



**Verified Carbon  
Standard**

## GREENFIELD SOLAR POWER MISSION BY FORTUM INDIA



**INFINITE  
SOLUTIONS**

|                                  |                                                                               |
|----------------------------------|-------------------------------------------------------------------------------|
| <b>Project title</b>             | Greenfield Solar Power Mission by Fortum India                                |
| <b>Project ID</b>                | 2069                                                                          |
| <b>Monitoring period</b>         | 01-January-2024 to 30-June-2024 (Inclusive of both the dates)                 |
| <b>Original date of issue</b>    | 20-August-2024                                                                |
| <b>Most recent date of issue</b> | 27-January-2025 is the date on which the document was most recently submitted |
| <b>Version</b>                   | 2.2                                                                           |
| <b>VCS Standard Version</b>      | V4.6                                                                          |
| <b>Prepared by</b>               | Infinite Environmental Solutions Limited                                      |

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# PROJECT DETAILS

## 1.1 Summary Description of the Implementation Status of the Project

Fortum India Private Limited is the promoter of the project activity. The project activity involves installation of 250 MW (AC) solar power project. Since the project activity is a large-scale project activity, it follows approved large scale CDM methodology ACM0002 Version 19.0 for quantification of GHG emission reductions.

Solar plant was commissioned in two phases, first phase consisting of 150 MW capacity was commissioned on 19-March-2021 and the second phase consisting of 100 MW capacity was commissioned on 01-May-2021. The electricity generated from project activity is sold under the Power Purchase Agreement (PPA), signed with Solar Energy Corporation of India Limited (SECI). The electricity generated from the project activity is supplied to the Indian grid through 400/220 KV GSS, RVPNL Jaisalmer-II substation at Bhensara, Jaisalmer, Rajasthan.

The project activity replaces the anthropogenic emissions of greenhouse gases (GHG's) by displacing approximately 440,514.42 MWh/year amount of electricity from the generation-mix of power plants connected to the Indian electricity grid, which is mainly dominated by thermal/fossil fuel-based power plant, estimated to be approximately 412,674 tCO<sub>2e</sub> per year over the 10 years of crediting period as per PD and applied methodology i.e. ACM0002 version 19.0.<sup>1</sup> Total estimated GHG emission reductions for the chosen 10-year renewable crediting period will be around 4,539,413 tCO<sub>2e</sub>.

The monitoring period is from 01-January-2024 to 30-June-2024(inclusive of both the days). The total GHG emission reductions or removals estimated for this monitoring period are 205,771 tCO<sub>2e</sub> and the actual emission reductions generated in this monitoring period are 287,746 tCO<sub>2e</sub>.

Details of the installation of the project are as follows:

| Project Investor             | Capacity (MW ac) | COD           | Connection with the Grid | State     |
|------------------------------|------------------|---------------|--------------------------|-----------|
| Fortum India Private Limited | 150              | 19-March-2021 | Indian Grid              | Rajasthan |
|                              | 100              | 01-May-2021   |                          |           |

<sup>1</sup> [58IAGB7SZUDE02VN6LYM30K41HFPRO \(unfccc.int\)](https://unfccc.int/58IAGB7SZUDE02VN6LYM30K41HFPRO)

## 1.2 Audit History

| Audit type   | Period                            | Program | Validation/verification body name                     | Number of years                        |
|--------------|-----------------------------------|---------|-------------------------------------------------------|----------------------------------------|
| Validation   | 19-March-2021 to 18-March-2031    | VCS     | Earthood Services Private Limited                     | 10 year 00 months 00 days <sup>2</sup> |
| Verification | 19-March-2021 to 31-March-2022    | VCS     | LGAI Technological Center, S.A (Applus+Certification) | 1 year 00 months 13 days <sup>3</sup>  |
| Verification | 01-April-2022 to 31-March-2023    | VCS     | VKU Certification Private Limited                     | 1 year 00 months 00 days <sup>4</sup>  |
| Verification | 01-April-2023 to 31-December-2023 | VCS     | VKU Certification Private Limited                     | 00 year 09 months 00 days <sup>5</sup> |
| Verification | 01-January-2024 to 30-June-2024   | VCS     | VKU Certification Private Limited                     | 0 Year 06 months 00 days <sup>6</sup>  |

## 1.3 Sectoral Scope and Project Type

|                             |                                                            |
|-----------------------------|------------------------------------------------------------|
| Sectoral scope <sup>7</sup> | 01 - Energy industries (renewable / non-renewable sources) |
| Project activity type       | I - Renewable Energy Projects                              |

## 1.4 Project Proponent

|                   |                                           |
|-------------------|-------------------------------------------|
| Organization name | Fortum India Private Limited <sup>8</sup> |
| Contact person    | Mr. Atishay Jain                          |

<sup>2</sup> [Verra Search Page](#)

<sup>3</sup> [Verra Search Page](#)

<sup>4</sup> <https://registry.terra.org/app/projectDetail/VCS/2069>

<sup>5</sup> <https://registry.terra.org/app/projectDetail/VCS/2069>

<sup>6</sup> <https://registry.terra.org/app/projectDetail/VCS/2069>

<sup>7</sup> Projects, activities, or methodologies may be developed under any of the 16 VCS sectoral scopes:

<https://verra.org/programs/verified-carbon-standard/vcs-program-details/#sectoral-scopes>

<sup>8</sup> As per the project description deviation approved during from 1<sup>st</sup> monitoring period i.e., from 19-March-2021 to 31-March-2022.

|           |                                                                      |
|-----------|----------------------------------------------------------------------|
| Title     | Head Strategy & Investments                                          |
| Address   | 1A, Vandana Building 11, Tolstoy Marg, New Delhi, India,110001       |
| Telephone | +91-85276-94527                                                      |
| Email     | <a href="mailto:atishay.jain@fortum.com">atishay.jain@fortum.com</a> |

## 1.5 Other Entities Involved in the Project

|                     |                                                                                       |
|---------------------|---------------------------------------------------------------------------------------|
| Organization name   | Infinite Environmental Solutions Limited                                              |
| Role in the project | Project Consultant                                                                    |
| Contact person      | Mr. Jimmy Sah                                                                         |
| Title               | Chief Operating Officer                                                               |
| Address             | 214-215, Milinda Manor, Opp. Next Treasure Island, 2 RNT Marg, Indore – 452001, India |
| Telephone           | +91-9644130430                                                                        |
| Email               | <a href="mailto:jimmy@infisolutions.org">jimmy@infisolutions.org</a>                  |

## 1.6 Project Start Date

|                    |                                                                                 |
|--------------------|---------------------------------------------------------------------------------|
| Project start date | 19-March-2021 <sup>9</sup>                                                      |
| Justification      | The project start date is the commissioning date for 150 MW out of total 250 MW |

## 1.7 Project Crediting Period

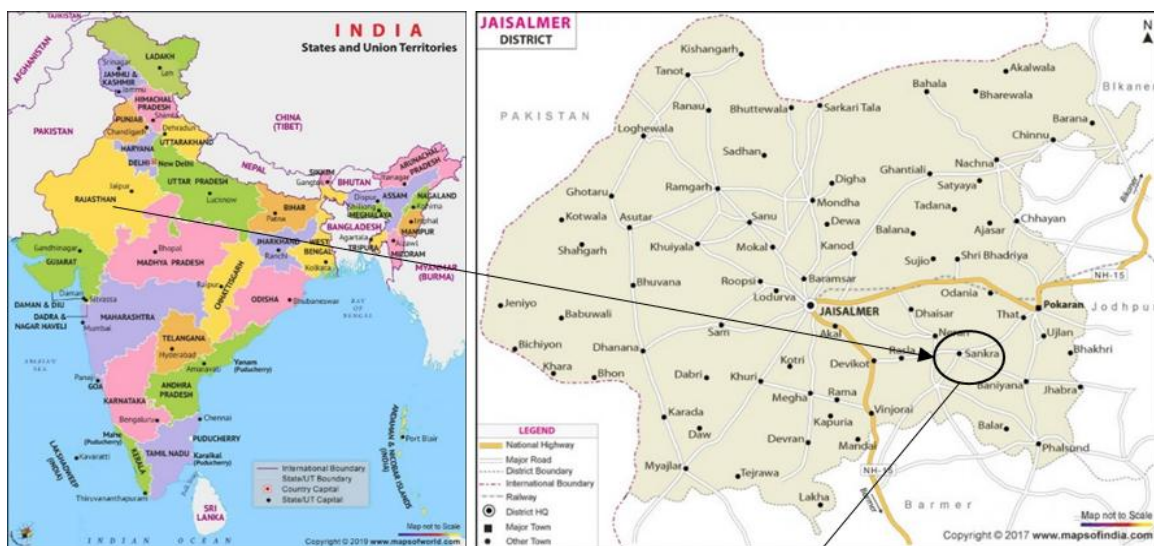
|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Crediting period | <input type="checkbox"/> Seven years, twice renewable<br><input type="checkbox"/> Ten years, fixed<br><input checked="" type="checkbox"/> Other (The project activity adopts renewable crediting period of 10 years period which can be renewed for maximum 2 times. As per Appendix 3 of VCS Standard, version 4.6, “Registered projects and projects that complete validation on or before 19-March-2020 remain eligible to apply the crediting period requirements under VCS Version 3.” Since the validation of the project activity by VVB was         ) |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

<sup>9</sup> 150 MW out of 250 MW commissioned date is 19-March-2021. The start is revised as 19-March-2021 as per the deviation from project description approved during 1<sup>st</sup> verification.

|                                                       |                                                                                                                                                             |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                       | completed on 30-December-2019, it is eligible to apply the crediting period requirements under VCS Version 3 i.e. 10 years crediting period renewed twice.) |
| Start and end date of first or fixed crediting period | 19-March-2021 to 18-March-2031 (Inclusive of both the dates)                                                                                                |

