



# PROJECT CONCEPT NOTE

## CARBON OFFSET UNIT (CoU) PROJECT



Title	:	0.99 MW Solar Power Project by Inductotherm (India) Private Limited
Version	:	2.0
PCN Date	:	04/09/2025
CoU Issuance Period	:	3 years, 4 months
Monitoring Duration	:	01/09/2021 to 31/12/2024



Project Concept Note (PCN)  
CARBON OFFSET UNIT (CoU) PROJECT

BASIC INFORMATION	
Title of the project activity	0.99 MW Solar Power Project by Inductotherm (India) Private Limited
Scale of the project activity	Small Scale
Completion date of the PCN	24/08/2025
Project participants	Green Shift Climate Solutions (Representor) Inductotherm (India) Private Limited (Project Proponent)
Host Party	India
Applied methodologies and standardized baselines	Applied Baseline Methodology: AMS-I.D : “Grid connected renewable electricity generation”, version 18  Standardized Methodology: Not Applicable.
Sectoral scopes	01 Energy industries (Renewable/Non-Renewable Sources)
Estimated amount of total GHG emission reductions	To be estimated during verification [An ex-ante estimate is 1443 CoUs per year]

## SECTION A. Description of project activity

### A.1. Purpose and general description of Carbon offset Unit (CoU) project activity >>

The project activity titled under UCR is “0.99 MW Solar PV Installation by Inductotherm (India) Private Limited” which is a grid connected solar power project located at Plot no SM-06, Sanand-II Industrial estate, Village-Bol (Sanand), Taluka-Sanand, District-Ahmedabad 382 170. The promoter of the project is Inductotherm (India) Private Limited (Herein after called as Project Proponent or “PP”). The Project is an operational activity with continuous reduction of GHG, currently being applied under “Universal Carbon Registry” (UCR).

The details of the registered project are as follows:

#### A.1.1 Purpose of the project activity:

The purpose of the proposed project activity is to generate electricity using a clean and renewable source of energy i.e., solar radiation. The proposed project activity of 0.99 MW (i.e. 990 kW) is installation and operation of solar power plant at Plot no SM-06, Sanand-II Industrial estate, Village-Bol (Sanand), Taluka-Sanand, District-Ahmedabad are per details listed below:

Village	Taluka	District	Type	Total Installed Capacity in AC Kw	Commissioning Date
Bol	Sanand	Ahmedabad	Roof top	900	23/07/2021

The project will generate approximately 16,02,823 Kwh of electricity per annum. The net generated electricity from the project activity is for captive consumption by the project proponent. Wheeling agreement is signed between PP and Uttar Gujarat VIJ Company Limited-UGVCL. The project activity has been helping in greenhouse gas (GHG) emission reduction by using renewable resources (Roof-top grid connected solar power project) for generating power which otherwise would have been generated using grid mix power plants, which is dominated by fossil fuel based thermal power plants. The estimated annual average and the total CO<sub>2</sub> emission reduction by the project activity is expected to be 1443 t/CO<sub>2</sub>, whereas actual emission reduction achieved during the first CoU shall be submitted as a part of first monitoring and verification.

Since the project activity generates electricity through Roof-top grid connected solar power project, a clean renewable energy source it will not cause any negative impact on the environment and thereby contributed to climate change mitigation efforts.

#### Contribution of project activity to Sustainable development:

The project activity is a green field activity where grid power is the baseline. The Indian grid system has been predominantly dependent on fossil fuel powered plants. Renewable power generation is gradually contributing to the share of clean and green power in the grid; however, the grid emission factor is still on the higher side which defines the grid as distinct baseline.

The Government of India has stipulated following indicators for sustainable development in the interim approval guidelines for such projects which are contributing to GHG mitigations. The Ministry of Environment, Forests & Climate Change, has stipulated economic, social, environment and technological well-being as the four indicators of sustainable development. It has been envisaged that the project shall contribute to sustainable development using the following ways:

**Social well-being:** The project would help in generating direct and indirect employment benefits accruing out of ancillary units for manufacturing towers for erection of the Roof-top grid connected solar power project and for maintenance during operation of the project activity. It will lead to development of infrastructure around the project area in terms of improved road network etc. and will also directly contribute to the development of renewable infrastructure in the region.

