



ENERGISING INDIA USING SOLAR ENERGY PROJECTS



Document Prepared by EKI Energy Services Limited

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1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The project activity is a step towards supporting the implementation and installation of grid connected renewable solar energy power plants in India. The implementation of project activity ensures energy security, diversification of the grid generation mix and sustainable growth of the electricity generation sector in India. The main goal of project activity is to implement renewable energy projects in the country and the significant importance of revenues from sale of Verified Carbon Units (VCUs) to achieve this goal forms the basis of the implementation of this project activity. The project activity is a voluntary action and each SPV is the Project Proponent for their project activity. Azure Power India Pvt Ltd as a parent company formed different SPVs (Special Purpose Vehicles) for solar projects and projects are developed by name of SPVs. There are no mandatory laws or regulations existing in India requiring PP or any other party to develop a programme for renewable generation plants.

The project activity supports the development of new grid-connected renewable energy power plants in India and covers the solar energy technologies. It seeks to enable investment in large scale grid connected plants that export their generated output to the regional / national electricity grid in India. This project activity follows methodology ACM0002 version 19.0.

The electricity generated by renewable technology (solar) installed as part of the project activity will be supplied either to the regional grid and/or will be supplied to the identified facility via regional grid through a contractual wheeling agreement for captive consumption there by displacing the consumption of electricity from the regional grid electricity distribution system. The details of the project and the state of installation are provided in Section 3.1 of the MR.

The total AC capacity of the project activity is 480 MW and the power produced displaces an equivalent amount of power from the grid, which is fed mainly by fossil fuel fired power plants. Hence, it results in reduction of GHG emissions. GHG emission reductions from the project activity will be 852,639 tonnes of CO₂e and total GHG emission reductions for the chosen 10 year crediting period will be 8,526,390 tonnes of CO₂e.

Commissioning details of the project activity are provided in section 3.1 of this monitoring report.

During the Current Monitoring Period from 01-March-2020 to 31-December-2020 (First and last date included) the project activity has contributed 733,563 tCO₂e GHG reductions.

1.2 Sectoral Scope and Project Type

The project activity falls under the following Sectoral scope and Project Type:

Sectoral Scope : 01 - Energy industries (renewable / non-renewable sources)

Project Type : I - Renewable Energy Projects

Methodology : ACM0002: Grid-connected electricity generation from renewable sources - Version 19.0¹

The project is not a grouped project activity.

1.3 Project Proponent

Organization name	Azure Power India Pvt Ltd
Contact person	Mr. Sunil Hansu
Title	Operations & Maintenance
Address	5th Floor, Southern Park, D-II, Saket Place, Saket, New Delhi – 110017
Telephone	+91-8383084423
Email	Sunil.hansu@azurepower.com

1.4 Other Entities Involved in the Project

Organization name	EKI Energy Services Limited
Role in the Project	Project Consultancy
Contact person	Anjali Rao
Title	Manager
Address	Office No 201, Plot No 48, Scheme 78, Part 2, Vijay Nagar, Indore-452010, Madhya Pradesh
Telephone	+91 9109120940
Email	anjali@enkingint.org / registry@enkingint.org

1.5 Project Start Date

19 September2017² which is the date of commissioning of first phase of the Project. The SPV name is Azure Power Jupiter Pvt Ltd. Hence the project start date is 19-September-2017.

The commission details are mentioned in Section 3.1.

1.6 Project Crediting Period

Crediting Period Start date: 19-September-2017

¹ <http://cdm.unfccc.int/UserManagement/FileStorage/58IAGB7SZUDEO2VN6LYM30K41HFPRQ>

² As per the commissioning certificate.

Crediting Period End date: 18-September-2027

The project activity adopts renewable crediting period of 10 years period which can be renewed for maximum 2 times.

1.7 Project Location

S. No.	Name of the SPVs	Village	Tehsil	District	State	Latitude	Longitude
1.	Azure Power Jupiter Pvt Ltd	Bibiyapur	Hardoi	Hardoi	Uttar Pradesh	27°35'12.9N	79°43'51.6"E
		Raniganj	Hamirpur	Hamirpur		25°54'18.4"N	79°55'10.1"E
2.	Azure Power Thirty Seven Pvt Ltd	Rachur, Marchal, & Veljal	Veldana, Kalwakurthy, & Talakondapalli	Nagar Kurnool & RangaReddy	Telangana	16°31'11.0"N	77°53'49.0"E
3.	Azure Power Venus Pvt Ltd	Dakor	Orai	Jalaun	Uttar Pradesh	25°51'07.1"N	79°25'42.4"E
4.	Azure Power Thirty Six Pvt Ltd	Gani & Sakunala	kurnool	kurnool	Andhra Pradesh	14°01'30.6"N	78°26'36.6"E
5.	Azure Power Thirty Three Pvt Ltd	Dhari	Jambusar	Bharuch	Gujarat	22°04'01.0"N	72°37'01.0"E
		Semaliya	Bayad	Aravalli		23°13'37.3"N	73°22'34.6"E
		Vadol	Kapadvanj	Kheda		22°57'47.7"N	73°12'59.1"E
		Sanes	Bhavnagar	Bhavnagar		21°54'11.6"N	72°06'38.9"E
		Vartol	Khedbrahma	Sabarkantha		24°05'32.7"N	73°04'19.3"E
		Netramali	Idar	Sabarkantha		23°46'13.2"N	72°59'42.4"E
		Muloj	Modasa	Aravalli		23°30'52.9"N	73°26'28.3"E



Custom Map locator this project activity: [Click here](#)

1.8 Title and Reference of Methodology

The methodology for the project activity is approved methodology for large-scale CDM project activities. The details of the methodology are as follows:

Methodology: ACM0002

Project Type: Type-I: Renewable Energy Projects

Title: ACM0002: Grid-connected electricity generation from renewable sources

Version No.: Version 19.0;

Reference: CDM Methodology³

The methodology refers to following CDM Tools:

- Tool for the demonstration and assessment of additionality⁴ (Version 07.0.0, EB 70, Annex 8)
- Tool to calculate the emission factor for an electricity system⁵ - (Version 07.0 EB 100, Annex 04)

³ <http://cdm.unfccc.int/UserManagement/FileStorage/58IAGB7SZUDEO2VN6LYM30K41HFPRQ>

⁴ <https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-01-v7.0.0.pdf>

⁵ <http://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-07-v7.0.pdf>

1.9 Participation under other GHG Programs

The project activity has not been registered and is not seeking registration at moment under any other GHG programs.

This project activity is not participating in any other GHG program.

1.10 Other Forms of Credit

Include the following information, as applicable:

- Emission Trading Programs and Other Binding Limits: The project activity under consideration is not participating in any other Emission trading programme and other binding limits.

The project activity is not participating at moment in any other emission trading programme and other binding limits. The GHG emission reductions generated during the current monitoring period have not been used for compliance of other mechanism

- Other Forms of Environmental Credit: The solar project activity neither has nor intends to generate any other form of GHG related environmental credit for GHG emission reductions or removals claimed under the VCS Program. The initial project activity is neither has nor intends to generate any other form of GHG related environmental credit for GHG emission reductions or removals claimed under the VCS Program.

1.11 Sustainable Development

Contribution to sustainable development:

Ministry of Environment, Forest and Climate Change, has stipulated economic, social, environment and technological well-being as the four indicators of sustainable development. The project contributes to sustainable development using the following ways.

- **Social well-being**: The project helps in generating employment opportunities during the construction and operation phases. The project activity leads to development in infrastructure in the region like development of roads and also may promote business with improved power generation.
- **Economic well-being**: The project is a clean technology investment in the region, which had not been taken place in the absence of the VCS benefits the project activity. It also help to reduce the demand supply gap in the state. The project activity generates power using zero emissions solar based power generation which helps to reduce GHG emissions and specific pollutants like SO_x, NO_x, and SPM associated with the conventional thermal power generation facilities.
- **Technological well-being**: The successful operation of project activity leads to promotion of solar based power generation and encourages other entrepreneurs to participate in similar projects.

- **Environmental well-being:** The project activity being a renewable source of energy, it reduces the dependence on fossil fuels and conserves natural resources which are on the verge of depletion. Due to its zero emission the project activity also helps in avoiding significant amount of GHG emissions.

2 SAFEGUARDS

2.1 No Net Harm

The project activity does not involve any major construction activity. It primarily requires the installation of the solar panels, interfacing the generators with the State Electricity Board by setting up HT transmission lines and installation of other accessories.

The report on “Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE dated September 2013. This report clearly mentioned that solar project activity operations do not result in direct air pollution, noise pollution. Please refer below web link for the same⁶.

Thus there are no any significant impacts due to implementation of project activity on air, water, soil quality and ambience are envisaged due to the project activity.