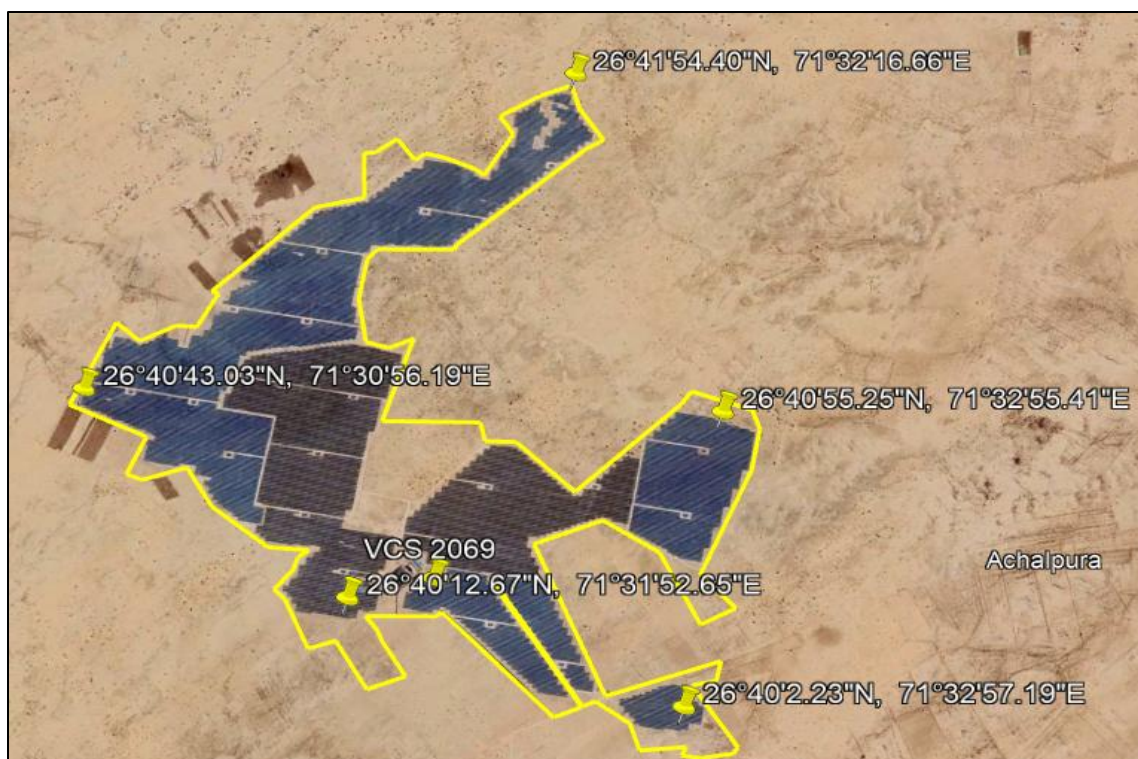
## 1.8 Project Location

| Project Investor             | Village                          | District  | State     | Latitude <sup>10</sup> | Longitude      |
|------------------------------|----------------------------------|-----------|-----------|------------------------|----------------|
| Fortum India Private Limited | Luna Khurd, Luna Kala and Betina | Jaisalmer | Rajasthan | 26°40'18.21"N          | 71°32'07.70" E |



The project location has been highlighted in the map shown below:

<sup>10</sup> Since at the time of project registration, project activity was not commissioned and the location details were tentative, therefore there is slight change in final location of the commissioned project. The geo coordinates are revised as 26°40'18.21"N 71°32'07.70" E, in line with the deviation from project description approved during 1<sup>st</sup> verification.



## 1.9 Title and Reference of Methodology

| Type<br>(methodology,<br>tool or module). | Reference ID, if<br>applicable | Title                                                                         | Version        |
|-------------------------------------------|--------------------------------|-------------------------------------------------------------------------------|----------------|
| Methodology                               | ACM0002                        | Grid-connected electricity generation from renewable sources <sup>11</sup>    | Version 19.0   |
| Tool                                      | Tool 01                        | Tool for the demonstration and assessment of additionality <sup>12</sup>      | Version 07.0.0 |
| Tool                                      | Tool 07                        | Tool to calculate the emission factor for an electricity system <sup>13</sup> | Version 07.0   |

<sup>11</sup> <https://cdm.unfccc.int/UserManagement/FileStorage/58IAGB7SZUDE02VN6LYM30K41HFPRQ>

<sup>12</sup> [FJUZLIKOG8NPT4HSCWR1692703A5VX](https://cdm.unfccc.int/UserManagement/FileStorage/FJUZLIKOG8NPT4HSCWR1692703A5VX) (unfccc.int)

<sup>13</sup> [TJUNP2WBS15MZGYXRD07HEOQ83ILF6](https://cdm.unfccc.int/UserManagement/FileStorage/TJUNP2WBS15MZGYXRD07HEOQ83ILF6) (unfccc.int)

## 1.10 Double Counting and Participation under Other GHG Programs

### 1.10.1 No Double Issuance

Is the project receiving or seeking credit for reductions and removals from a project activity under another GHG program?

☐ Yes ☒ No

### 1.10.2 Registration in Other GHG Programs

Was the project registered or seeking registration under any other GHG programs?

☐ Yes ☒ No

## 1.11 Double Claiming, Other Forms of Credit, and Scope 3 Emissions

### 1.11.1 No Double Claiming with Emissions Trading Programs or Binding Emission Limits

Are project reductions and removals or project activities also included in an emissions trading program or binding emission limit?

☐ Yes ☒ No

### 1.11.2 No Double Claiming with Other Forms of Environmental Credit

Has the project activity sought, received, or is planning to receive credit from another GHG-related environmental credit system?

☐ Yes ☒ No

### 1.11.3 Supply Chain (Scope 3) Emissions

Do the project activities affect the emissions footprint of any product(s) (goods or services) that are part of a supply chain?

☐ Yes ☒ No

*If yes:*

Is the project proponent(s) or authorized representative a buyer or seller of the product(s) (goods or services) that are part of a supply chain?

☐ Yes ☒ No

*If yes:*

Has the project proponent(s) or authorized representative posted a public statement on their website saying, "Carbon credits may be issued through the Verified Carbon Standard project [project ID] for the greenhouse gas emission reductions or removals associated with [project

proponent or authorized representative organization name(s)] [name of product(s) whose emissions footprint is changed by the project activities].”

☐ Yes

☒ No

## 1.12 Sustainable Development Contributions

The Project contributions to the sustainable development of the local area as well as the host country are as follows:

**Environmental well-being:** Solar power is one of the cleanest renewable energy powers and does not involve any fossil fuel. Hence, there are no GHG emissions. The impact on land, water, air and soil is also negligible. Thus, the project activity contributes to environmental well-being without causing any negative impact on the surrounding environment. The project activity’s contribution towards SDG 13 aligns with the Indi SDG Index 13.2 *“Integrate climate change measures into national policies, strategies and planning”* as described in page 153 of SDG INDIA INDEX, Baseline Report 2018<sup>14</sup>.

**Economic and Social well-being:** The project activity generates permanent and temporary employment opportunities within the vicinity of the project. The electricity supply in the nearby area and the investment in the project activity leads to an improvement in the economic activity in the local area, which directly and indirectly improves the economy and lifestyle of the area. The project activity’s contribution towards SDG 8 aligns with the India SDG Index 8.5 *“By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value”* as described in page 95 SDG INDIA INDEX, Baseline Report 2018<sup>15</sup>.

**Technological well-being:** The project activity is a step forward in harnessing the untapped solar potential and further diffusion of solar technology in the region. The project activity leads to the promotion and demonstrates the success of solar projects in the region which further motivates more investors to invest in solar power projects. Hence, the project activity leads to technological well-being. The project activity’s contribution towards SDG 7 aligns with the India SDG Index 7.2 *“By 2030, increase substantially the share of renewable energy in the global energy mix”* as described in page 87 of SDG INDIA INDEX, Baseline Report 2018<sup>16</sup>.

<sup>14</sup> [https://www.niti.gov.in/sites/default/files/2020-07/SDX\\_Index\\_India\\_Baseline\\_Report\\_21-12-2018.pdf](https://www.niti.gov.in/sites/default/files/2020-07/SDX_Index_India_Baseline_Report_21-12-2018.pdf)

<sup>15</sup> [https://www.niti.gov.in/sites/default/files/2020-07/SDX\\_Index\\_India\\_Baseline\\_Report\\_21-12-2018.pdf](https://www.niti.gov.in/sites/default/files/2020-07/SDX_Index_India_Baseline_Report_21-12-2018.pdf)

<sup>16</sup> [https://www.niti.gov.in/sites/default/files/2020-07/SDX\\_Index\\_India\\_Baseline\\_Report\\_21-12-2018.pdf](https://www.niti.gov.in/sites/default/files/2020-07/SDX_Index_India_Baseline_Report_21-12-2018.pdf)

The project's contribution to SDGs with respect to current monitoring period are as follows:



**For SDG 7:** About 307,159 MWh renewable electricity has been supplied to Indian grid during the reported monitoring period i.e., 01-January-2024 to 30-June-2024, that helps to increase the renewable energy share in the energy mix.



**For SDG 13:** By supplying 307,159 MWh clean electricity to Indian grid, the project avoided release of 287,746 tCO<sub>2e</sub> into the atmosphere during the reporting period i.e., 01-January-2024 to 30-June-2024.



**For SDG 8:** Project proponent is committed to provide employment opportunities and ensures the proper health & safety trainings. During the current monitoring period the project proponent provided employment to 69 persons.

Table 1: Sustainable Development Contributions

| Row number | SDG target | SDG indicator                                                       | Net impact on SDG indicator                                                      | Current project contributions                                                                                                                                                                                                      | Contributions over project lifetime                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------|------------|---------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1)         | 7.2        | 7.2.1: Renewable energy share in the total final energy consumption | Implemented activities to increase the renewable energy share in the energy mix. | During the current monitoring period, the project has supplied 307,159.02 MWh of renewable electricity to the Indian Electricity Grid. This contribution accounts for 0.03% of total electricity (energy) supplied to Indian grid. | <p>This lifetime contribution represents 0.04% of total electricity (energy) supplied to Indian grid.</p> <p>A total of 1,925,706 MWh (581,277 MWh in 1<sup>st</sup> verification + 600,047 during 2<sup>nd</sup> MP + 437,223 MWh in 3<sup>rd</sup> verification + 307,159 MWh in 4<sup>th</sup> verification) of renewable electricity has been supplied to the Indian grid by the project activity since start date of the project activity.</p> <p>By contributing renewable energy to the grid, the project has actively supported the transition towards cleaner energy systems. This aligns with SDG 7.2.1, which focuses on increasing the share of renewable energy in total final energy consumption, reflecting the project's ongoing role in promoting sustainability and reducing reliance on fossil fuels.</p> |

|    |      |                                                                                                                                                                                             |                                                                                  |                                                                                                                                          |                                                                                                                                                                                                                                                                                        |
|----|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2) | 8.5  | 8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value | Implemented activities to increase employment opportunities and quality of work. | 69 people are employed during this reporting period (07 skilled, 21 Semiskilled and 41 unskilled).                                       | 163 people were employed since start date of the project activity.                                                                                                                                                                                                                     |
| 3) | 13.2 | 13.2.2: Total greenhouse gas emissions per year                                                                                                                                             | Implemented activities to decrease the total greenhouse gas emissions.           | By generating 307,159 MWh of renewable electricity the project has avoided the emission of 287,746 tCO <sub>2</sub> e in the atmosphere. | Since start date of the project activity the project has avoided the emission of 1,803,998 tCO <sub>2</sub> e (544,539 tCO <sub>2</sub> e in 1st MP + 562,123 in 2 <sup>nd</sup> MP + 409,590 in 3 <sup>rd</sup> MP + 287,746 tCO <sub>2</sub> e during current MP) in the atmosphere. |

### 1.13 Commercially Sensitive Information

There is no commercially sensitive information applicable for the current monitoring period.