**Economic well-being:** The project is a clean technology investment decided based on carbon revenue support, which signifies flows of clean energy investments into the host country. The project activity requires temporary and permanent, skilled and semi-skilled manpower at the project location; this will create additional employment opportunities in the region. The generated electricity will be utilised for captive consumption, thereby reducing the demand from the grid. In addition, improvement in infrastructure will provide new opportunities for industries and economic activities to be setup in the area. Apart from getting better employment opportunities, the local people will get better prices for their land, thereby resulting in overall economic development.

**Technological well-being:** The project activity employs state of art technology i.e., 0.99 MW WTGs which has high power generation potential with optimized utilization of land. The successful operation of project activity would lead to promotion of this technology and would further push R&D efforts by technology providers to develop more efficient and better machinery in future. Hence, the project leads to technological well-being.

**Environmental well-being:** The project activity will generate power using zero emissions Roof-top grid connected solar power project facility which helps to reduce GHG emissions and specific pollutants like SO<sub>x</sub>, NO<sub>x</sub>, and SPM associated with the conventional thermal power generation facilities. The project utilizes Roof-top grid connected solar power project for generating electricity which is a clean source of energy. The project activity will not generate any air pollution, water pollution or solid waste to the environment which otherwise would have been generated through fossil fuels. Thus, the project causes no negative impact on the surrounding environment contributing to environmental well-being.

**With regards to ESG credentials:**

At present specific ESG credentials have not been evaluated, however, the project essentially contributes to various indicators which can be considered under ESG credentials. Some of the examples are as follows:

**Under Environment:**

Environmental criteria may include a company's energy use, waste, pollution, natural resource conservation, and treatment of animals etc. For the project proponent, energy use pattern is now based on renewable energy due to the project and it also contributes to GHG emission reduction and conservation of depleting energy sources associated with the project baseline. Also, the criteria can be further evaluated on the basis of any environmental risks which the company might face and how those risks are being managed by the company. Here, as the power generation will be based on Roof-top grid connected solar power project, the risk of environmental concerns associated with non-renewable power generation and risk related to increasing cost of power etc. are now mitigated. Hence, project contributes to ESG credentials.

**Under Social:**

Social criteria reflect on the company's business relationships, qualitative employment, working conditions with regard to its employees' health and safety, interests of other stakeholders' etc. With respect to this project, the Project Proponent has robust policies in place to ensure equitable employment, health & safety measures, local jobs creation etc. Also, the organizational CSR

activities directly support local stakeholders to ensure social sustainability. Thus, the project contributes to ESG credentials.

### Under Governance:

Governance criteria relates to overall operational practices and accounting procedure of the organization. With respect to this project, the Project Proponent practices a good governance practice with transparency, accountability and adherence to local and national rules & regulations etc. This can be further referred from the company's annual report. Also, the project activity is a Roof-top grid connected solar power project owned and managed by the proponent for which all required NOCs and approvals are received. The electricity generated from the project can be accurately monitored, recorded and further verified under the existing management practice of the company. Thus, the project and the proponent ensure good credentials under ESG.

## A.2 Do no harm or Impact test of the project activity>>

There was no harm identified from the project and hence no mitigations measures are applicable.

Rational: as per 'Central Pollution Control Board (Ministry of Environment & Forests, Govt. of India)', final document on revised classification of Industrial Sectors under Red, Orange, Green and White Categories (07/03/2016), it has been declared that Roof-top grid connected solar power project activity falls under the "White category". White Category projects/industries do not require any Environmental Clearance such as 'Consent to Operate' from PCB as such project does not lead to any negative environmental impacts. Additionally, as per Indian Regulation, Environmental and Social Impact Assessment is not required for Roof-top grid connected solar power project.

Additionally, there are social, environmental, economic and technological benefits which contribute to sustainable development. The key details have been discussed in the previous section. There are social, environmental, economic and technological benefits which contribute to sustainable development.