2.2 Local Stakeholder Consultation

As a part of continual improvement process, feedback from the associated stakeholders is vital, therefore a dedicated Visitor register cum grievance register has been placed at the project site which is accessible to stakeholders to provide their feedback on the project. It is appropriate publicly accessible location at which local stakeholders can provide their feedback on the project. This location is also conducive to continuous and regular checks for stakeholder comments. For the global stakeholders, the suggestion and the grievance can be submitted to <http://www.azurepower.com/contact-us>

However, no any grievances received during the current monitoring period. Since no any grievances received, no any mitigation measures are required. The grievance copies have been submitted to DOE.

2.3 AFOLU-Specific Safeguards

This Section is not applicable here as the project activity is not an AFOLU project activity.

3 IMPLEMENTATION STATUS

⁶ <https://smartnet.niua.org/sites/default/files/resources/report-on-developmental-impacts-of-RE.pdf>

3.1 Implementation Status of the Project Activity

The project activity is a step towards supporting the implementation and installation of grid connected renewable solar energy power plants in India. The implementation of project activity ensures energy security, diversification of the grid generation mix and sustainable growth of the electricity generation sector in India. The main goal of project activity is to implement renewable energy projects in the country and the significant importance of revenues from sale of Verified Carbon Units (VCUs) to achieve this goal forms the basis of the implementation of this project activity. The project activity is a voluntary action and each SPV will be the Project Proponent for their project activity. Azure Power India Pvt Ltd as a parent company formed different SPVs (Special Purpose Vehicles) for solar projects and projects are developed by name of SPVs. There are no mandatory laws or regulations existing in India requiring PP or any other party to develop a programme for renewable generation plants.

The project activity supports the development of new grid-connected renewable energy power plants in India and covers the solar energy technologies. It seeks to enable investment in large scale grid connected plants that export their generated output to the regional / national electricity grid in India. This project activity follows methodology ACM0002 version 19.0¹.

The electricity generated by renewable technology (solar) installed as part of the project activity will be supplied either to the regional grid and/or will be supplied to the identified facility via regional grid through a contractual wheeling agreement for captive consumption there by displacing the consumption of electricity from the regional grid electricity distribution system. As of 31-December-2013, the Southern grid has also been synchronised with the NEWNE grid, hence forming one unified Indian Grid. Thus for this Project activity Indian Grid is applicable. The objective of the project activity is to develop a platform for reducing VCS Registration timelines and process costs for registration of individual projects under VCS.

The details of the project and the state of installation are mentioned in the table:-

Name of the SPVs	Capacity in MW	Connection with Grid	State	Usage of Electricity
Azure Power Jupiter Pvt Ltd	30	Indian Grid	Uttar Pradesh	Sale to grid
Azure Power Thirty Seven Pvt Ltd	100	Indian Grid	Telangana	Sale to grid
Azure Power Venus Pvt Ltd	40	Indian Grid	Uttar Pradesh	Sale to grid
Azure Power Thirty Six Pvt Ltd	50	Indian Grid	Andhra Pradesh	Sale to grid
Azure Power Thirty Three Pvt Ltd	260	Indian Grid	Gujarat	Sale to grid
Total	480 MW			

The commissioning details of the project are as follows:

S. No.	Name of the SPVs	Capacity (MW)	Commissioning Dates
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1.	Azure Power Jupiter Pvt Ltd	30	Site	Capacity (MW)	Commissioning Date
			Hardoi	20	19-September-2017
			Hamirpur	10	22-September-2017
2.	Azure Power Thirty Seven Pvt Ltd	100	12-January-2018		
3.	Azure Power Venus Pvt Ltd	40	14-April-2018		
4.	Azure Power Thirty Six Pvt Ltd	50	30-April-2018		
5.	Azure Power Thirty Three Pvt Ltd	260	Site	Capacity (MW)	Commissioning Date
			Dhari	35	02-November-2018
			Semali	30	10-December-2018
			Vadol	40	01-November-2018
			Netramali	40	07-March-2019
			Sanes	50	13-March-2019
			Muloj	40	22-February-2019
			Vartol	25	09-March-2019
Total		480			

The total AC capacity of the project activity is 480 MW and the power produced displaces an equivalent amount of power from the grid, which is fed mainly by fossil fuel fired power plants. Hence, it results in reduction of GHG emissions. GHG emission reductions from the project activity will be 852,639 tonnes of CO₂e and total GHG emission reductions for the chosen 10 year crediting period will be 8,526,390 tonnes of CO₂e.

The technical specifications of the plants are described below⁷:

1. Azure Jupiter Pvt Ltd (2 ×10 MW)

Details of Transformer

- Make: Schneider/Type: Inverter duty, Sr. No.: TBI/8092872/5, TBI/8092872/6, TBI/8092873/4

Details of Invertor

- Make: ABB/Type: Central, Sr. No.: 9171600389, 9171600400, 9171600402, 9171600390, 9171600397, 9171600401, 9171600407, 9171600392, 9171600399, 9171600391.

PV Modules

⁷ It is to be noted that in future there is possibility of change in module configuration of projects implemented; however total project capacity of each project will remain same as above.

- Hanwha Make of 320 Watt Peak, Total No. of Modules-62500

Azure Power Jupiter Pvt Ltd (10 MW)

Details of solar inverter station (Invertor cum transformer unit)-

- 3 nos. of transformers with Sr. No: TBI/8092872/5, TBI/8092872/6, TBI/8092873/4
- 10 nos. of invertors, Make: ABB/Type: Central. Sr. No. of are 9171600403, 9171600393, 9171600395, 9171600404, 9171600408, 9171600396, 9171600405, 9171600394, 9171600406, 91733600099.

PV Modules

- Hanwha Solar 315 Wp, Total No. of Modules-31800

2. Azure Power Thirty Seven Pvt Ltd

Details of solar inverter station (Invertor cum transformer unit)-

- 20 nos. of 4 MVA transformers, 33/0.400/0.400/0.400kV, Sr. No: 891022/01 to 891022/20
- 10 nos. of 2 MVA Transformers, 33/0.400/0.400 kV, Sr. No.:8191023/01 to 8191023/10
- Invertor description-Make: ABB, Rating-1 MW, Sr. No: 9172200416, 9172200418, 9172200419, 9172200420, 9172200580, 9172200577, 9172200579, 9172200583, 9172200584, 9172200586, 9172200422, 9172200423, 9172200424, 9172200425, 9172200426, 9172200562, 9172200563, 9172200564, 9172200565, 9172200566, 9172200567, 9172200568, 9172200569, 9172200570, 912200571, 9172200276, 9172200588 to 9172200597, 9172300277, 9172200278, 9172300279, 9172400091 to 9172400101, 91724001421, 9172001400 to 9172001425, 91722005572 to 9172200576, 9172400103, 9172400104, 9172400109, 9172400112, 9172400117 to 9172400125, 9172001436 to 9172001440, 9172001411 to 9172001420, 9172001426 to 9172001435 .

PV Modules-

- Make-Chint Solar, 320 Wp-36.0 MWp-112500 nos. 325 Wp-23.99 MWp-73819 nos.
- Make-Risen Solar, 320 Wp-23.95 MWp-74869 nos. 325 Wp-16.22 MWp-49920 nos.

3. Azure Power Venus Pvt Ltd

Details of solar inverter station (Invertor cum transformer unit)-

- Invertor description-Make: ABB and Schneider Electric, Number of invertors-24 nos.

PV Modules-

- Make-Hanwha SolarOne, Hanwha Q Cells, 320 Wp/HSL 72 P6-PC-1-320 at 1000 V, 320 Wp/ Q.POWER L-G5.2 320 at 1500V , Number of modules-148020 nos.

4. Azure Power Thirty Six Pvt Ltd

PV Modules-

- Make- Hanwha Q Cells,
320 Wp, 1000V= 31200 Nos
325 Wp, 1000V= 96080 Nos
325 Wp, 1500V=36480 Nos
330 Wp, 1000V= 18600 Nos
Total Power= 59.204 MWp (DC)
=50 MW (AC)

Inverters:

- Make- ABB India Ltd & TBEA,
- Ratings: 1732 KW, 1000 KW and 2500 KW
- Quantity: 1732-23 Nos, 1000 KW, 2500 KW- 4 Nos.