## 2 SAFEGUARDS AND STAKEHOLDER ENGAGEMENT

### 2.1 Stakeholder Engagement and Consultation

#### 2.1.1 Stakeholder Identification

##### Stakeholder Identification

To identify the stakeholders, a Stakeholder Analysis was conducted. "Stakeholder Analysis" is understood as the process of identifying the individuals or groups that are likely to affect or be affected by a proposed project and sorting them according to their impact on the project and the impact the project will have on them.

This information (stakeholder analysis) is then used to assess the manner in which the interests of the stakeholders should be addressed in the project plan, policy, program, or other action. The importance of such an analysis lies in the role played by this understanding in the assessment of the socio-political environment surrounding the project. It allows for the:

- Identification of key stakeholders
- Identification of the interests, concerns and potential risks surrounding the stakeholders, as well as conflicts of interests (if any);
- Identification of relations between stakeholders that may enable "coalitions" of project sponsorship, ownership and co-operation as well as the mechanisms which may have a role in influencing other stakeholders;
- Key groups/ individuals to be pinpointed who need to be informed about the project;

|                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                    | <p>Identification of the impact and influence of the project on the stakeholders and of the stakeholders on the project;</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <p>Legal or customary tenure/access rights</p>     | <p>There is no legal or customary tenure/access rights to territories and resources, including collective and conflicting rights, held by stakeholders, indigenous people (IPs), local communities (LCs), and customary rights holders.</p> <p>The total land required for setting up of the 250 MW solar power plant is private land except around 300-acre land which is under the ownership of government. There is no forest land involved in the land required for the project. The PP had appointed a local land aggregator for expediting land procurement for the project. Local land aggregator was responsible for discussing, negotiating and ensuring that sale deed registry execution of identified land parcels between landowner and PP is carried out smoothly.</p> <p>Consultations with the majority of landowners revealed a willingness to sell land parcels mainly due to the land being acquired almost barren land full of gravels. Landowners had stopped agricultural practices on the land parcels left suitable for agriculture due to erratic rainfall and loss in agricultural production over the last few decades.</p> |
| <p>Stakeholder diversity and changes over time</p> | <p>The social, economic, and cultural diversity within stakeholder groups was identified at the time of ESIA. As per the ESIA report, the project has following location advantage:</p> <ul style="list-style-type: none"> <li>• No ecologically sensitive areas such as National Park, Wildlife Sanctuary, Biosphere Reserve etc. within 10 km radius.</li> <li>• No reserve or protected forest within 10 km radius Project Site</li> <li>• No cultural heritage site in the close vicinity</li> </ul> <p>The project is located in 3 villages Loona Khurd, Loona Kalan and Sadrasar. The area had an average family size of 6.3. The sex ratio is 893 females per 1000 male. As per the Census of India 2011, 20.88% of the total population is scheduled caste while 7.93% of the total population is scheduled tribe. The majority of the scheduled caste</p>                                                                                                                                                                                                                                                                                     |

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | <p>population lives in Loona Khurd village. The scheduled tribe population lives in Sadrasar village only.</p> <p>Based on the continuous interactions and ongoing communication with the stakeholders it is identified that the social, economic, and cultural diversity within stakeholder groups remained stable over time and there are no significant changes in the composition of each group observed during the monitoring period.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Expected changes in well-being | <p>There are no changes in well-being and other stakeholder characteristics including changes to ecosystem services identified as important to stakeholders, recorded during the current monitoring period.</p> <p>The operation &amp; maintenance staff and other workers are housed in the plant premises itself or in Jaisalmer or Pokhran. Their quality of life is expected to improve. Some of the local villagers who can qualify for the job are getting preference. It is desirable to impart skill development training to eligible youths so that they can find jobs in solar project.</p> <p>The Solar PV Project is set-up on land mix of fallow land, unculturable waste land, barren scrub land and barren rocky parcels were acquired on willing buyer-willing seller basis. No displacement of population took place. During operational phase, positive impacts are envisaged on the social environment.</p> |
| Location of stakeholders       | <p>The project is located in 3 villages Loona Khurd, Loona Kalan and Sadrasar. The majority of identified stakeholders also reside in these 3 villages (project area).</p> <p>The total land required for setting up of the is private land except around 300-acre land which is under the ownership of government. There is no forest land involved in the land required for the project. Therefore, there is no legal or customary tenure/access rights to territories and resources, including collective and conflicting rights, held by stakeholders, indigenous people (IPs), local communities (LCs), and customary rights holders.</p>                                                                                                                                                                                                                                                                                 |

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       | <p>Since there is no universally accepted definition of “Indigenous Peoples”, Indigenous Peoples may be referred to in different countries by such terms as “Indigenous ethnic minorities,” “aboriginals,” “hill tribes,” “minority nationalities,” “scheduled tribes,” “first nations,” or “tribal groups.” In India, they are identified as Scheduled Tribe. The Fifth Schedule of the Constitution deals with the administration and control of Scheduled Areas as well as of Scheduled Tribes. District Jaisalmer, where the project is located is not a Scheduled V area, therefore, there are no specific indigenous people/local community found in the project implemented area.</p> |
| Location of resources | <p>All the resources and the territories associated with the project are owned by the Project Proponent. Land acquired for the project is on willing buyer - willing seller basis. Land acquisition did not result in rehabilitation and resettlement. There is no settlement on the land acquired. Therefore, no territories and resources of stakeholders directly intersect with the project area.</p>                                                                                                                                                                                                                                                                                    |

## 2.1.2 Stakeholder Consultation and Ongoing Communication

|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ongoing consultation                | <p>During the current monitoring period, the project proponent has effectively communicated and consulted with stakeholders in line with the validated communication plan. PP is maintaining an Input/Grievance Register at project site. The grievance register is located at the administrative office at the plant and also at the Entrance (Main Gate) of the plant. Thus, it is an appropriate publicly accessible location at which local stakeholders can provide their feedback on the project. All the local stakeholders were informed about the process during the LSC Meeting conducted at the time of validation of the project activity.</p> <p>Apart from the grievance register, PP has also placed a comment/suggestion box at main gate of the plant for stakeholders to provide their feedback/ comments/ suggestions.</p> |
| Date(s) of stakeholder consultation | 02-May-2019                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

|                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Communication of monitored results | <p>Monitoring results are being communicated through various channels to ensure that monitoring results are effectively communicated to stakeholders in a timely and accessible manner, which includes community meetings, informational materials, and interactive workshops etc.</p> <p>For ongoing communication, PP maintains a grievance register and a complaint box for stakeholder feedback and utilizes stakeholder engagement platforms to ensure transparency and accountability.</p>                                                                                                                                                                                                                                                                                                                                                             |
| Consultation records               | <p>The outcome of ongoing communication is documented and recorded as follows:</p> <p>Once a comment or grievance is received it has to be acknowledged and a copy is to be stored in the Grievance register. The Grievance redressal officer (GRO) may decide to take action or in case further suggestion or approval from management is required from the Management that shall be discussed and resolved during the monthly management meet.</p> <p>Once a comment or grievance is received it has to be presented to the management during the monthly meeting along with the action taken to resolve the same. In case any input/approval is required from the Management that shall be discussed and resolved during the monthly management meetings. The management may decide to further assess or carry out further investigation if required.</p> |
| Stakeholder input                  | <p>During the consultation process, all stakeholder inputs are being carefully reviewed and analysed, considering technical feasibility, potential impacts, and alignment with project goals. Although no inputs were received during the current monitoring period, the PP is maintaining transparency and inclusivity to ensure stakeholders are informed and engaged in decision-making.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

### 2.1.3 Free, Prior, and Informed Consent

|         |                                                                                                                                                                                                                                |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Consent | <p>Consent from concerned parties, including local communities (LCs) was obtained through a transparent and inclusive process. This involved engaging in meaningful dialogue, providing relevant information in accessible</p> |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 | <p>formats, and addressing any concerns or questions raised. Agreements were reached through consensus-building and ensuring that all parties had the opportunity to express their views and negotiate terms. Transparency was maintained by documenting the process and agreements reached and ensuring that all stakeholders understood the implications of their consent.</p> <p>During the current monitoring period there are no ongoing or unresolved conflicts and the project neither exacerbate nor influence the outcomes of unresolved conflicts.</p>                                                                                                                                                                                                                                             |
| Outcome of FPIC | <p>The outcome of the Free, Prior, and Informed Consent (FPIC) process resulted in a transparent agreement between the project proponent and all concerned parties, including local communities (LCs). Prior to establishing this agreement, comprehensive information regarding the project's scope, potential impacts, and mitigation measures was disclosed to stakeholders in accessible formats and local languages during the LSC.</p> <p>PP hereby declares that the project has not encroached on any land, and does not relocate people, or forced physical or economic displacement. All activities have been conducted in accordance with the regulatory norms and terms outlined in the transparent agreement, ensuring the protection of rights and interests of all stakeholders involved.</p> |

#### 2.1.4 Grievance Redress Procedure

| Grievances received | Resolution and outcome                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NA                  | <p>There were no grievances recorded during the current monitoring period.</p> <p>To resolve the issue/ comments PP is maintaining a grievance register and a complaint / suggestion box have been provided at project site for stakeholders to provide their feedback/ comments/ suggestions.</p> <p>The grievance register is located at the administrative office at the plant and also at the Entrance (Main Gate) of the plant. Thus, it is an appropriate publicly accessible location</p> |

at which local stakeholders can provide their feedback on the project.

### 2.1.5 Public Comments

| Summary of comments received                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Actions taken                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>No comments were received outside of the public comment period and also during the current monitoring period.</p> <p>During the Local Stakeholder Consultation at the time of validation the villagers raised questions about the project's benefits, employment opportunities, land fertility, and future plans. They were assured of local employment, no impact on land fertility, and promised economic development contributing to improved infrastructure and facilities in the area.</p> | <p>Since there were no comments received during the current monitoring period and outside of the public comment period, no actions were taken and there are no updates to project design.</p> <p>As a part of continuous feedback from stakeholders, PP is maintaining a grievance register and a complaint/ suggestion box for feedback collection, ensuring effective communication and resolution of concerns.</p> <p>There were no other major comments or protests raised by the stakeholders till now. The local stakeholders were totally in support of setting up of the project in the region.</p> |

## 2.2 Risks to Stakeholders and the Environment

### 2.2.1 Management Experience

The management team leading the solar project possesses substantial expertise and experience in implementing similar renewable energy projects. The team has successfully executed multiple solar initiatives, demonstrating a strong capability in project design, community engagement, and overall implementation.

Given the extensive experience of the existing management team, there has been no need to involve new entities or form partnerships with other organizations for this project. The team's established track record ensures that all project activities are managed effectively and in alignment with the project's goals.

