.24	6.59	-0.01	0	0	0	0
5/2/2018 0:40	RJ8T185	RJ8T185	192.0.6.21(	976.98	840.09	1178.83	162.89	8.07	9.57	6.41	331.74	333.26	0.02	-9.34	8.42	-0.01	0	0	0	0
5/2/2018 0:40	RJ9T074	RJ9T074	192.0.6.21:	754.05	442.97	951.91	125.65	8.02	10.53	5.7	221.5	225.88	11.52	-19.96	17.4	0.02	0	0	0	0
5/2/2018 0:50	RJ7T02	RJ7T02	192.0.6.15:	985.5	788.27	1056.15	164.36	8.19	10.14	6.64	194.15	189.91	0.01	-10.99	10.62	0	0	0	0	0

Timestamp	B1 INV1 ACT PWR	B1 INV1 TOT ENGY	B1 INV2 ACT PWR	B1 INV2 TOT ENGY	B1 INV3 ACT PWR	B1 INV3 TOT ENGY	B1 INV4 ACT PWR	B1 INV4 TOT ENGY	B1 MFM1 ACT ENE IMP	B1 MFM1 PWR TOL	B1 MFM2 ACT ENE IMP	B1 MFM2 PWR TOL	B2 INV1 ACT PWR	B2 INV1 TOT ENGY	B2 INV2 ACT PWR	B2 INV2 TOT ENGY	B2 INV3 ACT PWR	B2 INV3 TOT ENGY	B2 INV4 ACT PWR
10/1/2018 0:00		202923		200078		201060		193745	3978882		3890706	3.293136		201893		203460		199941	
10/1/2018 0:15		202923		200078		201060		193745	3978882		3890707	3.312003		201893		203460		199941	
10/1/2018 0:30		202923		200078		201060		193745	3978882		3890707	3.290073		201893		203460		199941	
10/1/2018 0:45		202923		200078		201060		193745	3978882		3890709	3.263144		201893		203460		199941	
10/1/2018 1:00		202923		200078		201060		193745	3978882		3890710	3.285721		201893		203460		199941	
10/1/2018 1:15		202923		200078		201060		193745	3978882		3890710	2.171341		201893		203460		199941	
10/1/2018 1:30		202923		200078		201060		193745	3978882		3890710	3.276748		201893		203460		199941	
10/1/2018 1:45		202923		200078		201060		193745	3978882		3890711	2.163681		201893		203460		199941	
10/1/2018 2:00		202923		200078		201060		193745	3978882		3890712	3.285039		201893		203460		199941	
10/1/2018 2:15		202923		200078		201060		193745	3978882		3890713	3.271709		201893		203460		199941	
10/1/2018 2:30		202923		200078		201060		193745	3978882		3890713	2.181383		201893		203460		199941	
10/1/2018 2:45		202923		200078		201060		193745	3978882		3890714	2.198508		201893		203460		199941	
10/1/2018 3:00		202923		200078		201060		193745	3978882		3890714	2.193594		201893		203460		199941	
10/1/2018 3:15		202923		200078		201060		193745	3978882		3890715	3.298864		201893		203460		199941	
10/1/2018 3:30		202923		200078		201060		193745	3978882		3890716	3.292607		201893		203460		199941	
10/1/2018 3:45		202923		200078		201060		193745	3978882		3890716	3.29974		201893		203460		199941	
10/1/2018 4:00		202923		200078		201060		193745	3978882		3890717	3.297056		201893		203460		199941	
10/1/2018 4:15		202923		200078		201060		193745	3978882		3890718	2.138904		201893		203460		199941	
10/1/2018 4:30		202923		200078		201060		193745	3978882		3890718	2.150649		201893		203460		199941	
10/1/2018 4:45		202923		200078		201060		193745	3978882		3890719	2.745301		201893		203460		199941	
10/1/2018 5:15		202923		200078		201060		193745	3978882		3890721	2.175734		201893		203460		199941	
10/1/2018 5:30		202923		200078		201060		193745	3978882		3890721	2.124705		201893		203460		199941	