Transformers:

- **Current Transformer**
 - Make: ECS
 - Quantity: 06
 - S. No.: R Ph-17/045084, Y Ph- 17/045083, B Ph - 17/045082, R Ph- 17/045087, Y Ph- 17/045086, B Ph- 17/045085
 - Ratio: 500-1000/1A, 5 VA, CL 0.2S
- **Potential Transformer**
 - Make: ECS
 - Quantity: 6
 - S. No.: R Ph- 17/014965, Y Ph- 17/014964, B Ph- 17/014963, R Ph - 17/014968, Y Ph- 17/014967 and B Ph - 17/014966
 - Ratio: (33KV/ $\sqrt{3}$)(110V/ $\sqrt{3}$), 50VA, Cl 0.2s

5. Azure Power Thirty Three Pvt Ltd

Location	Technical Specifications
Dhari	• SPV Modules- Type/Make: Polycrystalline/GCL, Talesun, Risen • Number of photovoltaic modules/Rating: 61440/330 Wp, 66240/325 Wp, 7680/335 Wp • Inverters-Type/Make: Central/Schneider • Nos. of inverter/Rating-17/2 MW, 2/0.68 MW
Semaliya	• SPV Modules-Type/Make: Polycrystalline/Risen, Talesun • Number of Photovoltaic modules/Rating: 48300/325 Wp, 67620/330 Wp

	- Inverters-Type/Make: Central/TMEic - Numbers of inverter/Rating-12/2.55 MW
Vadol	- SPV Modules-Type/Make: Polycrystalline/GCL, Talesun, Risen - Number of Photovoltaic modules/Rating: 38640/330 Wp, 19320/325 Wp - Inverters-Type/Make: Central/TMEic - Numbers of inverter/Rating-06/2.55 MW
Netramali	- SPV Modules-Type/Make: Polycrystalline/Waaree Solar - Number of Photovoltaic modules/Rating: 22800/325 Wp, 160800/330 Wp - Inverters-Type/Make: Central/TMEic - Numbers of inverter/Rating-16/2.5 MW
Sanes	- SPV Modules-Type/Make: Polycrystalline/Waaree - Number of Photovoltaic modules/Rating: 912160/325 Wp, 136800/330 Wp - Inverters-Type/Make: Central/TMEic - Numbers of inverter/Rating-20/2.5 MW
Muloj	- SPV Modules-Type/Make: Polycrystalline/Waaree, Talesun, Risen, JA Solar - Number of Photovoltaic modules/Rating: 80640/325 Wp, 102600/330 Wp - Inverters-Type/Make: Central/TMEic - Numbers of inverter/Rating-16/2.5 MW
Vartol	- SPV Modules-Type/Make: Polycrystalline/Talesun, GCL - Number of Photovoltaic modules/Rating: 34560/325 Wp, 11520/330 Wp - Inverters-Type/Make: Central/TMEic - Numbers of inverter/Rating-04/2.55 MW
	- SPV Modules-Type/Make: Polycrystalline/Talesun - Number of Photovoltaic modules/Rating: 57960/325 Wp - Inverters-Type/Make: Central/TMEic - Numbers of inverter/Rating-06/2.55 MW

There has been no major downtime of equipment's, overhaul times or exchange of equipment's in the project activity during the current monitoring period. The project underwent scheduled breakdown and maintenance during the monitoring period. The project is in continuous operation since commissioning.

Total emission reductions achieved in this monitoring period:

During the Current Monitoring Period from 01-March-2020 to 31-December-2020 (First and last date included) the project activity has contributed 733,563 tCO_{2e} GHG reductions.

3.2 Deviations

3.2.1 Methodology Deviations

There is no request for deviation applied during this monitoring period

3.2.2 Project Description Deviations

Deviation 1:

This deviation is a monitoring deviation applicable only to Azure Power Thirty Six Pvt Ltd (50 MW) located at Andhra Pradesh. The monitoring practice is updated (November 2018) and its shifted to Deviation Settlement Mechanism (DSM) in order to more strengthen the national grid. The export and import values are omitted. In DSM, PP have to forecast energy generation in a day time block (In India, 15 minutes each, total 96 blocks) well in advance. The invoicing is done on the forecasted value. The actual generation deviation from the forecasted values is penalized, it depends upon the deviation magnitude. Therefore instead of export and import values, the net values is directly obtained for the emission reduction calculation.

Total Energy schedule and the Actual values (which is the actual Net delivered) is maintained by the Southern Regional Power Committee (SRPC) Secretariat, Central Electricity Authority, Government of India. Regional Energy Account (monthly net export) for the every month in respect of Southern Region has been uploaded on the SRPC website, www.srpc.kar.nic.in. Since the document is provided by government nodal agency, therefore no any cross-checking is required.

The nature of deviation is permanent and has already been approved during previous verification.

3.3 Grouped Projects

This project activity is not a grouped project activity

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	EF _{grid,OMsimple,y}
Data unit	tCO ₂ /MWh
Description	Operating margin CO ₂ emission factor of in year y
Source of data	Calculated from CEA database, Version 14, December 2018 ⁸
Value applied	0.9610
Justification of choice of data or description of measurement methods and procedures applied	Calculated as per “Tool to calculate the emission factor for an electricity system, version 07” as 3-year generation weighted average using data for the years 2015-2016, 2016-2017 & 2017-2018. The data are obtained from “CO ₂ Baseline Database for Indian Power Sector” version 14, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of Data	For the calculation of the Baseline Emission

⁸ http://cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver14.pdf

Comments	This parameter is fixed ex-ante for the entire crediting period.
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Data / Parameter	$EF_{grid,BM,y}$
Data unit	tCO ₂ /MWh
Description	Build Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 14, December 2018 ⁸
Value applied	0.8644
Justification of choice of data or description of measurement methods and procedures applied	Calculated as per “Tool to calculate the emission factor for an electricity system, version 07” as per the latest data available for the most recent year 2018. The data is obtained from “CO ₂ Baseline Database for Indian Power Sector” version 14, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of Data	For the calculation of the Baseline Emission
Comments	This parameter is fixed ex-ante for the entire crediting period.

Data / Parameter	$EF_{grid,CM,y}$
Data unit	tCO ₂ /MWh
Description	Combined Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 14, December 2018 ⁸
Value applied	0.9368
Justification of choice of data or description of measurement methods and procedures applied	The combined margin emissions factor is calculated as follows: $EF_{grid,CM,y} = EF_{grid,OM,y} * W_{OM} + EF_{grid,BM,y} * W_{BM}$ Where: $EF_{grid,BM,y}$ = Build margin CO₂ emission factor in year y (tCO₂/MWh) $EF_{grid,OM,y}$ = Operating margin CO₂ emission factor in year y (tCO₂/MWh) W_{OM} = Weighting of operating margin emissions factor (%) = 75% W_{BM} = Weighting of build margin emissions factor (%) = 25% Calculated as per “Tool to calculate the emission factor for an electricity system, version 07.0.0”. The data is obtained from “CO₂ Baseline Database for Indian Power Sector” Version 14, December 2018, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of Data	For the calculation of the Baseline Emission
Comments	This parameter is fixed ex-ante for the entire crediting period.

4.2 Data and Parameters Monitored

Data / Parameter	$EG_{facility,y}$
Data unit	MWh

Description	Quantity of net electricity generation supplied by the project (Solar) plant/unit to the grid during the monitoring period
Source of data	Credit note/ JMR/Form B reports/ monthly generation report from respective state electricity board/DISCOM
Description of measurement methods and procedures to be applied	Data Type: Measured Monitoring equipment: Energy Meters Archiving Policy: Paper & Electronic Class of meter: 0.2s. Calibration frequency: One in five years⁹ The value of net electricity generation supplied to the grid as per Monthly electricity form B-Form /Credit Note or Joint Meter Reading Report forms the basis for calculation of the emission reductions; which can be cross checked from the invoice raised to DISCOM. Net electricity supplied to grid is calculated as the difference of the measured values of “export” and “import” of electricity through the dedicated SEB energy meter installed at the delivery point. Monthly meter readings are taken from the main and check meter installed at metering point and certified by the representatives of SEB Officials and the representatives of the project proponent for apportioning procedure refer section 4.3
Frequency of monitoring/recording	Continuous monitoring and monthly recording
Value monitored	783,055
Monitoring equipment	Monitoring equipment are energy meters installed at each of the project activity site. Readings can be cross checked with back up meter. The accuracy class of meters, calibration frequency of meters is totally under purview of state electricity board and PP do not have any control on it
QA/QC procedures to be applied	The calibration of all the meters are undertaken at required intervals (once is five years as per CEA notification) and faulty meters are duly replaced immediately. The meters will be of accuracy class 0.5 or more. The meter accuracy class and calibration interval is under purview of state electricity board and PP do not have any control on it. It is also noted that apportioning procedure is under control of state electricity board and PP do not have any control on it. The available parameter to