### 2.2.2 Risk assessment

| Risk identified | Mitigation or preventative measure(s) taken |
|-----------------|---------------------------------------------|
|-----------------|---------------------------------------------|

|                                                                |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Natural and human-induced risks to stakeholders' wellbeing     | No risk identified | The project does not pose any risks to stakeholder wellbeing. The PP is ensuring open and transparent dialogue with the stakeholders.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Risks to stakeholder participation                             | No risk identified | The project does not pose any risks to stakeholder participation. The PP is ensuring open and transparent dialogue with the stakeholders. The women's participation in the consultation is being ensured.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Working conditions                                             | No risk identified | The PP has diligently maintained exemplary working conditions, ensuring the safety, health, and well-being of all employees involved. Through robust safety protocols, comprehensive training programs, and the provision of adequate personal protective equipment, the project has effectively mitigated any potential risks associated with working conditions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Safety of women and girls                                      | No risk identified | PP offers a safe, healthy workplace for everybody working at Fortum. By maintaining stringent safety protocols and adhering to regulations governing workplace safety in India such as The Factories Act, 1948, Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013; the PP has effectively mitigated any potential risks related to the safety of women and girls. Through comprehensive training programs and the promotion of a culture of respect and equality, the PP has created a work environment where all individuals feel valued, empowered, and protected from harm. As a result, it can be affirmed that the project provides a safe and secure workplace for women and girls, fostering an environment conducive to their participation and contribution to the project's success. |
| Safety of minority and marginalized groups, including children | No risk identified | The PP is an equal rights employer. No discrimination of any kind based on race, religion, political opinion, gender, age, national origin, sexual orientation, marital status or disability is allowed in the project. All types of harassment are prohibited and will be eliminated immediately. PP appreciates diversity and considers it a competitive advantage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Pollutants (air, noise, discharges to water,                   | No risk identified | A solar power project inherently presents minimal risks related to pollutants. Solar energy generation is                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

|                                                                                                  |  |                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| generation of waste, and release of hazardous materials and chemical pesticides and fertilizers) |  | a clean and renewable energy source that does not produce air pollutants such as carbon dioxide, sulfur dioxide, or nitrogen oxides during operation. |
|--------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------|

## 2.3 Respect for Human Rights and Equity

### 2.3.1 Labor and Work

|                   | Risks identified <sup>17</sup> | Mitigation or preventative measure(s) taken                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Discrimination    | No Risk Identified             | <p>As per the Fortum People Policy, “Fortum is an equal rights employer. No discrimination of any kind based on race, religion, political opinion, gender, age, national origin, sexual orientation, marital status or disability is allowed in the project. All types of harassment are prohibited and will be eliminated immediately. Fortum appreciates diversity and considers it a competitive advantage.”</p> <p>During the current monitoring period, no instances of discrimination have been reported or identified within the project.</p> <p>Comprehensive policies are in place to prevent and address such issues promptly and effectively.</p> |
| Sexual harassment | No Risk Identified             | <p>PP adheres to the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013. As per chapter IV, article 19 “Duties of Employer” clause (a) Every employer shall provide a safe working environment at the workplace with shall include safety from the persons coming into contact at the workplace.</p> <p>During the current monitoring period, no instances of sexual harassment have been reported or identified within the project.</p>                                                                                                                                                                              |

<sup>17</sup> The identified risks and commensurate mitigation or preventative measure(s) for forced labor, child labor, and human trafficking, must be inclusive of staff and contracted workers employed by third parties.

|                                 |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 |                    | Comprehensive policies are in place to prevent and address such issues promptly and effectively.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Gender equity in labor and work | No Risk Identified | <p>As per Fortum People Policy, “Fortum complies with fair employment practices and honors internationally accepted human and labor rights and labor standards.”</p> <p>“Fortum offers fair, transparent and competitive rewards to its employees at all levels. Salaries are based on applicable laws and agreements in accordance with specific practices in respective countries.”</p> <p>As per chapter – II, article 4 of the Equal Remuneration Act, 1976 clause (1) “No employer shall pay to any worker, employed by him in an establishment or employment, remuneration, whether payable in cash or in kind, at rates less favorable than those at which remuneration is paid by him to the workers of the opposite sex in such establishment or employment for performing the same work or work of a similar nature.”</p> <p>Therefore, equal opportunities in terms of gender and equal pay for equal labor are ensured through transparent hiring processes, non-discriminatory policies, and regular reviews of pay scales to address any disparities.</p> <p>During the current monitoring period no instances of discrimination or disparity in payments have been reported or identified within the project. Additionally, ongoing training programs promote gender inclusivity and address unconscious biases within the workforce.</p> |
| Forced labor                    | No Risk Identified | <p>The project enforces strict ethical sourcing policies, including thorough vetting of suppliers and contractors, to ensure compliance with labor laws and human rights standards. The project complies with the Bonded Labour System (Abolition) Act, 1976.</p> <p>Regular audits and inspections are conducted to verify that no instances of human trafficking, forced labor, or child labor occur within the project's supply chain or workforce.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

|                   |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Child labor       | No Risk Identified | <p>The project enforces strict ethical sourcing policies, including thorough vetting of suppliers and contractors, to ensure compliance with labor laws and human rights standards. The project complies with the Child Labour (Prohibition and Regulation) Act.</p> <p>Regular audits and inspections are conducted to verify that no instances of human trafficking, forced labor, or child labor occur within the project's supply chain or workforce.</p> |
| Human trafficking | No Risk Identified | <p>The project enforces strict ethical sourcing policies, including thorough vetting of suppliers and contractors, to ensure compliance with labor laws and human rights standards. The project complies with the Factories Act, 1948.</p> <p>Regular audits and inspections are conducted to verify that no instances of human trafficking, forced labor, or child labor occur within the project's supply chain or workforce.</p>                           |

### 2.3.2 Human Rights

Although there are no indigenous people (IPs), local communities (LCs), and customary rights holders identified, the project proponent (PP) remains steadfast in its commitment to recognizing, respecting, and promoting the protection of human rights. The PP actively engages with stakeholders through ongoing communication and interaction, seeking their feedback and input throughout the project lifecycle.

| Risks identified   | Mitigation or preventative measure(s) taken                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No Risk Identified | <p>The project incorporates mechanisms for grievance redressal, providing a platform for stakeholders to voice their concerns and lodge grievances. Moreover, there is a comment/feedback box in place to facilitate open communication and ensure that stakeholders' voices are heard and considered.</p> <p>By upholding these practices, the project aligns with applicable international human rights law, including the United Nations Declaration on the Rights of Indigenous Peoples and the International Labour Organization (ILO) Convention 169 on Indigenous and Tribal Peoples, demonstrating its commitment to promoting the rights and welfare of IPs, LCs, and customary rights holders.</p> |

### 2.3.3 Indigenous Peoples and Cultural Heritage

Despite the absence of identified cultural heritage sites and any interference with conservation or preservation areas within the project activity, the project remains committed to preserving and protecting cultural heritage as an integral aspect of its activities.

| Risks identified   | Mitigation(s) or preventative measure taken                                                                                                                                                                                                                                                                                   |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No Risk Identified | Proactive measures are taken, including thorough cultural heritage assessments during planning, strict protocols to minimize disturbances, and collaboration with local communities. By prioritizing cultural heritage preservation, the project upholds its commitment to responsible and sustainable development practices. |

### 2.3.4 Property Rights

| Risks identified   | Mitigation or preventative measure(s) taken                                                                                                                                                                                                                                                         |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No Risk Identified | Ongoing measures to protect property rights include upholding agreements made before land acquisition, respecting customary rights, and ensuring transparent and equitable compensation processes. Regular consultations and grievances mechanisms are maintained to address any concerns promptly. |

### 2.3.5 Benefit Sharing

|                                              |                                                                                                                                              |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Summary of the benefit sharing plan          | There is no benefit sharing in the project, all the environmental rights are exclusive to the PP. Therefore, this section is not applicable. |
| Benefit sharing during the monitoring period | NA                                                                                                                                           |

## 2.4 Ecosystem Health

|                                        | Risk identified    | Mitigation or preventative measure(s) taken during the monitoring period                                                                                |
|----------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Impacts on biodiversity and ecosystems | No risk Identified | During the monitoring period, no adverse effects on biodiversity or ecosystems were observed in the Project. Solar projects are generally recognized as |

|                                   |                    |                                                                                                                                                                                                                                                            |
|-----------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                   |                    | environmentally benign, with minimal impact on surrounding ecosystems.                                                                                                                                                                                     |
| Soil degradation and soil erosion | No risk Identified | During the monitoring period, no instances of soil degradation or erosion were identified in the project area. Solar projects typically employ land management practices that minimize soil disturbance, ensuring soil health and stability are preserved. |
| Water consumption and stress      | No risk Identified | Throughout the monitoring period, no concerns regarding water consumption or stress were identified within the project. Solar installations generally have minimal water requirements, reducing strain on local water resources and ecosystems.            |

#### 2.4.1 Rare, Threatened, and Endangered species

|                                       |                                                                                                                        |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Species or habitat                    | The Project is located at Jaisalmer, Rajasthan and there are no endangered species found during the monitoring period. |
| Areas needed for habitat connectivity | Not Applicable                                                                                                         |

|                                                       | Risks identified   | Mitigation or preventative measure(s) taken                                                                                  |
|-------------------------------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------|
| Habitats for rare, threatened, and endangered species | No Risk Identified | The Project is located at Jaisalmer, Rajasthan and there are no rare, endangered and threatened species found in the region. |
| Areas for habitat connectivity                        | No Risk Identified | The Project is located at Jaisalmer, Rajasthan and there are no rare, endangered and threatened species found in the region. |

#### 2.4.2 Introduction of species

| Species introduced | Classification | Justification for use | Adverse effects and mitigation |
|--------------------|----------------|-----------------------|--------------------------------|
| N/A                | N/A            | N/A                   | N/A                            |

| Existing invasive species | Mitigation measures to prevent the spread or continued existence of invasive species |
|---------------------------|--------------------------------------------------------------------------------------|
| N/A                       | N/A                                                                                  |

#### 2.4.3 Ecosystem conversion

The project does not fall under any of the specified categories (ARR, ALM, WRC, or ACoGS) as it is a Solar power project. The transition to renewable energy sources justifies any ecosystem

conversion by mitigating climate change, reducing reliance on fossil fuels, and fostering sustainable development for future generations.

Therefore, no ecosystem conversion is applicable to the current monitoring period.

## 3 IMPLEMENTATION STATUS

### 3.1 Implementation Status of the Project Activity

The project activity involves installation of 250 MW solar power project at Jaisalmer, Rajasthan. Solar plant was commissioned in two phases, first phase consisting of 150 MW capacity was commissioned on 19-March-2021 and the second phase consisting of 100 MW capacity was commissioned on 01-May-2021. The electricity generated from project activity is exported to the unified Indian grid under the Power Purchase Agreement (PPA), signed with Solar Energy Corporation of India Limited (SECI). The energy meters are located at 400/220 KV GSS, RVPNL Jaisalmer-II substation at Bhensara, Jaisalmer, Rajasthan, which is 11.353 kilometres away from the solar power plant.