## A.3. Location of project activity >>

Country: India

District: Ahmedabad

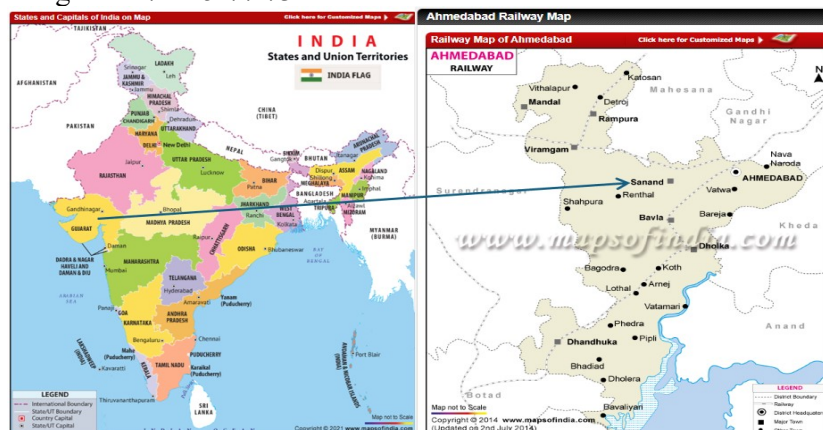
Village: Bol

Taluka: Sanand

State: Gujarat

Latitude 22°99'22.78"N,

Longitude 72°25'77.73"E



(Courtesy: google map and images)

#### **A.4. Technologies/measures >>**

The project activity is using clean renewable solar energy to produce electricity. The applied technology is considered to be one of the most environment friendly technologies available as the operation of the solar photovoltaic does not emit any GHGs or any other harmful gases unlike the operation of conventional power plants.

Photovoltaic module consists of photovoltaic cells connected by circuits and sealed in an environmentally protective laminate, which forms the fundamental building blocks of the complete PV generating unit. Several PV panels mounted on a frame are termed as PV Array. The project activity has used the reliable and proven technology to ensure that an environmentally safe and sound technology is only being implemented in the proposed project activity leading to the GHG reduction.

In the absence of the project activity, the equivalent amount of electricity imported from the NEWNE grid would have been generated from the NEWNE grid, which is predominantly based on fossil fuels<sup>1</sup>, hence baseline scenario of the project activity is the grid-based electricity system, which is also the pre-project scenario.

Salient features of the solar roof top technology are:

Parameter	Description
Total number of Photovoltaic Modules	2200
Rating of Photovoltaic Module	450
Module make	LONGI
Technology	MONO PERC HALF CUT
No. of Inverter	9
Invertor	STRING
Invertor make	SOLIS
PV Connectors	MC4
Energy meter	0.5 s
Energy meter make	Secure

#### **A.5. Parties and project participants >>**

Party (Host)	Participants
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India	<p><b>GreenShift Climate Solutions (Representator)</b>  Contact Person: Sonia Bhatt  Mobile : 8735000438  Address : 402, Akhand Anand avenue, Anand Nagar, charwda road, Vapi 396 191</p> <p><b>Inductotherm (India) Private Limited(Project Owner)</b>  Plot no SM-06, Sanand-II Industrial estate, Village-Bol (Sanand), Taluka-Sanand, District-Ahmedabad 382 170</p>
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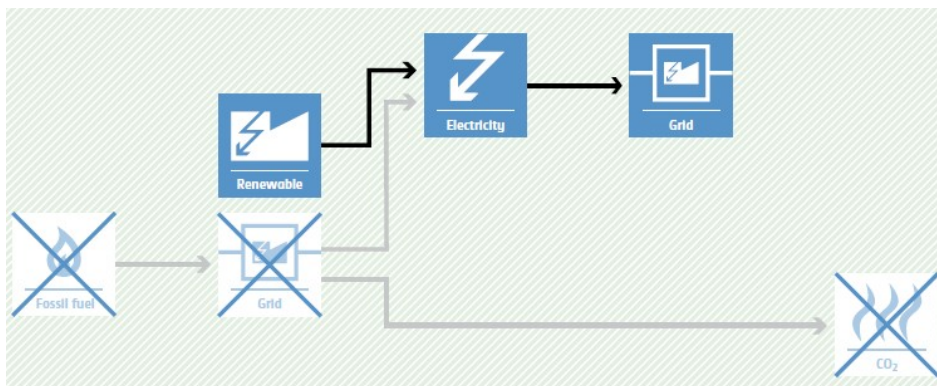
#### A.6. Baseline Emissions>>

The baseline scenario identified at the PCN stage of the project activity is: GRID.