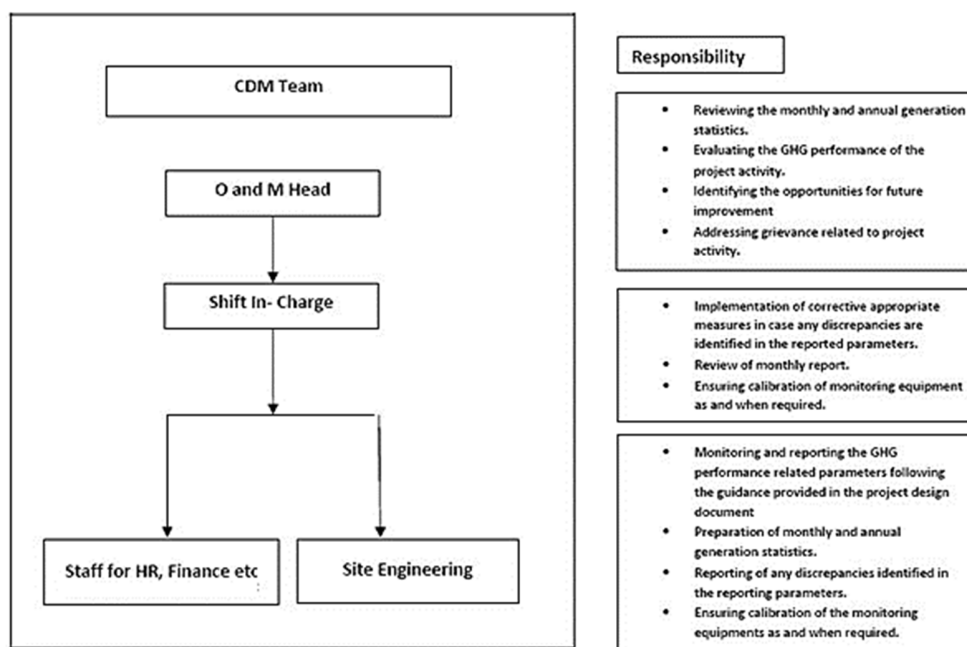
⁹ http://www.aegcl.co.in/Metering_Regulations_Of_CEA_17_03_2006.pdf

	PP is the net electricity supplied to grid and same parameter is mentioned as monitoring parameter.
Purpose of the data	The Net electricity exported to the grid is cross checked against the invoice raised by the PP towards the DISCOM Calculation of Baseline emissions
Calculation method	The parameter is measured and if any calculation is required, the calculation is based on measured parameters.
Comments	The data would be archived electronically and maintained for the entire crediting period plus two years.

4.3 Monitoring Plan

The monitoring plan is developed in accordance with the modalities and procedures for CDM project activities and is proposed for grid-connected solar power project. The monitoring plan, which will be implemented by the project participant describes about the monitoring organisation, parameters to be monitored, monitoring practices, quality assurance, quality control procedures, data storage and archiving.

The authority and responsibility for registration, monitoring, measurement, reporting and reviewing of the data rests with the project participant. PP has implemented the following structure for data monitoring, collection, data archiving and calibration of equipments for this project activity. The team comprises of the following members:



Data Measurement

The export and import energy is measured continuously using above mentioned Main and Check meters located at the substations. Readings of meters shall be taken on monthly basis by authorized officer of SEB in the presence of PP or representative of PP. Based on the Meter Reading Statement, invoices are raised. These invoices can be used for cross checking the meter readings taken for the respective project activity.

Data collection and archiving

Readings from meters are collected in the presence of the plant in-charge. Export and Import data is recorded and stored in logs as well as in electronic form on a daily basis. The records are checked periodically by the Plant Manager and discussed thoroughly with the plant supervisor. The period of storage of the monitored data will be 2 years after the end of crediting period or till the last issuance of VERs for the project activity whichever occurs later.

Emergency preparedness

The project activity have not resulted in any unidentified activity that can result in substantial emissions from the project activity. No need for emergency preparedness in data monitoring is visualized.

Personnel training

In order to ensure a proper functioning of the project activity and a properly monitoring of emission reductions, the staff is trained. The plant helpers are also trained in equipment operation, data recording, reports writing, operation and maintenance and emergency procedures in compliance with the monitoring plan.

The schematic location of the metering arrangement at respective sites are depicted below:

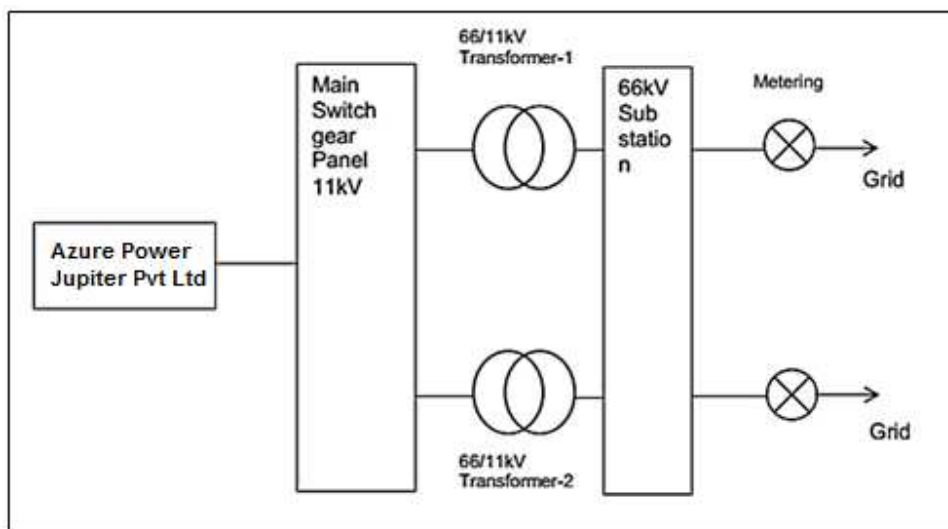


Figure 1. Azure Power Jupiter Pvt Ltd

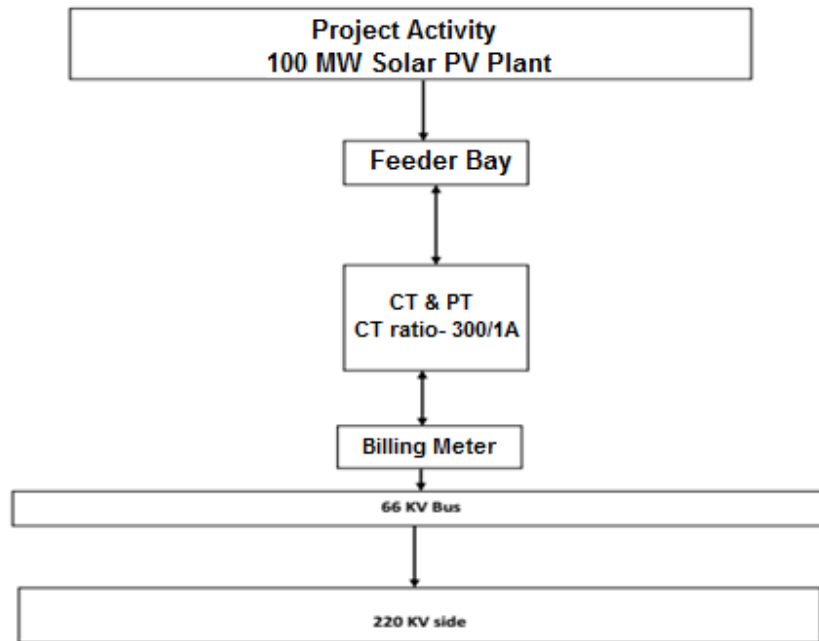


Figure 2. Metering arrangement for Azure Power Thirty Seven Pvt. Ltd.