#### Solar Power Project Technology Details

The technology employed converts solar energy to electrical energy. The technology is an environment friendly technology since there are no GHG emissions associated with electricity generation. There is no transfer of technology involved in the project activity. Technical specification of the project are as follows:

|                                                 |                                                                                                                 |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| PV Module Make                                  | Suntech & Jinko                                                                                                 |
| PV Module type                                  | Suntech – Mono Facial (Polycrystalline) &<br>Jinko – Bifacial (Monocrystalline)                                 |
| Module Ratings                                  | Suntech (Mono Facial) - 340 & 345 Wp                                                                            |
|                                                 | Jinko (Bifacial) - 395 & 400 Wp                                                                                 |
| Total no. of module                             | Jinko (Bifacial) – 124488 (395Wp) & 184576 (400Wp)<br>Suntech (Mono Facial) – 305310 (340Wp) & 307860 (345 Wp)  |
| Open Circuit Voltage (Voc) of individual panel  | Suntech (Mono Facial) – 46.0V (340Wp), 46.2V (345Wp) &<br>Jinko (Bifacial) - 48.26V (395 Wp), 48.35V (400 Wp)   |
| Short Circuit Current (Isc) of individual panel | Suntech (Mono Facial) - 9.39A (340 Wp), 9.48A (345 Wp) &<br>Jinko (Bifacial) - 10.23A (395 Wp), 10.32A (400 Wp) |
| Temperature Coefficient of Pmax                 | Suntech (Mono facial) - 0.38 %/ °C &<br>Jinko (Bifacial) - 0.35 %/ °C                                           |
| Tilt                                            | Fixed tilt structure at 18 deg (Suntech – Mono facial) &<br>20 deg (Jinko - Bifacial)                           |

|                                                                            |                                                                                                                                                                            |
|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of ICoRs                                                            | 10 Nos                                                                                                                                                                     |
| Number of RMUs                                                             | 10 Nos                                                                                                                                                                     |
| No of inverters per ICoRs                                                  | 78*2 Nos                                                                                                                                                                   |
| Step up transformer location, capacity, input and output voltages          | 20 Inverter duty Transformer at different location within the plant of capacity 12.6MVA, 33/0.8/0.8/0.8 kV                                                                 |
| The net electricity as input to the panel at MCR and output                | 2 Outgoing HT Panels with 125MW output capacity each & Each O/G panel has 5 incomers connected with 25MW capacity.                                                         |
| Transformer specifications at the switchyard                               | 2 Nos. of Power transformer used as 125/150MVA, ONAN/ONAF, 220kV/33kV, YNyn0.                                                                                              |
| Electric arc insulation in power transformers                              | Oil type                                                                                                                                                                   |
| Number of Feeders                                                          | 2 Outgoing HT panels and 5 Incoming feeders with 1 Spare Incoming feeder. Also, per incoming feeder capacity of 25MW, 2 Outgoing feeders; 2 Auxiliary Transformer feeders. |
| The output voltage generated from the plant and synchronized with the grid | 220kV                                                                                                                                                                      |
| Inverter Make                                                              | Huawei                                                                                                                                                                     |
| Inverter Capacity                                                          | 160 KW                                                                                                                                                                     |
| No. of Inverter                                                            | 1563 Nos                                                                                                                                                                   |
| Inverter capacity voltage at the output side                               | 800 V                                                                                                                                                                      |
| Main Control Room                                                          | 1 MCR Located at the center of the plant                                                                                                                                   |

#### Emission Reductions from anthropogenic sources:

Since solar power is Green House Gas (GHG) emissions free, the power generated will prevent the anthropogenic GHG emissions generated by the fossil fuel based thermal power stations comprising coal, diesel, furnace oil and gas. The estimation of GHG reductions by this project is limited to carbon dioxide (CO<sub>2</sub>) only.

The project shall result in replacing anthropogenic emissions of greenhouse gases (GHGs) estimated to be approximately 412,674 tCO<sub>2</sub>e per year, there on displacing 440,514.42 MWh/year amount of electricity from the grid over the 10 years crediting period. During the current monitoring period the project has generated 307,159 MWh of electricity thereby reducing 287,746 tCO<sub>2</sub>e of GHG emissions from the environment.

The plant was operational for 4,368 hours in the current monitoring period i.e. from 01-January-2024 to 30-June-2024 (inclusive of both the dates). There were no such events during operation of the project activity that may impact the GHG emission reductions or removals in the monitoring period. There were a few minor breakdowns that occurred due to scheduled maintenance activities and some other reasons. However, the plant was not totally shut down during breakdown hours, only the affected parts were shut down. Total breakdown hours for the current monitoring period are 548.75 hours<sup>18</sup>. The details of the breakdown/downtime are provided in APPENDIX 3: Breakdown Details for the reference.

## 3.2 Deviations

### 3.2.1 Methodology Deviations

This section is not Applicable, as there are no deviations requested under current monitoring period (01-January-2024 to 30-June-2024) from the applied methodology.

### 3.2.2 Project Description Deviations

The project has not applied/requested for any deviations from Project Description under current monitoring period (01-January-2024 to 30-June-2024). However, the following project description deviations were approved during the first verification:

- The project activity crediting period start date was 01-December-2020, but due to the Covid-19 restrictions delay occurred in the commissioning of the plant, and the plant is commissioned on 19-March-2021. So, the crediting period start date was revised with the project start date. Therefore, the crediting period start date is 19-March-2021 and crediting period end date is 18-March-2031.
- As found out in the site survey during 1st verification the geo-coordinates of the project activity are latitude - 26°40'18.21"N, longitude -71°32'7.70"E which are different as per registered VCS PD. Since at the time of project registration, project activity was not commissioned and the location details were tentative, therefore there is slight change in final location of the commissioned project.
- The technical specification of the equipment's (PV module type and its capacity) used for actual installation on site is different from the details provided in the registered VCS PD and the same has been updated in section 3.1 of the VCS MR.
- As per the registered VCS PD "Fortum Solar Plus Private Limited" was the project proponent of the project activity. However, the name of "Fortum Solar Plus Private Limited" has been changed to "SPRNG Solar Plus Private Limited" on 14-June-2022. SPRNG Solar Plus Private Limited (Formerly known as "Fortum Solar Plus Private Limited") is responsible for overall

<sup>18</sup> The total breakdown hours mentioned in the section comprises of breakdown times pertaining to specific strings/ inverters, this value does not signify the hours for which the whole plant was shut down. During breakdown hours only the affected part of the plant was shut down.

management of current 250 MW project activity, but as per the declaration submitted to VERRA, all the Carbon Credits rights were transferred from “SPRNG Solar Plus Private Limited” (Formerly known as “Fortum Solar Plus Private Limited”) to “Fortum India Private Limited” during last verification (1st Monitoring Period) and therefore “Fortum India Private Limited” is acting as the project proponent for the said project activity.

- The registry of the project activity was also transferred from previous account holder “EKI Energy Services Limited” (Account ID-1851) to “Fortum India Private Limited” (Account ID-4660) and now the sole responsibility of communication and issuance lies with Fortum India Private Limited. and therefore “Fortum India Private Limited” is acting as the project proponent for the said project activity.

Infinite Environmental Solutions Limited (Infinite Solutions) is now named as the other entity involved for the project activity replacing EKI Energy Services Limited for the role of project consultant.

### 3.3 Grouped Projects

Not Applicable, as the project activity is not a Grouped Project.

### 3.4 Baseline Reassessment

Did the project undergo baseline reassessment during the monitoring period?

☐ Yes ☒ No

## 4 DATA AND PARAMETERS

### 4.1 Data and Parameters Available at Validation

|                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | $EF_{grid,OM,y}$                                                                                                                                                                                                                                                                                                                                                                            |
| Data unit                                                                                    | tCO <sub>2</sub> e /MWh                                                                                                                                                                                                                                                                                                                                                                     |
| Description                                                                                  | Operating Margin CO <sub>2</sub> emission factor in year y                                                                                                                                                                                                                                                                                                                                  |
| Source of data                                                                               | Calculated from CEA database, Version 14.0, December -2018                                                                                                                                                                                                                                                                                                                                  |
| 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 <sub>2</sub> 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 Emissions.                                                                                                                                                                                                                                                                                                                                              |

|                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comments                                                                                     | This parameter is fixed ex-ante for the entire crediting period.                                                                                                                                                                                                                                                                                                                        |
| Data / Parameter                                                                             | $EF_{grid,BM,y}$                                                                                                                                                                                                                                                                                                                                                                        |
| Data unit                                                                                    | tCO <sub>2</sub> /MWh                                                                                                                                                                                                                                                                                                                                                                   |
| Description                                                                                  | Build Margin CO <sub>2</sub> emission factor in year y                                                                                                                                                                                                                                                                                                                                  |
| Source of data                                                                               | Calculated from CEA database, Version 14.0, December -2018                                                                                                                                                                                                                                                                                                                              |
| 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 <sup>19</sup> ” as per the latest data available for the most recent year 2018. The data is obtained from “CO <sub>2</sub> Baseline Database for Indian Power Sector” version 14 <sup>20</sup> , published by the Central Electricity Authority, Ministry of Power, Government of India. |
| Purpose of Data                                                                              | For the calculation of Baseline Emissions.                                                                                                                                                                                                                                                                                                                                              |
| Comments                                                                                     | This parameter is fixed ex-ante for the entire crediting period.                                                                                                                                                                                                                                                                                                                        |

|                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | $EF_{grid,CM,y}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Data unit                                                                                    | tCO <sub>2</sub> /MWh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Description                                                                                  | Combined Margin CO <sub>2</sub> emission factor in year y                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Source of data                                                                               | Calculated from CEA database, Version 14.0, December -2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Value applied                                                                                | 0.9368                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Justification of choice of data or description of measurement methods and procedures applied | <p>The combined margin emissions factor is calculated as follows:<br/> <math>EF_{grid,CM,y} = EF_{grid,OM,y} * W_{OM} + EF_{grid,BM,y} * W_{BM}</math></p> <p>Where:</p> <p><math>EF_{grid,BM,y}</math> = Build margin CO<sub>2</sub> emission factor in year y (tCO<sub>2</sub>/MWh)<br/> <math>EF_{grid,OM,y}</math> = Operating margin CO<sub>2</sub> emission factor in year y (tCO<sub>2</sub>/MWh)</p> <p><math>W_{OM}</math> = Weighting of operating margin emissions factor (%) = 75%<br/> <math>W_{BM}</math> = Weighting of build margin emissions factor (%) = 25%</p> <p>Calculated as per “Tool to calculate the emission factor for an electricity system, version 07.0.0<sup>21</sup>”. The data is obtained from “CO<sub>2</sub> Baseline Database for Indian Power Sector” Version 14, December 2018<sup>22</sup>, published by the Central Electricity Authority, Ministry of Power, Government of India.</p> |
| Purpose of Data                                                                              | For the calculation of Baseline Emissions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