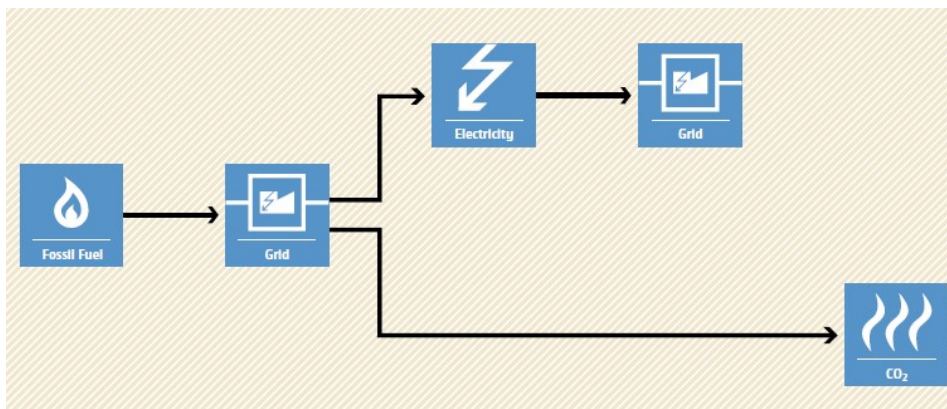
In the absence of the project activity, the equivalent amount of electricity would have been imported from the regional grid (which is connected to the unified Indian Grid system (NEWNE Grid)), which is carbon intensive due to predominantly sourced from fossil fuel-based power plants. Hence, baseline scenario of the project activity is the grid-based electricity system, which is also the pre-project scenario.

Schematic diagram showing the baseline scenario:

#### Project Scenario:



#### Baseline Scenario:



#### A.7. Debundling>>

This project activity is not a debundled component of a larger project activity.



## SECTION B. Application of methodologies and standardized baselines

### B.1. References to methodologies and standardized baselines >>

#### SECTORAL SCOPE

01 Energy industries (Renewable/Non-renewable sources)

#### TYPE

I - Renewable Energy Projects

#### CATEGORY-

AMS. I.D. (Title : “Grid connected renewable electricity generation”, version 18

### B.2. Applicability of methodologies and standardized baselines >>

The project activity involves the generation of grid-connected electricity from the construction and operation of a new solar power-based power project. The project activity has an installed capacity of 0.99 MW which will qualify for a small-scale project activity under Type-I of the small-scale methodology. The project status is corresponding to the methodology AMS-I.D., version 18, and the applicability of the methodology is discussed below:

Applicability Criterion	Project Case
1. This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass: (a) Supplying electricity to a national or a regional grid; or (b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.	The project activity is a 0.99 MW Roof-top grid connected solar power project that generates and wheels (supply) renewable electricity through NEWNE grid (currently identified as Unified Indian grid system) to its unit for captive consumption as per wheeling agreement signed between UGVCL and PP. Hence, the project activity meets the given applicability criterion as well as satisfies the applicability illustration mentioned in AMS-I.D. version 18.
2. This methodology is applicable to project activities that: (a) Install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant); (b) Involve a capacity addition in (an) existing plant(s); (c) Involve a retrofit of (an) existing plant(s); or (d) Involve a replacement of (an) existing plant(s).	The project activity is installation of new WTG's. PP doesn't have any WTG at the project site prior to the implementation of the project activity. The option (a) of applicability criteria 2 is applicable as project is a Greenfield plant / Unit. Hence the project activity meets the given applicability criterion.
3. Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology: (a) The project activity is implemented in existing reservoir, with no change in the volume	The project activity is a Roof-top grid connected solar power project power plant. Hence, not applicable