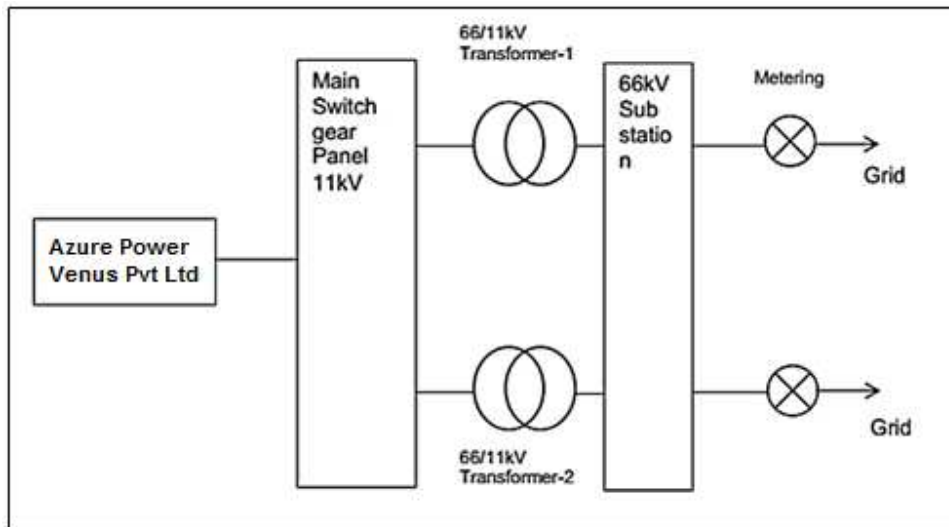


Figure 3. Metering arrangement for Azure Power Venus Pvt Ltd

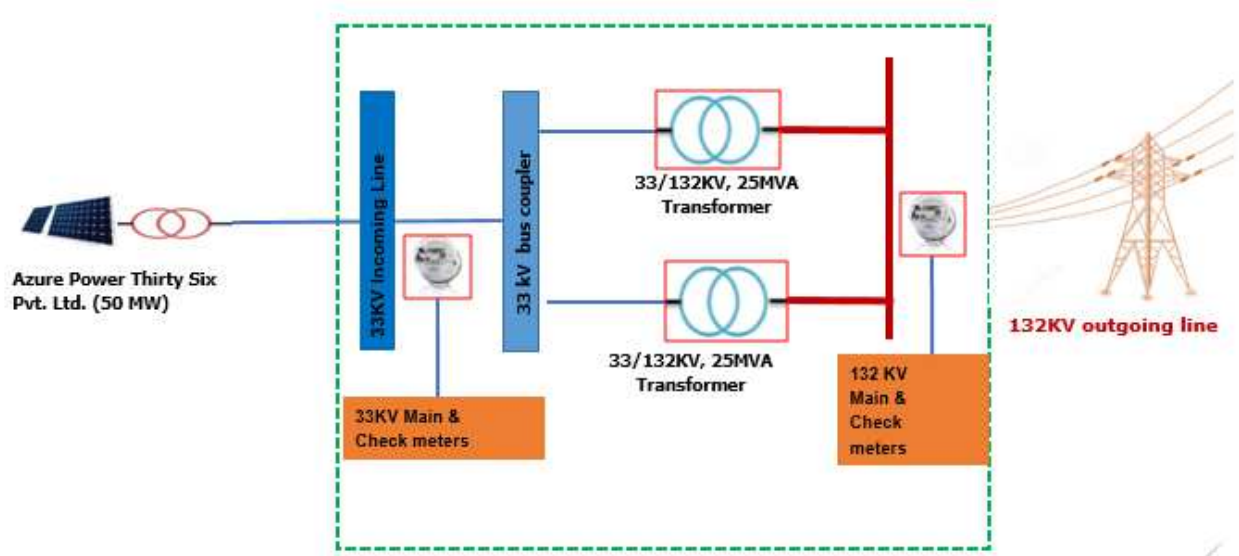


Figure 4. Metering arrangement for Azure Power Thirty Six Pvt. Ltd.

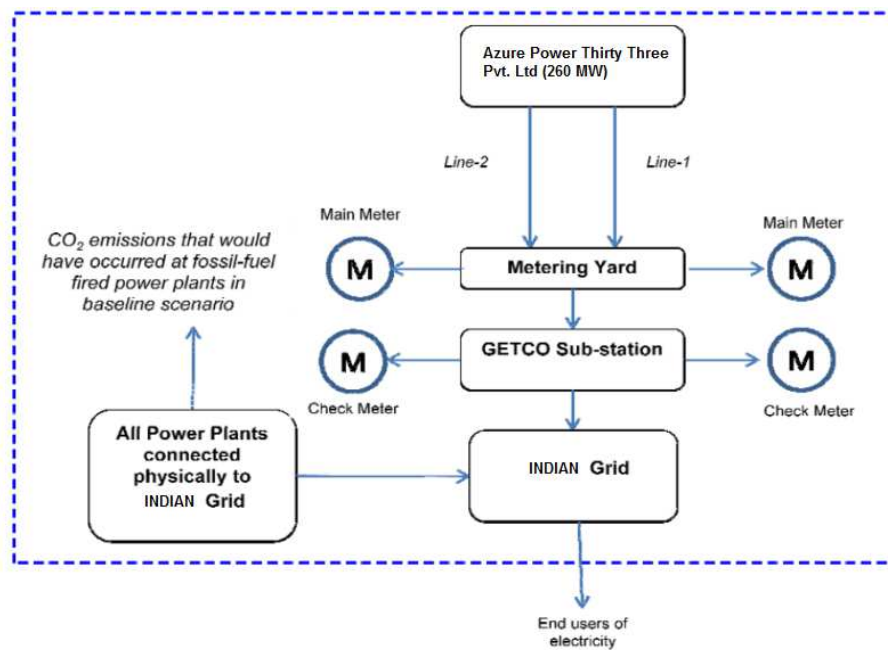


Figure 5. Metering arrangement for Azure Power Thirty Three Pvt. Ltd.

Refer Appendix 1 for meter and calibration details.

The location of billing meters and the connected substation are tabulated below:

Name of the SPVs	Site	Capacity (MW)	Main Meter Details	Check Meter Details	Billing Energy Meter Location	Connected Substation
Azure Power Jupiter Pvt Ltd	Hardoi	20	SL. No. : UP-0015E ¹⁰ Make: EDM I Accuracy class: 0.2 s	SL. No. : UP-0015E ¹¹ Make: EDM I Accuracy class: 0.2 s	132KV Grid Substation, SRI MAU, Hardoi	SRI MAU, Hardoi
			SL. No. : UP-0202-A Make: L&T Accuracy class: 0.2 s	SL. No. : UP-0203-A Make: L&T Accuracy class: 0.2 s		
	Hamirpur	10	SL. No. : 0015197361 Make: L&T Accuracy class: 0.2 s	SL. No. : UP-0008-A Make: L&T Accuracy class: 0.2 s	132KV Grid Substation, Hamirpur	Patara Village, Hamirpur
Azure Power Thirty Seven Pvt Ltd	Rachu, Marchal and Veljal	100	SL. No. : APZ00498 Make: Secure Accuracy class: 0.2 s	SL. No. : APZ00499 Make: Secure Accuracy class: 0.2 s	220/132 KV SS Kalwakurthy	Rachur, Kalwakurthy, Nagarkurnool
Azure Power Venus Pvt Ltd	Dakore	40	Aata Substation Circuit-I Main Meter SL. No. : UP3383A Make: Secure Accuracy class: 0.2 s Aata Substation Circuit-II Main Meter: SL. No. : UP3381A	Aata Substation Circuit-I Check Meter: SL. No. : UP3384A Make: Secure Accuracy class: 0.2 s Aata Substation Circuit-II Check Meter: SL. No. : UP3382A Make: Secure Accuracy class: 0.2 s	400 KV, Bhadrikhi Substation, Orai, Uttar Pradesh	Bhadrikhi

¹⁰ Meter change on 01-03-2019 for both main and check meter

¹¹ Meter change on 01-03-2019 for both main and check meter

Name of the SPVs	Site	Capacity (MW)	Main Meter Details	Check Meter Details	Billing Energy Meter Location	Connected Substation
			Make: Secure Accuracy class: 0.2 s			
Azure Power Thirty Six Pvt Ltd	Anantpuram	50	SL. No. : APZ00507 Make: Secure Accuracy class: 0.2 s	SL. No. : APZ00508 Make: Secure Accuracy class: 0.2 s	Anantppuram ultra mega Solar Park, Veligallu & Tumkunta Galiveedu, Kadapa	Veljal
Azure Power Thirty Three Pvt Ltd	Dhari	35	SL. No. : GJ-3977-A Make: EDM I Accuracy class: 0.2 s	SL. No. : GJ-3979-A Make: EDM I Accuracy class: 0.2 s	Energy Meter- At plant switchyard	Chidra
	Semaliya	30	SL. No. : GJ-4049-A Make: EDM I Accuracy class: 0.2 s	SL. No. : GJ-4050-A Make: EDM I Accuracy class: 0.2 s	Energy Meter- At plant Switchyard	In D block Semaliya
	Vadol	40	SL. No. : GJ-3980-A Make: EDM I Accuracy class: 0.2 s	SL. No. : GJ-3981-A Make: EDM I Accuracy class: 0.2 s	Energy Meter- At Plant Switchyard	Malitadi
	Netramali	40	SL. No. : GJ-4095-A Make: EDM I Accuracy class: 0.2 s	SL. No. : GJ-4096-A Make: EDM I Accuracy class: 0.2 s	Energy Meter- At Plant Switchyard	Malitadi
	Sanes	50	SL. No. : GJ-4145-A Make: EDM I Accuracy class: 0.2 s	SL. No. : GJ-4146-A Make: EDM I Accuracy class: 0.2 s	Energy Meter- At Plant Switchyard.	Sanes
	Muloj	40	SL. No. : GJ-4093-A Make: EDM I	SL. No. : GJ-4094-A Make: EDM I	Energy Meter- At plant Switchyard	Sinavad

Name of the SPVs	Site	Capacity (MW)	Main Meter Details	Check Meter Details	Billing Energy Meter Location	Connected Substation
			Accuracy class: 0.2 s	Accuracy class: 0.2 s		
	Vartol	25	SL. No. : GJ-4047-A Make: EDM I Accuracy class: 0.2 s	SL. No. : GJ-4048-A Make: EDM I Accuracy class: 0.2 s	Energy Meter- At Plant Switchyard	Vartol (300m away from plant)

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

The baseline emission calculation for the project activity is attributable to the CO₂ Emission that could have been produced by the fossil fuel based power plants in absence of the project activity. Therefore the amount electricity supplied to the Indian grid is multiplied by the grid emission factor of Indian grid to calculate the baseline emissions reduced by the project activity.

$$BE_y = EG_{\text{facility},y} \times EF_{\text{grid},CM,y}$$

Where,

BE_y	=	Baseline Emissions in year y; tCO ₂
EG_{facility,y}	=	Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh)
EF_{grid,CM,y}	=	CO ₂ emission factor of the grid in year y; tCO ₂ /MWh

Thus,

$$\begin{aligned}
 BE_y &= 783,055 * 0.9368 \\
 &= 733,563 \text{ tCO}_2\text{e (round down values)}
 \end{aligned}$$

5.2 Project Emissions

As per methodology ACM0002 Version 19.0, for renewable energy projects, there is no any project emissions occurred.