<sup>19</sup> <https://cdm.unfccc.int/UserManagement/FileStorage/TJUNP2WBS15MZGYXRD07HEOQ83ILF6>

<sup>20</sup> [https://cea.nic.in/wp-content/uploads/baseline/2020/07/user\\_guide\\_ver14.pdf](https://cea.nic.in/wp-content/uploads/baseline/2020/07/user_guide_ver14.pdf)

<sup>21</sup> <https://cdm.unfccc.int/UserManagement/FileStorage/TJUNP2WBS15MZGYXRD07HEOQ83ILF6>

<sup>22</sup> [https://cea.nic.in/wp-content/uploads/baseline/2020/07/user\\_guide\\_ver14.pdf](https://cea.nic.in/wp-content/uploads/baseline/2020/07/user_guide_ver14.pdf)

|          |                                                                  |
|----------|------------------------------------------------------------------|
| Comments | This parameter is fixed ex-ante for the entire crediting period. |
|----------|------------------------------------------------------------------|

## 4.2 Data and Parameters Monitored

|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                | EG <sub>facility,y</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Data unit                                                       | MWh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Description                                                     | Quantity of net electricity generation supplied by the project (Solar) plant/unit to the grid in year y                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Source of data                                                  | JMR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Description of measurement methods and procedures to be applied | <p>The value of net electricity generation supplied to the grid as per the Joint Meter Reading Report forms the basis for calculation of the emission reductions, which can be cross checked from the invoice raised.</p> <p>Net electricity supplied to grid will be 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.</p> <p>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.</p> <p>Monitoring: Bidirectional Tri vector meter will be used<br/>Data type: Measured<br/>Type of meter: Static type meter (Main &amp; Check).<br/>Both are Bidirectional meters. Class of meter: 0.2s.<br/>Calibration frequency: Once in five years<sup>23</sup>. More details about energy meter provided in appendix 1.</p> |
| Frequency of monitoring/recording                               | Continuous monitoring, hourly measurement and at least monthly recording.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Value monitored                                                 | 307,159                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Monitoring equipment                                            | Special Energy Meters (SEMs) of 0.2s accuracy class                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| QA/QC procedures to be applied                                  | <p>Energy meters will be calibrated once every five years and faulty meters will be duly replaced immediately.</p> <p>This data may be cross checked with the Monthly Generation Reports</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

<sup>23</sup> As per the registered VCS PD version 02 dated 19-December-2019, the calibration frequency for energy meters is once in 5 years, which is also in line with Article 7 para 7.1.1 of the Power Purchase Agreement and para 1 (b) under section 18 of Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, “All interface meters shall be tested at least once in five years.”

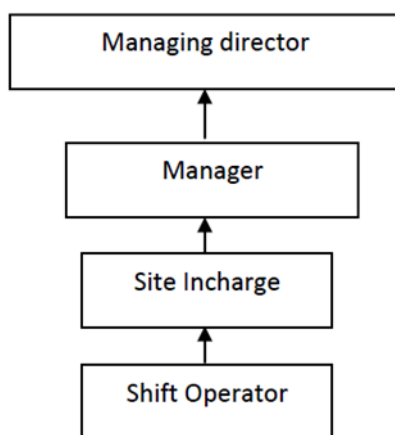
|                     |                                                                                                          |
|---------------------|----------------------------------------------------------------------------------------------------------|
| Purpose of the data | The Data/Parameter is required to calculation of baseline emission.                                      |
| Calculation method  | N/A                                                                                                      |
| Comments            | The data would be archived electronically and maintained for the entire crediting period plus two years. |

### 4.3 Monitoring Plan

“SPRNG Solar Plus Private Limited” (Formerly known as “Fortum Solar Plus Private Limited”) is responsible for overall management of current 250 MW project activity. RWE Solar India Private Limited (Formerly electric Photovoltaic India Private Limited) was contracted by SPRNG Solar Plus Private Limited (formerly known as “Fortum Solar Plus Private Limited”) for daily operation and maintenance of the project till November 2023. Currently Param Renewable Energy Private Limited is responsible for daily operation and maintenance of the power plant.

The project has the following operational & management structure in order to monitor emission reduction. The organization structure for the power plant has a manager as the in-charge for the entire power plant operations and maintenance and directly reports to the Managing director. He is assisted by the site in charge. The day-to-day operation like planning the routine maintenance, safety and environmental control was placed under the care of the Site manager. The organizational structure and responsibilities on project operation, monitoring, data recording and ER calculation has been mentioned below:

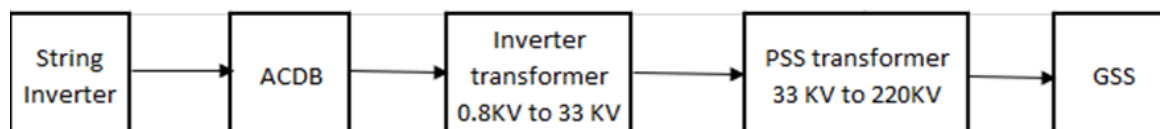
#### Organizational Structure:



| Designation       | Responsibilities                                                                                                                                                                                   |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Managing director | Held complete control over monitoring aspects pertaining to the project.<br>Reviewed Monitoring report.<br>Training of the staff performed.<br>Emission reduction calculation has been maintained. |

|                |                                                                                                                                                               |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Manager        | Entire power plant operation & maintenance<br>Periodic checking of recorded & stored data.<br>Emission reduction calculation & Monitoring report preparation. |
| Site In-charge | Day to day Operation<br>Storage of data<br>Data Recording                                                                                                     |
| Shift operator | Data collection                                                                                                                                               |

The schematic diagram of the project is illustrated below:



The project activity involves the generation of electricity from renewable solar power by installation of 250 MW (AC) Solar Photovoltaic modules at Jaisalmer district, Rajasthan. The modules are of 2 types mono facial and bifacial. The power is initially generated at 800V by the string inverters, which are responsible for converting the solar energy into usable electrical power. To efficiently transmit the generated power, it is stepped up to a higher voltage of 33 kV using transformers installed in each of the inverters. In order to connect the power plant to the Bhensara substation, two feeders with a capacity of 125 MW have been laid. These feeders act as transmission lines, serving the purpose of transporting the power from the power plant to the pooling substation. The power is further stepped up to 220 kV using the transformers installed in the pooling substation.

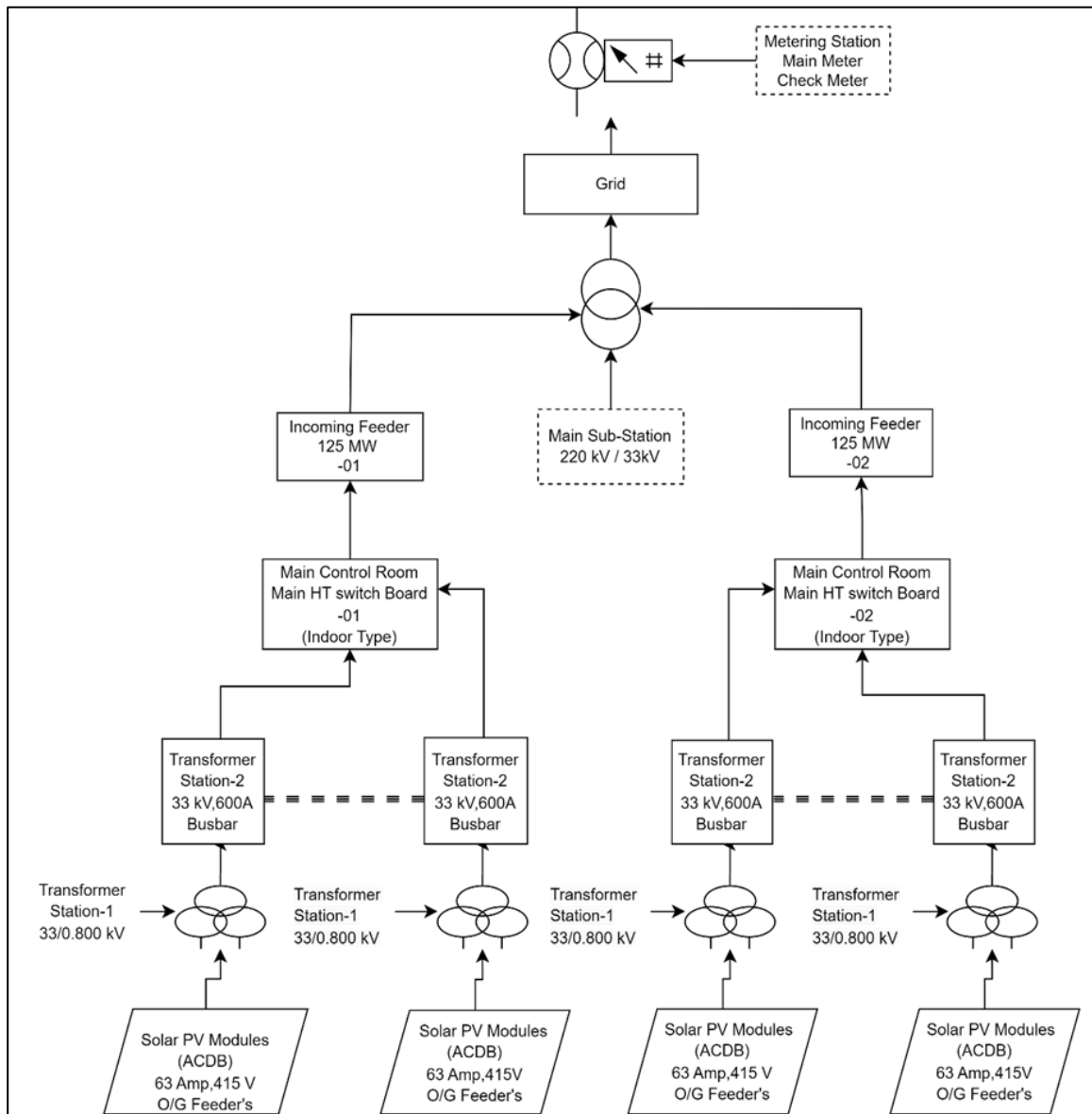
The power evacuation of the project activity is carried out by the Jodhpur Vidyut Vitaran Nigam Limited (JDVVNL) through 400/220 KV GSS (Grid Substation), which is the RVPNL Jaisalmer - II substation located in Bhensara, Jaisalmer, Rajasthan. The Grid Substation at Bhensara acts as a pivotal point where the power generated by the project is fed into the grid. This substation provides the necessary infrastructure, equipment, and monitoring capabilities to handle the high-voltage power coming from the project, ensuring efficient transmission.