<p>of the reservoir; or</p> <p>(b) The project activity is implemented in existing reservoir, where the volume of the reservoir(s) is increased and the power density as per definitions given in the project emissions section, is greater than 4 W/m<sup>2</sup>.</p> <p>(c) The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m<sup>2</sup></p>	
<p>4. If the new unit has both renewable and non-renewable components (e.g., a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.</p>	<p>The project activity is only 0.99 MW Roof-top grid connected solar power project based renewable electricity generation project. It does not include any non-renewable unit and cofiring system.</p>
<p>5. Combined heat and power (co-generation) systems are not eligible under this category</p>	<p>The project activity does not involve combined heat and power generation system as it is only a Roof-top grid connected solar power project</p>
<p>6. In the case of project activities that involve the capacity addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.</p>	<p>It is a Greenfield project and not the extension of an existing renewable energy facility.</p>
<p>7. In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement power plant/unit shall not exceed the limit of 15 MW.</p>	<p>The project activity is not the retrofitting or replacement of an existing facility for renewable energy generation. Hence, this criterion is not applicable.</p>

### **B.3. Applicability of double counting emission reductions >>**

There is no double accounting of emission reductions in the project activity due to the following reasons:

- Project is uniquely identifiable based on its location coordinates
- Project has dedicated commissioning certificate and connection point
- Project is associated with energy meters which are dedicated to the consumption point for project developer.

### **B.4. Project boundary, sources and greenhouse gases (GHGs)>>**

As per applicable methodology AMS-ID Version 18 “The spatial extent of the project boundary included the project power plant and all power plants connected physically to the electricity systems that the project power plant is connected to.”

Thus, the project boundary includes the Roof-top grid connected solar power project and the India grid system.

Source		GHG	Included?	Justification/Explanation
Baseline	Grid Connected electricity generation	CO2	Yes	Main emission source
		CH4	No	Minor emission source
		N2O	No	Minor emission source
		Other	No	No other GHG emissions were emitted from the project
Project	Greenfield Roof-top grid connected solar power project	CO2	No	No CO2 emissions are emitted from the project
		CH4	No	Project activity does not emit CH4
		N2O	No	Project activity does not emit N2O
		Other	No	No other emissions are emitted from the project

#### B.5. Establishment and description of baseline scenario >>

This section provides details of emission displacement rates/coefficients/factors established by the applicable methodology selected for the project.

As per para 10 of the approved consolidated methodology AMS-I.D. Version 18, if the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following:

**“The baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid”.**

The project activity involves setting up of a new Roof-top grid connected solar power project to harness the green power from Solar energy and to use for captive purpose via grid interface through wheeling arrangement. In the absence of the project activity, the equivalent amount of power would have been supplied by the Indian grid, which is fed mainly by fossil fuel fired plants. The power produced at grid from the other conventional sources which are predominantly fossil fuel based. Hence, the baseline for the project activity is the equivalent amount of power produced at the Indian grid.

A "grid emission factor" refers to a CO2 emission factor (tCO2/MWh) which will be associated with each unit of electricity provided by an electricity system. The UCR recommends an emission factor of 0.9 tCO2/MWh for the 2014- 2020 years as a fairly conservative estimate for Indian projects not previously verified under any GHG program. Hence, the same emission factor has been considered to calculate the emission reduction under conservative approach.

## Net GHG Emission Reductions and Removals

Thus,  $ER_y = BE_y - PE_y - LE_y$

Where:

$ER_y$  = Emission reductions in year y (tCO<sub>2</sub>/y)

$BE_y$  = Baseline Emissions in year y (t CO<sub>2</sub>/y)

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

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

## Baseline Emissions

Baseline emissions include only CO<sub>2</sub> emissions from electricity generation in power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants.

The baseline emissions are to be calculated as follows:

$$BE_y = EGPJ_{,y} \times EF_{grid,y}$$

Where:

$BE_y$  = Baseline emissions in year y (t CO<sub>2</sub>)

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

$EF_{grid,y}$  = UCR recommended emission factor of 0.9 tCO<sub>2</sub>/MWh has been considered.