Hence, PE_y= 0

5.3 Leakage

As per methodology ACM0002 Version 19.0, for renewable energy projects, there is no any leakage emissions occurred.

Hence, $LE_y = 0$

5.4 Net GHG Emission Reductions and Removals

The net emission reduction would be:

$$\begin{aligned} ER_y &= BE_y - PE_y - LE_y \\ &= 733,563 - 0 - 0 \\ &= 733,563 \text{ tCO}_2\text{e} \end{aligned}$$

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
01-March-2020 to 31-December-2020	733,563	0	0	733,563
Total	733,563	0	0	733,563

Considering the annual average emission reductions as per the registered PDD which is 852,639 tCO₂e per year, the number of days covered during the current monitoring period comes out to be 306 days, based upon which the estimated emission reductions attributed to this monitoring period comes out to be 714,815 tCO₂e values whereas the actual emission reductions achieved during the current monitoring period is 733,563. The actual VER is 2.62% higher than the estimated VER. This variation is majorly due to the variations in capacity utilization factor which is beyond the control of PP. It is to be noted that due to the higher generation during the current monitoring period, does not impact on the additionality and the IRR is still below the benchmark value.

APPENDIX 1: CALIBRATION DETAILS

Metering arrangement, monitoring practice, accuracy class, calibration frequency are under control of state electricity board, the PP do not have any control on monitoring practice and calibration of meters. Being Green field project activity and commissioned within 2 years, all meters are used for monitoring purpose are pre calibrated before installation as per state electricity board regulations, thus installed pre calibrated meters have validity of calibration till 5 years of commissioning date.

The Energy Meters details used for the respective SPV are tabulated below:

Name of the SPVs	Site	Capacity (MW)	Main Meter Details	Check Meter Details	Calibration Date ¹²	Due date
Azure Power Jupiter Pvt Ltd	Hardoi	20	SL. No. : UP-0202-A Make: L&T Accuracy class: 0.2 s	SL. No. : UP-0203-A Make: L&T Accuracy class: 0.2 s	01-March-2019	29-March-2024
	Hamirpur	10	SL. No. : 0015197361 Make: L&T Accuracy class: 0.2 s	SL. No. : UP-0008-A Make: L&T Accuracy class: 0.2 s	22-September-2017	21-September-2022
Azure Power Thirty Seven Pvt Ltd	Rachu, Marcha I and Veljal	100	SL. No. : APZ00498 Make: Secure Accuracy class: 0.2 s	SL. No. : APZ00499 Make: Secure Accuracy class: 0.2 s	12-January-2018	11-January-2023
Azure Power Venus Pvt Ltd	Dakore	40	Aata Substation Circuit-I Main Meter SL. No. : UP3383A Make: Secure Accuracy class: 0.2 s Aata Substation Circuit-II Main Meter: SL. No. : UP3381A Make: Secure Accuracy class: 0.2 s	Aata Substation Circuit-I Check Meter: SL. No. : UP3384A Make: Secure Accuracy class: 0.2 s Aata Substation Circuit-II Check Meter: SL. No. : UP3382A Make: Secure Accuracy class: 0.2 s	01-December-2018	30-November-2023

¹² As Project is greenfield, meters installed for all SPVs were pre-calibrated.

Name of the SPVs	Site	Capacity (MW)	Main Meter Details	Check Meter Details	Calibration Date ¹²	Due date
Azure Power Thirty Six Pvt Ltd	Anantpuram	50	SL. No. : APZ00507 Make: Secure Accuracy class: 0.2 s	SL. No. : APZ00508 Make: Secure Accuracy class: 0.2 s	28-April-2018	27-April-2023
Azure Power Thirty Three Pvt Ltd	Dhari	35	SL. No. : GJ-3977-A Make: EDM Accuracy class: 0.2 s	SL. No. : GJ-3979-A Make: EDM Accuracy class: 0.2 s	02-November-2018	01-November-2023
	Semaliya	30	SL. No. : GJ-4049-A Make: EDM Accuracy class: 0.2 s	SL. No. : GJ-4050-A Make: EDM Accuracy class: 0.2 s	10-December-2018	09-December-2023
	Vadol	40	SL. No. : GJ-3980-A Make: EDM Accuracy class: 0.2 s	SL. No. : GJ-3981-A Make: EDM Accuracy class: 0.2 s	01-November-2018	31-October-2023
	Netramali	40	SL. No. : GJ-4095-A Make: EDM Accuracy class: 0.2 s	SL. No. : GJ-4096-A Make: EDM Accuracy class: 0.2 s	07-March-2019	06-March-2024
	Sanes	50	SL. No. : GJ-4145-A Make: EDM Accuracy class: 0.2 s	SL. No. : GJ-4146-A Make: EDM Accuracy class: 0.2 s	13-March-2019	12-March-2024
	Muloj	40	SL. No. : GJ-4093-A Make: EDM Accuracy class: 0.2 s	SL. No. : GJ-4094-A Make: EDM Accuracy class: 0.2 s	22-February-2019	21-February-2024
	Vartol	25	SL. No. : GJ-4047-A Make: EDM Accuracy class: 0.2 s	SL. No. : GJ-4048-A Make: EDM Accuracy class: 0.2 s	09-March-2019	08-March-2024

APPENDIX II: BREAKDOWN DETAILS

Azure Power Thirty Three Pvt Ltd

Date	Plant Name	Affected Time In Hrs	Reason of Fault
13-December-2020	Gujarat 2.1 40MW_Malaitadi	3:30	LV SEF earth fault in Power Transformer
15-October-2020	Gujarat 2.1 40MW_Malaitadi	0:37	Grid Overvoltage
15-October-2020	Gujarat 2.1 40MW_Malaitadi	0:35	Grid Under/over Voltage problem
15-October-2020	Gujarat 2.1 40MW_Malaitadi	0:26	Grid Under/over Voltage problem
15-October-2020	Gujarat 2.1 40MW_Malaitadi	0:13	Grid Under/over Voltage problem
14-August-2020	Gujarat 2.1 40MW_Malaitadi	19:45	Grid Under/over Voltage problem
14-August-2020	Gujarat 2.1 40MW_Malaitadi	20:00	Grid Under/over Voltage problem
11-June-2020	Gujarat 2.1 40MW_Malaitadi	5:43	Because of heavy lightning Stroke There is blast in R-phase LA(Bay-2) & its counter
11-June-2020	Gujarat 2.1 40MW_Malaitadi	4:15	Because of heavy lightning Stroke There is blast in R-phase LA(Bay-2) & its counter
10-June-2020	Gujarat 2.1 40MW_Malaitadi	2:46	Because of heavy lightning Stroke There is blast in R-phase LA(Bay-2) & its counter
09-May-2020	Gujarat 2.1 40MW_Malaitadi	1:16	Inverter breaker issue(Coil heating problem)
29-November-2020	Gujarat 2.2 35 Mw_ Chhidra	6:35	K205 Mismatch
09-November-2020	Gujarat 2.2 35 Mw_ Chhidra	6:18	firmware updating
07-November-2020	Gujarat 2.2 35 Mw_ Chhidra	2:01	firmware updating
19-July-2020	Gujarat 2.2 35 Mw_ Chhidra	12:30	Multiple Events
14-July-2020	Gujarat 2.2 35 Mw_ Chhidra	13:00	RMU 1 Cable fault
14-July-2020	Gujarat 2.2 35 Mw_ Chhidra	13:00	RMU 1 Cable fault
14-July-2020	Gujarat 2.2 35 Mw_ Chhidra	13:00	RMU 1 Cable fault
14-July-2020	Gujarat 2.2 35 Mw_ Chhidra	13:00	RMU 1 Cable fault
13-July-2020	Gujarat 2.2 35 Mw_ Chhidra	13:00	RMU 1 Cable fault
13-July-2020	Gujarat 2.2 35 Mw_ Chhidra	13:00	RMU 1 Cable fault
13-July-2020	Gujarat 2.2 35 Mw_ Chhidra	13:00	RMU 1 Cable fault
13-July-2020	Gujarat 2.2 35 Mw_ Chhidra	13:00	RMU 1 Cable fault
30-June-2020	Gujarat 2.2 35 Mw_ Chhidra	2:00	B Phase Bushing Failure
29-June-2020	Gujarat 2.2 35 Mw_ Chhidra	3:45	B Phase Bushing Failure
29-June-2020	Gujarat 2.2 35 Mw_ Chhidra	0:30	RMU 1(B - Phase Bushing Failure)
18-June-2020	Gujarat 2.2 35 Mw_ Chhidra	11:14	Transformer B Phase Voltage issues and Higher Gauge cable issues
24-May-2020	Gujarat 2.2 35 Mw_ Chhidra	3:45	IMD ISSUES