#### Data Measurement:

The export and import energy are being measured continuously using above mentioned Main and Check meters located at 400/220 KV GSS, RVPNL Jaisalmer-II substation at Bhensara, Jaisalmer, Rajasthan. Readings of meters are taken on a monthly basis by an authorized officer of SEB (Jodhpur Vidyut Vitaran Nigam Limited, JDVVNL) in the presence of PP or a representative of PP. Based on the Meter Reading Statement to Fortum India Private limited, invoices are being raised. These invoices can be used for cross-checking the meter readings taken for the respective project activity. In case of the billing cycle and monitoring, period cycle does not match, then daily generation data will be used to determine net electricity export for a particular period.

#### Data collection and Data Archiving:

Readings from meters are collected in the presence of the plant in-charge. Export and Import data would be 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 would be 2 years after the end of crediting period or till the last issuance of VCUs for the project activity whichever occurs later.



Single Line Diagram (simplified version)

#### QA/QC procedures:

The energy meters are maintained and owned by State Electricity Board (JDVNL). Neither the project proponent nor the site personnel have any control over it. The records are cross-checked with the records of sold electricity to Solar Energy Corporation of India (SECI). The meters are calibrated by a National Accreditation Board for Testing and Calibration Laboratories (NABL) certified third party agency appointed by state electricity board (JDVNL) at least once in five years.

The project activity uses high-precision monitoring meters of 0.2s accuracy class to monitor the electricity to the grid. The meters are calibrated and sealed as per the industry practices by the grid utility. Hence, high quality is ensured. At the project site, a robotic system is used to clean solar panels which runs on electricity and is a part of project. Hence, there are no project emissions related with solar panel cleaning. The power required by the robotic system is already included in the project's auxiliary consumption, which is a part of the project's electricity imports. Emission reductions are determined based on net power generation, which is calculated after subtracting import values from the energy exports.

Electricity sales receipts is used to test the consistency of the recorded data. A supervisory control and data acquisition (SCADA) system of ABB India is employed at site for overall monitoring of the project.

#### **Internal Audit**

PP has carried out the internal audit annually and whenever necessary to verify that the monitoring plan satisfies the VCS Standards, or the standards provided by other laws and regulations to be conformed to and abides by the procedures specified in the registered VCS PD.

#### **Procedures for handling non-conformances with the validated monitoring plan**

If any non-conformity is observed in the proposed monitoring plan, then the same shall be reported to the VCS board at the time of the VCS verification along with the corrective actions taken by the PP.

#### **Emergency preparedness:**

In case Main meter or Check meter is found to be outside the acceptable limits of accuracy or faulty or not functioning properly, it will be repaired, recalibrated or replaced as soon as possible. In the event that the Main meter will not be in service as a result of maintenance, repairs or testing, the Check meter will be used for readings. In case both the main and check meter are found to be outside the acceptable limits of accuracy or faulty or not functioning properly, both the meters will be calibrated immediately, and the error percentage found in the main meter during its calibration will be applied to its metered energy data for the entire period since its last calibration to obtain the corrected value of net electricity exported to the grid.

In case the dates of a particular monitoring period will not match with the dates of the billing cycle, the net electricity exported to the grid will be calculated from:

- Data collected by Fortum India Private limited from energy meters installed at the plant end and recorded in the Daily Generation Report by SCADA system in place for overall monitoring of the project.
- Apportioning the net electricity exported to grid, as recorded in the Monthly Generation Record/Joint Meter Reading statement, based on the number of days in the monitoring period and the number of days for which the Monthly Generation Record/Joint Meter Reading report was taken. The net electricity exported to the grid would be calculated from:

Net electricity exported to the grid =  $A/B \times C$

Where:

A= Number of days matching in billing period and monitoring period.

B= Total number of days of the billing period/month

C= Net electricity supplied to the grid for that given billing period/month

Calculation of net electricity exported to the grid is done by both the approaches and conservative value among the two is used for calculation of emission reductions during that period.

### Personnel training:

In order to ensure the proper functioning of the project activity and proper monitoring of emission reductions, the staff are trained. The Shift In-charge and Plant In-charge are trained in equipment operation, data recording, reports writing, operation and maintenance, and emergency procedures in compliance with the monitoring plan. The details of trainings provided during current monitoring period are mentioned under APPENDIX 4: Training Records of the monitoring reports.

## 5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

### 5.1 Baseline Emissions

Baseline emissions for the project activity:

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

$EF_{\text{grid}, \text{CM}, y}$ : Combined margin CO<sub>2</sub> emission factor for grid connected power generation in year y calculated using the latest version of the “Tool to calculate the emission factor for an electricity system version 07.0<sup>24</sup>” (tCO<sub>2</sub>/MWh) (i.e., 0.9368 tCO<sub>2</sub>/MWh).

$EG_{\text{facility}, y}$ : Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)

$BE_y$ : Baseline emissions in year y (tCO<sub>2e</sub>/yr)

Here,

The monitoring period 01-January -2023 to 30-June-2023(inclusive of both the days)

$$EF_{\text{grid}, \text{CM}, y} = 0.9368 \text{ tCO}_{2e} / \text{MWh}$$

<sup>24</sup> <https://cdm.unfccc.int/UserManagement/FileStorage/TJUNP2WBS15MZGYXRD07HE0Q83ILF6>

$$EG_{\text{facility}, y} = 307,159 \text{ MWh}$$

$$BE_y = 307,159 * 0.9368 = 287,746 \text{ tCO}_2\text{e (Rounded Down value)}$$

## 5.2 Project Emissions

As per the approved consolidated Methodology ACM0002 (Version 19.0)<sup>25</sup> para 34: “For most renewable energy power generation project activities,  $PE_y = 0$ . However, some project activities may involve project emissions that can be significant. These emissions shall be accounted for as project emissions by using the following equation:

$$PE_y = PE_{FF, y} + PE_{GP, y} + PE_{HP, y}$$

Where:

$PE_y$  = Project emissions in year y (tCO<sub>2</sub>e/yr)

$PE_{FF, y}$  = Project emissions from fossil fuel consumption in year y (tCO<sub>2</sub>e /yr)

At the project site, a robotic system is used to clean solar panels, which runs on electricity<sup>26</sup>, there are no project emissions from fossil fuel consumption i.e.,  $PE_{FF, y} = 0$ .

$PE_{GP, y}$  = Project emissions from the operation of dry, flash steam or binary geothermal power plants in year y (t CO<sub>2</sub>e/yr)

$PE_{HP, y}$  = Project emissions from water reservoirs of hydro power plants in year y (t CO<sub>2</sub>e/yr)”

For most renewable energy power generation project activities,  $PE_y = 0$

The project activity involves in harnessing solar power, renewable source of energy. As per the applied methodology the project emissions are considered as Zero. Hence,  **$PE_y = 0$**

## 5.3 Leakage Emissions

As per the approved consolidated Methodology ACM0002 (Version 19.0) para 56 “No other leakage emissions are considered. The emissions potentially arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g., extraction, processing, transport etc.) are neglected.”

The project activity involves in harnessing solar power, renewable source of energy. As per the applied methodology the leakage emissions are considered as Zero. Hence,  $LE_y = 0$ .

<sup>25</sup> <https://cdm.unfccc.int/UserManagement/FileStorage/58IAGB7SZUDE02VN6LYM30K41HFPRQ>

<sup>26</sup> The power required by the robotic system is included in the project's auxiliary consumption, which is included in the project's electricity imports. Emission reductions are determined based on net power generation which is calculated after subtracting import values from the energy exports. Hence there are no project emissions related to cleaning of solar panels.

## 5.4 GHG Emission Reductions and Carbon Dioxide Removals

As per the approved consolidated Methodology ACM0002 (Version 19.0)<sup>27</sup> para 57, emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y$$

Where;

$ER_y$  = Emission Reduction in tCO<sub>2</sub>/year

$BE_y$  = Baseline emission in tCO<sub>2</sub>/year

$PE_y$  = Project emissions in tCO<sub>2</sub>/year

$LE_y$  = Leakage emissions in tCO<sub>2</sub>/year

### Baseline Emission ( $BE_y$ )

The baseline emissions are the product of electrical energy baseline  $EG_{PJ, y}$  expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor.

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

Where;

$EG_{PJ, y}$  = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the project activity in year y (MWh)

As project activity is the installation of a Greenfield power plant, hence  $EG_{PJ, y} = EG_{facility, y}$

The notation of same parameters  $EG_{PJ, y}$  can be  $EG_{facility, y}$  as project activity is installation of a greenfield power plant.

$EG_{facility, y}$  = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh).

### Project Emission ( $PE_y$ )

As per para 34 of the applied methodology ACM0002 (Version-19.0)<sup>28</sup>, no project emissions are considered in the project activity.

Hence, project emissions  $PE_y = 0$  tCO<sub>2e</sub>

As per para 56 of the applied methodology ACM0002 (Version-19.0), no leakage emissions are considered in the project activity.

Hence, Leakage emissions  $LE_y = 0$  tCO<sub>2e</sub>

Therefore,  $ER_y = BE_y$

| Vintage period | Baseline emissions (tCO <sub>2e</sub> ) | Project emissions (tCO <sub>2e</sub> ) | Leakage emissions (tCO <sub>2e</sub> ) | Reduction VCU (tCO <sub>2e</sub> ) | Removal VCU (tCO <sub>2e</sub> ) | Total VCU (tCO <sub>2e</sub> ) |
|----------------|-----------------------------------------|----------------------------------------|----------------------------------------|------------------------------------|----------------------------------|--------------------------------|
|----------------|-----------------------------------------|----------------------------------------|----------------------------------------|------------------------------------|----------------------------------|--------------------------------|

<sup>27</sup> <https://cdm.unfccc.int/UserManagement/FileStorage/58IAGB7SZUDE02VN6LYM30K41HFPRO>

<sup>28</sup> <https://cdm.unfccc.int/UserManagement/FileStorage/58IAGB7SZUDE02VN6LYM30K41HFPRO>

|                            |                |          |          |                |          |                |
|----------------------------|----------------|----------|----------|----------------|----------|----------------|
| 01-Jan-2024 to 30-Jun-2024 | 287,746        | 0        | 0        | 287,746        | 0        | 287,746        |
| <b>Total</b>               | <b>287,746</b> | <b>0</b> | <b>0</b> | <b>287,746</b> | <b>0</b> | <b>287,746</b> |

For projects required to assess permanence risk:

Since the project activity does not fall under the AFOLU (Agriculture, Forestry, and Other Land Use) or Geologic Carbon Storage (GCS) project categories it is a solar power project activity. Hence, it is not required to assess the permanence risk. Therefore, the following tables (i) and (ii) are not applicable.

| Vintage period             | Ex-ante estimated reductions/removals | Achieved reductions/removals | Percent difference | Explanation for the difference                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------|---------------------------------------|------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 01-Jan-2024 to 30-Jun-2024 | 205,771                               | 287,746                      | 39.84%             | The observed 39.84% increase in energy generation compared to the initial estimate can be attributed to several interconnected factors. Firstly, Jaisalmer experienced higher-than-anticipated solar irradiation density, resulting in a greater influx of solar energy to the photovoltaic (PV) modules. This increase in irradiation density directly contributed to higher energy output from the solar panels. |
| <b>Total</b>               | <b>205,771</b>                        | <b>287,746</b>               | <b>39.84%</b>      |                                                                                                                                                                                                                                                                                                                                                                                                                    |

Additionally, the region's ambient temperatures were lower than expected, which enhanced the efficiency of the solar PV modules. Cooler temperatures reduce thermal losses within the PV systems, leading to more effective energy conversion. The favorable climatic conditions in Jaisalmer also resulted in reduced atmospheric attenuation. With lower levels of dust and particulate matter in the atmosphere, more solar radiation was able to reach the panels without significant scattering or absorption.