10/1/2018 5:45		202923		200078		201060		193745	3978882		3890722	1.983274		201893		203460		199941	
10/1/2018 6:00		202923		200078		201060		193745	3978882		3890722	2.087188		201893		203460		199941	
10/1/2018 6:15		202923		200078		201060		193745	3978882		3890723	2.182711		201893		203460		199941	
10/1/2018 6:30		202923		200078		201060		193745	3978882		3890723	2.119763		201893		203460		199941	
10/1/2018 6:45		202923		200078		201060		193745	3978882		3890724	2.122308		201893		203460		199941	
10/1/2018 7:00	26	202923	26	200078	24	201060	26	193745	3978887	54.9377	3890729	47.83468	28	201893	25	203461	27	199941	30
10/1/2018 7:15	65	202924	63	200080	67	201061	67	193746	3978909	129.5493	3890750	134.511	70	201895	65	203462	64	199942	76
10/1/2018 7:30	114	202927	117	200082	116	201063	121	193748	3978954	229.6953	3890799	236.7607	121	201897	119	203464	117	199945	135
10/1/2018 7:45	169	202930	177	200085	175	201067	176	193752	3979025	344.8311	3890870	347.9996	187	201901	180	203468	182	199948	202
10/1/2018 8:00	242	202935	248	200091	242	201072	245	193758	3979127	486.1006	3890972	483.8982	258	201906	255	203473	251	199954	280
10/1/2018 8:15	311	202942	323	200098	316	201079	320	193765	3979264	625.8865	3891108	620.017	331	201913	329	203481	326	199961	365
10/1/2018 8:30	381	202950	399	200107	389	201088	394	193774	3979437	781.9906	3891280	765.8912	407	201923	405	203490	401	199970	448
10/1/2018 8:45	455	202961	472	200118	459	201099	465	193784	3979663	918.9595	3891487	902.6739	486	201934	477	203501	474	199981	525
10/1/2018 9:00	523	202974	540	200131	526	201111	535	193797	3979907	1055.919	3891727	1040.235	555	201947	546	203514	546	199994	609
10/1/2018 9:15	618	202995	640	200153	621	201132	629	193819	3980338	1242.101	3892174	1231.216	655	201970	643	203536	644	200016	717
10/1/2018 9:45	704	203020	723	200178	707	201158	718	193844	3980830	1406.827	3892661	1399.326	740	201996	729	203562	725	200041	800
10/1/2018 10:00	750	203039	770	200197	750	201176	764	193862	3981190	1500.824	3893019	1490.288	786	202015	775	203580	776	200060	861
10/1/2018 10:15	795	203058	816	200217	796	201195	808	193882	3981572	1585.107	3893399	1573.522	831	202036	820	203601	819	200081	922
10/1/2018 10:30	833	203078	854	200238	835	201216	849	193903	3981973	1664.94	3893797	1642.465	867	202057	858	203621	862	200102	966
10/1/2018 10:45	860	203099	884	200260	865	201237	883	193925	3982424	1719.259	3894214	1714.492	897	202079	889	203643	888	200123	996
10/1/2018 11:00	895	203121	914	200282	896	201259	914	193947	3982857	1780.782	3894644	1772.023	926	202101	915	203666	919	200146	1033
10/1/2018 11:15	911	203144	935	200305	918	201282	935	193970	3983299	1814.193	3895119	1814.995	948	202124	939	203689	944	200169	1063
10/1/2018 11:30	940	203167	963	200329	940	201305	960	193994	3983754	1869.115	3895572	1857.874	971	202150	960	203713	967	200193	1082
10/1/2018 11:45	962	203191	982	200353	964	201329	977	194018	3984219	1911.321	3896034	1891.319	990	202174	979	203737	985	200218	1107