18-June-2020	Gujarat 2.3 30 Mw_ GABAT	1:33	PT fuse fail in ICR-3
18-June-2020	Gujarat 2.3 30 Mw_ GABAT	2:45	PT fuse fail in ICR-3
18-June-2020	Gujarat 2.3 30 Mw_ GABAT	1:33	PT fuse fail in ICR-3
18-June-2020	Gujarat 2.3 30 Mw_ GABAT	4:18	PT fuse fail in ICR-3
24-April-2020	Gujarat 2.3 30 Mw_ GABAT	4:45	30 Mva Power Transformer LV Side cAble issues
24-April-2020	Gujarat 2.3 30 Mw_ GABAT	5:45	30 Mva Power Transformer LV Side cAble issues
24-April-2020	Gujarat 2.3 30 Mw_ GABAT	2:45	30 Mva Power Transformer LV Side cAble issues
24-April-2020	Gujarat 2.3 30 Mw_ GABAT	5:00	30 Mva Power Transformer LV Side cAble issues
24-April-2020	Gujarat 2.3 30 Mw_ GABAT	5:59	30 Mva Power Transformer LV Side cAble issues
23-April-2020	Gujarat 2.3 30 Mw_ GABAT	9:25	11kv outgoing Y phase joint kit Damaged
22-August-2020	Gujarat 2.4 15 MW_ Vartol	22:49	P141 Relay Operated
22-August-2020	Gujarat 2.4 15 MW_ Vartol	19:17	P141 Relay Operated
21-August-2020	Gujarat 2.4 15 MW_ Vartol	22:01	AC cable damages
21-August-2020	Gujarat 2.4 15 MW_ Vartol	19:22	P141 Relay Operated
07-July-2020	Gujarat 2.4 15 MW_ Vartol	0:43	Grid Voltage up
08-June-2020	Gujarat 2.4 15 MW_ Vartol	4:30	IGBT Failure
07-June-2020	Gujarat 2.4 15 MW_ Vartol	13:00	IGBT Failure
06-June-2020	Gujarat 2.4 15 MW_ Vartol	13:00	IGBT faulty
11-December-2020	Gujarat 2.5 40 MW_ Sanivada	1:09	HV SEF (IA 0.00A,IB 0.00A,IC 0.00A,IN432.00A)
27-November-2020	Gujarat 2.5 40 MW_ Sanivada	0:38	UF 406- IGBT Over Temp.1
09-October-2020	Gujarat 2.5 40 MW_ Sanivada	4:46	CAPACITOR BLAST AND IGBT FAILURE.
08-October-2020	Gujarat 2.5 40 MW_ Sanivada	1:34	CAPACITOR BLAST AND IGBT FAILURE.
23-August-2020	Gujarat 2.5 40 MW_ Sanivada	22:52	V AB-72.59 KV,V BC- 72.45 KV,V CN- 71.82 KV,V N- 161.9 V
23-August-2020	Gujarat 2.5 40 MW_ Sanivada	18:40	Auto Trip-IA 136.00A,IB 0.00 A,IC 104.00A,IN 90.00A
22-August-2020	Gujarat 2.5 40 MW_ Sanivada	18:40	Earth Fault-(IA 84.00A,IB60.00A,IC0.00A,IN 126.80A)
18-July-2020	Gujarat 2.5 40 MW_ Sanivada	4:30	Not Restart Auto (My Be Software Issue)
13-July-2020	Gujarat 2.5 40 MW_ Sanivada	4:15	IGBT 01 Resistor Faulty
12-July-2020	Gujarat 2.5 40 MW_ Sanivada	1:15	(Reaped Fault (AC Circuit Error)
29-June-2020	Gujarat 2.5 40 MW_ Sanivada	0:45	O/c
27-May-2020	Gujarat 2.5 40 MW_ Sanivada	7:32	No.F 3 Capacitor Failure & No.Of 03 Fuse Blow ,690v 1100Amp

26-May-2020	Gujarat 2.5 40 MW_ Sanivada	2:00	Capacito Blast
15-May-2020	Gujarat 2.5 40 MW_ Sanivada	13:00	IGBT & Capacitor failure
14-May-2020	Gujarat 2.5 40 MW_ Sanivada	13:00	IGBT & Capacitor failure
13-May-2020	Gujarat 2.5 40 MW_ Sanivada	13:00	IGBT & Capacitor failure
12-May-2020	Gujarat 2.5 40 MW_ Sanivada	13:00	IGBT & Capacitor failure
11-May-2020	Gujarat 2.5 40 MW_ Sanivada	12:45	O/c
29-April-2020	Gujarat 2.5 40 MW_ Sanivada	1:11	IGBT (RHS,Top) Fan Faulty
12-December-2020	Gujarat 2.7 50MW_SANES	0:13	Due to grid overvoltage fault.
04-December-2020	Gujarat 2.7 50MW_SANES	0:21	Due to grid overvoltage fault, did not auto start after grid down.
04-December-2020	Gujarat 2.7 50MW_SANES	0:24	Due to grid overvoltage fault, did not auto start after grid down.
16-July-2020	Gujarat 2.7 50MW_SANES	1:44	AC Breaker Circuit error
22-June-2020	Gujarat 2.7 50MW_SANES	2:23	AC Breaker Circuit error
21-June-2020	Gujarat 2.7 50MW_SANES	2:07	AC Breaker Circuit error
13-June-2020	Gujarat 2.7 50MW_SANES	3:55	AC Breaker Circuit error
02-June-2020	Gujarat 2.7 50MW_SANES	4:05	Transformer tripped on buchholz relay due to oil reached below buchholz relay due to leakage from NIPFT panel.
24-May-2020	Gujarat 2.7 50MW_SANES	1:42	PRV Operate
09-April-2020	Gujarat 2.7 50MW_SANES	2:10	Grid down in morning from GSS Valbhipur line on earth fault, so sf-6 breaker also get tripped on Earth fault, due to current unbalance.

Azure Power Thirty Six Pvt Ltd

Date	Plant Name.	Affected time	Reason
03-April-2020	AP3_(ANANTHAPURAMU 50MW)	3:15	TB Failure,16 A fuse gone
09-May-2020	AP3_(ANANTHAPURAMU 50MW)	4:00	TB Failure,16 A fuse gone
16-May-2020	AP3_(ANANTHAPURAMU 50MW)	11:00	Due to Dam water beside our plant increased drastically, For safety concern we have down respective SCB
07-June-2020	AP3_(ANANTHAPURAMU 50MW)	11:00	Due to Dam water beside our plant increased drastically, For safety concern we have down respective SCB

08-June-2020	AP3_(ANANTHAPURAMU 50MW)	11:00	Due to Dam water beside our plant increased drastically, For safety concern we have down respective SCB
06-July-2020	AP3_(ANANTHAPURAMU 50MW)	11:00	Due to Dam water beside our plant increased drastically, For safety concern we have down respective SCB
10-July-2020	AP3_(ANANTHAPURAMU 50MW)	11:00	Due to Dam water beside our plant increased drastically, For safety concern we have down respective SCB
20-July-2020	AP3_(ANANTHAPURAMU 50MW)	11:00	Due to Dam water beside our plant increased drastically, For safety concern we have down respective SCB
12-August-2020	AP3_(ANANTHAPURAMU 50MW)	11:00	Due to Dam water beside our plant increased drastically, For safety concern we have down respective SCB
30-August-2020	AP3_(ANANTHAPURAMU 50MW)	11:00	Due to Dam water beside our plant increased drastically, For safety concern we have down respective SCB
03-September-2020	AP3_(ANANTHAPURAMU 50MW)	11:00	Due to Dam water beside our plant increased drastically, For safety concern we have down respective SCB
04-September-2020	AP3_(ANANTHAPURAMU 50MW)	11:00	Due to Dam water beside our plant increased drastically, For safety concern we have down respective SCB
05-September-2020	AP3_(ANANTHAPURAMU 50MW)	11:00	Due to Dam water beside our plant increased drastically, For safety concern we have down respective SCB
17-October-2020	AP3_(ANANTHAPURAMU 50MW)	11:00	Due to Dam water beside our plant increased drastically, For safety concern we have down respective SCB
18-October-2020	AP3_(ANANTHAPURAMU 50MW)	11:00	Due to Dam water beside our plant increased drastically, For safety concern we have down respective SCB