(Reference: General Project Eligibility Criteria and Guidance, UCR Standard, page 4)

## Project Emissions

As per AMS-I.D. version-17, only emission associated with the fossil fuel combustion, emission from operation of geo-thermal power plants due to release of non-condensable gases, emission from water reservoir of Hydro should be accounted for the project emission. Since the project activity is a Roof-top grid connected solar power project, project emission for renewable energy plant is nil.

**Thus,  $PE_y = 0$ .**

## Leakage

As per paragraph 22 of AMS-I.D. version-17, 'If the energy generating equipment is transferred from another activity, leakage is to be considered.' In the project activity, there is no transfer of energy generating equipment and therefore the leakage from the project activity is considered as zero.

**Hence,  $LE_y = 0$**

The actual emission reduction achieved during the first CoU period shall be submitted as a part of first monitoring and verification. However, for the purpose of an ex-ante estimation, following calculation has been submitted:

Estimated annual baseline emission reductions (BEy)

= 1,603MWh/year \*0.9 tCO2/MWh

= 1,443 tCO2/year (i.e., 1,443 CoUs/year)

#### **B.6. Prior History>>**

The project activity has not applied to any other GHG program for generation or issuance of carbon offsets or credits for the said crediting period.

#### **B.7. Changes to start date of crediting period >>**

There is no change in the start date of crediting period.

#### **B.8. Permanent changes from PCN monitoring plan, applied methodology or applied standardized baseline >>**

Not Applicable

#### **B.9. Monitoring period number and duration>>**

First Issuance Period: 03 years, 4 months  
01/09/2021 to 31/12/2024

#### **B.8. Monitoring plan>>**

Data and Parameters available at Validation (ex-ante values)

Data/Parameter	UCR Recommended Emission Factor
Data unit	tCO2/Mwh
Description	A "grid emission factor" refers to a CO2 emission factor (tCO2/MWh) which will be associated with each unit of electricity provided by an electricity system. The UCR recommends an emission factor of 0.9 tCO2/MWh for the 2014- 2020 years as a fairly conservative estimate for Indian projects not previously verified under any GHG program. Hence, the same emission factor has been considered to calculate the emission reduction under conservative approach.
Source of data	<a href="https://a23e347601d72166dcd6-16da518ed3035d35cf0439f1cdf449c9.ssl.cf2.rackcdn.com//Documents/UCRStandardNov2021updatedVer2_301121081557551620.pdf">https://a23e347601d72166dcd6-16da518ed3035d35cf0439f1cdf449c9.ssl.cf2.rackcdn.com//Documents/UCRStandardNov2021updatedVer2_301121081557551620.pdf</a>
Value applied	0.9
Measurement methods and procedures	-

Monitoring frequency	Ex-ante fixed parameter
Purpose of data	For the calculation of Emission factor of the Grid
Additional comment	The combined margin emission factor as per CEA database (current version 16, Year 2021) results into higher emission factor. Hence for 2021 vintage UCR default emission factor remains conservative.

Data and Parameters to be monitored. ( ex-post monitoring values)

Data / Parameter:	EG BL <sub>y</sub>
Data unit:	Mwh/Year
Description:	Net electricity supplied to the NEWNE grid facility by the project activity
Source of data:	GEDA Share certificate issued by GETCO (Gujarat Energy Transmission Corporation Limited)
Measurement procedures (if any):	Continuous monitoring and monthly recordings take place. The net electricity supplied by the project activity is taken directly from the share certificate issued by GETCO on monthly basis and will be directly used to estimate the emission reduction. This can be further cross-checked with the invoice receipt. Measurement Procedure:
Monitoring frequency:	Monthly
Value applied	1776
QA/QC procedures:	Calibration of the GETCO Main meters will be carried out once in five years as per National Standards (as per the provision of CEA, India) and faulty meters will be duly replaced immediately as per the provision of power purchase agreement.  The net amount of electricity exported to the grid as per Share certificate issued by GETCO can be cross verified by the monthly bills.
Purpose of data	The Data/Parameter is required to calculate the baseline emission.
Any comment:	All the data will be archived till a period of two years from the end of the crediting period.  Since the renewable power generated from the project is used for captive consumption via wheeling, hence during the monitoring and verification the provision of the wheeling agreement may be referred.