Furthermore, the project site maintained optimal conditions with minimal shading, ensuring that the solar panels operated close to their maximum potential throughout the period. These combined factors—higher irradiation density, improved module efficiency due to lower temperatures, and reduced atmospheric attenuation—have led to the observed increase in energy generation beyond the estimated values.

# APPENDIX 1: COMMERCIALY SENSITIVE INFORMATION

There is no Commercially Sensitive Information applicable to the current monitoring period, therefore this appendix is not applicable.

| Section   | Information | Justification |
|-----------|-------------|---------------|
| <u>NA</u> | NA          | NA            |

## APPENDIX 2: METER DETAILS

The power generated by the project is evacuated through two feeders with a capacity of 125 MW each. The voltage is initially generated at 800V and stepped up to 33 kV using transformers. The power is then transmitted through two feeders, connecting the power plant to the Bhensara substation. The Jodhpur Vidyut Vitaran Nigam Limited (JDVNL) is responsible for evacuating the power from the project and integrating it into the Indian grid system for distribution. Energy billing meter installed at the 400/220kV GSS (Grid Substation) located at Bhensara, Jaisalmer, Rajasthan.

The energy meters are calibrated once every five years. The calibration frequency is in line with the registered VCS PD version 02 dated 19-December-2019. The calibration process is also in line with Article 7 para 7.1.1 of the Power Purchase Agreement “For installation of Meters, Meter testing, Meter calibration and Meter reading and all matters incidental thereto, the SPD and SECI shall follow and be bound by the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006; the Grid Code, as amended and revised time to time.” As per para 1 (b) under section 18 of Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, “All interface meters shall be tested at least once in five years.”

The details of energy meters along with calibration dates are mentioned below:

| Meter   | S. No.   | Cert. No.      | Class | Calibration Dates | Due Date <sup>29</sup> | Name of the Entity                  |
|---------|----------|----------------|-------|-------------------|------------------------|-------------------------------------|
| Main    | RJB99499 | YML/9704/13576 | 0.2S  | 22-March-2024     | 21-March-2029          | Yash Metrology Laboratory Pvt. Ltd. |
| Check   | RJB99500 | YML/9704/13577 | 0.2S  | 22-March-2024     | 21-March-2029          | Yash Metrology Laboratory Pvt. Ltd. |
| Standby | RJB99501 | YML/9704/13578 | 0.2S  | 22-March-2024     | 21-March-2029          | Yash Metrology Laboratory Pvt. Ltd. |

The above shown meters were previously calibrated on 15-March-2023 which as per the CEA notification is applicable till 14-March-2028. However, as a good practice, the same has been recalibrated.

<sup>29</sup> Central Electricity Authority notification dated 23rd December, 2019, paragraph 14 states that all the meters shall be tested for routine accuracy at least once in five years and recalibrated if required. PP however follows a good practice and calibrates the meters every year and as per the CEA notification the meters calibration is valid within the 5 years from the date of calibration.

[https://cea.nic.in/wp-content/uploads/2020/02/CEA\\_metering\\_regulation\\_amendment\\_2019.pdf](https://cea.nic.in/wp-content/uploads/2020/02/CEA_metering_regulation_amendment_2019.pdf)

## APPENDIX 3: BREAKDOWN DETAILS

The plant was operational for a total 2,184 hours in the current monitoring period i.e. from 01-January-2024 to 30-June-2024. There are no such events during operation of the project activity that may impact the GHG emission reductions or removals in the monitoring period. There were few minor breakdowns occurred due to scheduled maintenance activities and some other reasons. However, the plant was not totally shut down during breakdown hours, only the affected parts were shut down. Total breakdown hours for the current monitoring period are 548.75 hours. The details of the breakdown/downtime with description are mentioned below:

| Month         | Equipment | BD Duration (Hrs.) | Description                        |
|---------------|-----------|--------------------|------------------------------------|
| January-2024  | String    | 3.95               | Ground Fault                       |
|               |           | 1.12               | MC 4 Burn                          |
|               |           | 6.95               | MC 4 Open                          |
|               |           | 0.52               | Module Damage                      |
|               | Inverter  | 118.25             | Ground Fault                       |
|               |           | 3.70               | Cable Burn                         |
|               |           | 14.80              | MC 4 Burn                          |
|               |           | 2.52               | String Cable Burn                  |
|               |           | 7.95               | Y-Con. Burn                        |
| February-2024 | String    | 7.08               | Ground Fault                       |
|               |           | 14.20              | Low Insulation Resistance          |
|               |           | 4.67               | MC 4 Open                          |
|               | Inverter  | 43.88              | Low Insulation Resistance          |
|               |           | 4.70               | Low Insulation Resistance/MPPT OFF |
|               |           | 3.15               | Y-Con. Burn                        |
| March-2024    | Inverter  | 3.02               | Device Fault                       |

|            |          |        |                                          |
|------------|----------|--------|------------------------------------------|
|            |          | 0.30   | Manual Shutdown/<br>Inverter replacement |
| April-2024 |          | 243.50 | Connection Melt                          |
|            |          | 2.17   | Device Fault                             |
|            |          | 0.33   | Manual Shutdown/<br>Inverter replacement |
| May-2024   | -        | -      | -                                        |
| June-2024  | Inverter | 9.95   | Abnormal Residual<br>Current             |
|            |          | 2.12   | ACDB MCCB Tripped                        |
|            |          | 26.20  | Device fault                             |
|            |          | 11.45  | Low Insulation<br>Resistance             |
|            |          | 1.57   | Manual Shutdown                          |
|            |          | 0.78   | Shutdown                                 |
|            | TS-01    | 1.93   | Shutdown                                 |
|            | TS-11    | 0.77   | IDT Tripped                              |
|            | TS-02    | 7.23   | IDT Tripped                              |

## APPENDIX 4: TRAINING RECORDS

| S. No. | Date             | Training                                                        |
|--------|------------------|-----------------------------------------------------------------|
| 1.     | 04-January-2024  | Permit to work procedure                                        |
| 2.     | 06-January-2024  | Lifesaving rules                                                |
| 3.     | 08-January-2024  | Fire Safety management                                          |
| 4.     | 11-January-2024  | HSSE & SP Handholding                                           |
| 5.     | 18-January-2024  | Fault Identification method from CB to String                   |
| 6.     | 18-January-2024  | Defensive driving                                               |
| 7.     | 19-January-2024  | Road accident (Mock Drill)                                      |
| 8.     | 20-January-2024  | Preventing theft & BBS                                          |
| 9.     | 20-January-2024  | SPRNG Guidelines on wildlife management                         |
| 10.    | 25-January-2024  | Inverter Overview and operation including parts and flow charts |
| 11.    | 27-January-2024  | GRM & UA & UC Training                                          |
| 12.    | 31-January-2024  | Electric Shock Mock Drill                                       |
| 13.    | 03-February-2024 | LOTO Procedure & Use of PPEs                                    |
| 14.    | 04-February-2024 | ESG Training                                                    |
| 15.    | 05-February-2024 | BBS Training                                                    |
| 16.    | 05-February-2024 | First Aid & CPR                                                 |
| 17.    | 11-February-2024 | Material handling & Storage                                     |
| 18.    | 12-February-2024 | Incident & Accident investigation procedure                     |
| 19.    | 14-February-2024 | First Aid & CPR                                                 |
| 20.    | 15-February-2024 | Fire Fighting                                                   |
| 21.    | 16-February-2024 | HSSE General discussion and awareness training                  |

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| 22. | 20-February-2024 | Frisking                                     |
| 23. | 27-February-2024 | Waste handling/management plan               |
| 24. | 28-February-2024 | 5s Management training                       |
| 25. | 28-February-2024 | Awareness training on animals and snake bite |
| 26. | 05-March-2024    | Firefighting trainings demonstration         |
| 27. | 12-March-2024    | Material/Input/Prevent Theft                 |
| 28. | 15-March-2024    | Night Work Activities                        |
| 29. | 17-March-2024    | Night Work Activities                        |
| 30. | 17-March-2024    | Electrical Safety                            |
| 31. | 21-March-2024    | Heat Stress (Mock Drill)                     |
| 32. | 23-March-2024    | Incident management system                   |
| 33. | 23-March-2024    | Electrical Safety Solar O&M                  |
| 34. | 23-March-2024    | General awareness LOTO Procedure             |
| 35. | 29-March-2024    | Incident management system                   |
| 36. | 29-March-2024    | Electrical Safety Solar O&M                  |
| 37. | 30-March-2024    | LOTO Procedure & Use of PPEs                 |
| 38. | 30-March-2024    | PTW Training                                 |
| 39. | 30-March-2024    | Patrolling, Guarding and monitoring premises |
| 40. | 01-April-2024    | Heat stress mock drill                       |
| 41. | 02-April-2024    | Kaizen awareness & reporting                 |
| 42. | 02-April-2024    | Wildlife management training                 |
| 43. | 04-April-2024    | Snake and Scorpion Bite                      |
| 44. | 06-April-2024    | Use of PPEs                                  |
| 45. | 19-April-2024    | Fire fighting                                |

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| 46. | 19-April-2024 | Use of Crowd Control equipment               |
| 47. | 22-April-2024 | Mock Drill Snake bite                        |
| 48. | 23-April-2024 | Patrolling, Guarding and monitoring premises |
| 49. | 25-April-2024 | Fire Fighting Mock drill                     |
| 50. | 27-April-2024 | Lock-out & Tag Out training                  |
| 51. | 28-April-2024 | Permit to work procedure                     |
| 52. | 14-May-2024   | SPRNG Guidelines on wildlife management      |
| 53. | 20-May-2024   | Spillage of Oil mock drill                   |
| 54. | 20-May-2024   | Safety and Defensive driving                 |
| 55. | 08-June-2024  | Oil Spillage Mock Drill                      |
| 56. | 22-June-2024  | Traffic Management training                  |
| 57. | 24-June-2024  | Emergency response & Crisis management       |
| 58. | 27-June-2024  | Awareness training on Snake bite             |