22-November-2020	AP3_(ANANTHAPURAMU 50MW)	11:00	Due to Dam water beside our plant increased drastically, For safety concern we have down respective SCB
02-December-2020	AP3_(ANANTHAPURAMU 50MW)	11:00	Due to Dam water beside our plant increased drastically, For safety concern we have down respective SCB
03-December-2020	AP3_(ANANTHAPURAMU 50MW)	11:00	Due to Dam water beside our plant increased drastically, For safety concern we have down respective SCB
04-December-2020	AP3_(ANANTHAPURAMU 50MW)	11:00	Due to Dam water beside our plant increased drastically, For safety concern we have down respective SCB
28-December-2020	AP3_(ANANTHAPURAMU 50MW)	11:00	Due to Dam water beside our plant increased drastically, For safety concern we have down respective SCB
29-December-2020	AP3_(ANANTHAPURAMU 50MW)	11:00	Due to Dam water beside our plant increased drastically, For safety concern we have down respective SCB

Azure Power Venus Pvt Ltd

Date	Plant Name.	Affected time	Reason
16-November-2020	UP3_(DAKORE 40MW)	4:52	insulation resistance
27-October-2020	UP3_(DAKORE 40MW)	11:11	P111 relay malfunctioning
25-October-2020	UP3_(DAKORE 40MW)	11:00	IGBT Failure
24-October-2020	UP3_(DAKORE 40MW)	11:00	IGBT Failure
23-October-2020	UP3_(DAKORE 40MW)	11:00	IGBT Failure
22-October-2020	UP3_(DAKORE 40MW)	11:00	IGBT Failure
21-October-2020	UP3_(DAKORE 40MW)	11:00	IGBT Failure
20-October-2020	UP3_(DAKORE 40MW)	11:00	IGBT Failure
19-October-2020	UP3_(DAKORE 40MW)	11:00	IGBT Failure
18-October-2020	UP3_(DAKORE 40MW)	11:00	IGBT Failure
17-October-2020	UP3_(DAKORE 40MW)	5:00	IGBT Failure
17-October-2020	UP3_(DAKORE 40MW)	6:15	IGBT Failure
17-October-2020	UP3_(DAKORE 40MW)	6:30	IGBT Failure
17-October-2020	UP3_(DAKORE 40MW)	4:45	IGBT Failure
17-October-2020	UP3_(DAKORE 40MW)	12:15	inverter burnt

06-August-2020	UP3_(DAKORE 40MW)	12:45	Inverter burnt
05-August-2020	UP3_(DAKORE 40MW)	12:30	inverter burnt
04-August-2020	UP3_(DAKORE 40MW)	12:00	Inverter burnt
03-August-2020	UP3_(DAKORE 40MW)	12:30	inverter burnt
02-August-2020	UP3_(DAKORE 40MW)	12:30	inverter burnt
31-July-2020	UP3_(DAKORE 40MW)	12:45	inverter burnt
30-July-2020	UP3_(DAKORE 40MW)	12:30	inverter burnt
29-July-2020	UP3_(DAKORE 40MW)	12:45	inverter burnt
28-July-2020	UP3_(DAKORE 40MW)	12:30	short circuit
27-July-2020	UP3_(DAKORE 40MW)	12:45	inverter burnt
27-July-2020	UP3_(DAKORE 40MW)	12:30	short circuit
26-July-2020	UP3_(DAKORE 40MW)	12:45	inverter burnt
26-July-2020	UP3_(DAKORE 40MW)	11:18	short circuit
25-July-2020	UP3_(DAKORE 40MW)	12:45	inverter burnt
25-July-2020	UP3_(DAKORE 40MW)	11:40	Inverter 3 of icr 1 burnt for safety purpose of other inverter and transformer Main vcb of icr was tripped
24-July-2020	UP3_(DAKORE 40MW)	12:45	inverter burnt
24-July-2020	UP3_(DAKORE 40MW)	4:40	GROUND FAULT
24-July-2020	UP3_(DAKORE 40MW)	5:36	inverter burnt
23-July-2020	UP3_(DAKORE 40MW)	5:34	Inverter 3 of icr 1 burnt for safety purpose of other inverter and transformer Main vcb of icr was tripped
23-July-2020	UP3_(DAKORE 40MW)	10:17	FLASH IN HT BUSHING OF INVERTER TRAFO
26-June-2020	UP3_(DAKORE 40MW)	12:00	IGBT burnt
08-April-2020	UP3_(DAKORE 40MW)	7:40	IGBT burnt

Azure Power Thirty Seven Pvt Ltd

Date	Plant Name	Affected Time In Hrs	Reason of Fault
08-July-2020	TG1.2_5x10MW Rachur_1	7.15	3CX240sqmm cable straight joint failed
15-July-2020	TG1.1_3x10MW Marchala	0.15	120Sqmm Cable Joint failure
15-September-2020	TG1.2_5x10MW Rachur_1	1.45	cable joint problem
15-September-2020	TG1.2_5x10MW Rachur_1	5.3	cable joint problem
16-August-2020	TG1.1_3x10MW Marchala	6.15	120Sqmm Cable Joint failure
16-August-2020	TG1.1_3x10MW Marchala	5.3	120Sqmm Cable Joint failure
16-August-2020	TG1.1_3x10MW Marchala	12	240 Sqmm Cable Joint failure
17-August-2020	TG1.1_3x10MW Marchala	12	240 Sqmm Cable Joint failure
18-August-2020	TG1.1_3x10MW Marchala	12	240 Sqmm Cable Joint failure
19-September-2020	TG1.1_3x10MW Marchala	7.3	cable joint problem
20-September-2020	TG1.1_3x10MW Marchala	4.3	cable joint problem
25-September-2020	TG1.1_3x10MW Marchala	11.3	cable joint problem

26-September-2020	TG1.1_3x10MW Marchala	11.3	cable joint problem
27-November-2020	TG1.2_5x10MW Rachur_1	1.45	ICR 8 PT End joint failure
27-November-2020	TG1.2_5x10MW Rachur_1	2.42	ICR 8 PT End joint failure
28-November-2020	TG1.2_5x10MW Rachur_1	4	ICR 8 PT End joint failure
28-November-2020	TG1.2_5x10MW Rachur_1	1.3	ICR 8 PT End joint failure
29-November-2020	TG1.1_3x10MW Marchala	2	cable joint problem
29-November-2020	TG1.3_2x10MW Veljala	0.3	ICR PT chamber End joint Failed
29-November-2020	TG1.3_2x10MW Veljala	3	ICR PT chamber End joint Failed
21-December-2020	TG1.1_3x10MW Marchala	2.75	B-Phase lug damage at G.O. Switch

Azure Power Jupiter Pvt Ltd

Date	Plant Name.	Affected Time	Reason
07-July-2020	UP 2.3_(10MW)	0:30	TRANSMISION LINE ISULATOR DAMAGE & CHANGE
13-July-2020	UP 2.3_(10MW)	0:15	TRANSMISION LINE
07-August-2020	UP 2.3_(10MW)	0:15	Main VCB trip.Due to under voltage
19-August-2020	UP 2.3_(10MW)	0:25	Main VCB trip.Due to Over current E/F
23-August-2020	UP 2.3_(10MW)	0:15	Main VCB trip.Due to Over current E/F
26-August-2020	UP 2.3_(10MW)	0:15	Main VCB trip.Due to Over current E/F
16-October-2020	UP 2.3_(10MW)	0:40	Main VCB trip.Due to Over current E/F
05-July-2020	UP 2.4_(10MW)	0:10	33 kV transmission Line Earth fault
13-July-2020	UP 2.4_(10MW)	0:15	33 kV transmission Line Earth fault
14-July-2020	UP 2.4_(10MW)	0:10	33 kV transmission Line Earth fault
05-August-2020	UP 2.4_(10MW)	0:55	Due to Under Voltage Tripping
11-August-2020	UP 2.4_(10MW)	0:20	Due to over current & earth fault
12-August-2020	UP 2.4_(10MW)	0:35	Due to over current & earth fault
26-August-2020	UP 2.4_(10MW)	0:15	Due to over current & earth fault
09-September-2020	UP 2.4_(10MW)	0:15	Due to over current & earth fault
13-September-2020	UP 2.4_(10MW)	0:40	Due to over current
12-September-2020	UP 2.4_(10MW)	0:15	Due to over current & earth fault
12-December-2020	UP 2.4_(10MW)	3:50	All Plant trip.Due to over current & earth fault
19-December-2020	UP 2.4_(10MW)	2:00	All Plant trip.Due to over current & earth fault
23-December-2020	UP 2.4_(10MW)	3:10	All Plant trip.Due to over current & earth fault

17-May-2020	UP 2.5(10MW)	1:45	Pole Number 26 V-Cross Bend, Pole Number 50 Jumper Burn & Pole Number 345 Conductor Broken
09-July-2020	UP 2.5(10MW)	6:45	transmission line fault Insulator failure
10-July-2020	UP 2.5(10MW)	10:10	33 kV transmission Line fault (Pin insulator failure)

20-July-2020	UP 2.5(10MW)	11:15	transmission line fault Insulator failure
27-August-2020	UP 2.5(10MW)	1:35	Straight joint failure due to which 2MW down