



Tripura Renewable Energy Development Agency (T R E D A),

(A Constituent Organization of Power Department, Government of Tripura),

gyan Bhawan, Pandit Nehru Complex, Gorkhabasti, Agartala, Tripura,

Ph-0381-2325900(Fax), 2326139,email-tredaagartala@gmail.com

No. F. 6(186) / TREDA / NCES / 15/ Pt. - I/261

Date: 10/ 05/2019

To,
The Principal,
Holy Cross College,
Jubatara, Lembucherra
P.O: Mohanpur Road Agartala,
Debendrachandranagar, Pin: 799210,
e-mail: Shajimlcsc@gmail.com

SUB: Beneficiary share for installation of grid connected Solar Photovoltaic Power Plant.

Sir,

Please refer to above.

Your application for installation of 30 KWp grid connected Solar Photovoltaic Power Plant at your College premises has been accepted by TREDA as per guidelines/regulations of TERC/TSECL. After survey of site it is assessed that, 30 KWp Power Plant may be installed at Holy Cross College premises.

The details of cost and beneficiary share etc. is given below:

Sl. No	Item Description	Capacity	Beneficiary share per KWp	Total Beneficiary share
1	Supply, installation & commissioning of grid connected Solar Photovoltaic Power Plant	30 KWp	Rs. 16,201/-	Rs. 4,86,030/-

In this context you are requested kindly to place beneficiary share amounting to Rs. 4,86,030/- (Rupees four lakhs eighty six thousand thirty) only in the shape of Demand Draft payable at Agartala or may be deposited to the S/B Account No. 000112010012465, Tripura State Co-operative Bank Ltd. (TSCBL), Agartala Branch in favour of the Director General & CEO, Tripura Renewable Energy Development Agency for installation of 30 KWp grid connected Solar Photovoltaic Power Plant at your College premises. Cost of Net Meter would be charges extra as per actual.

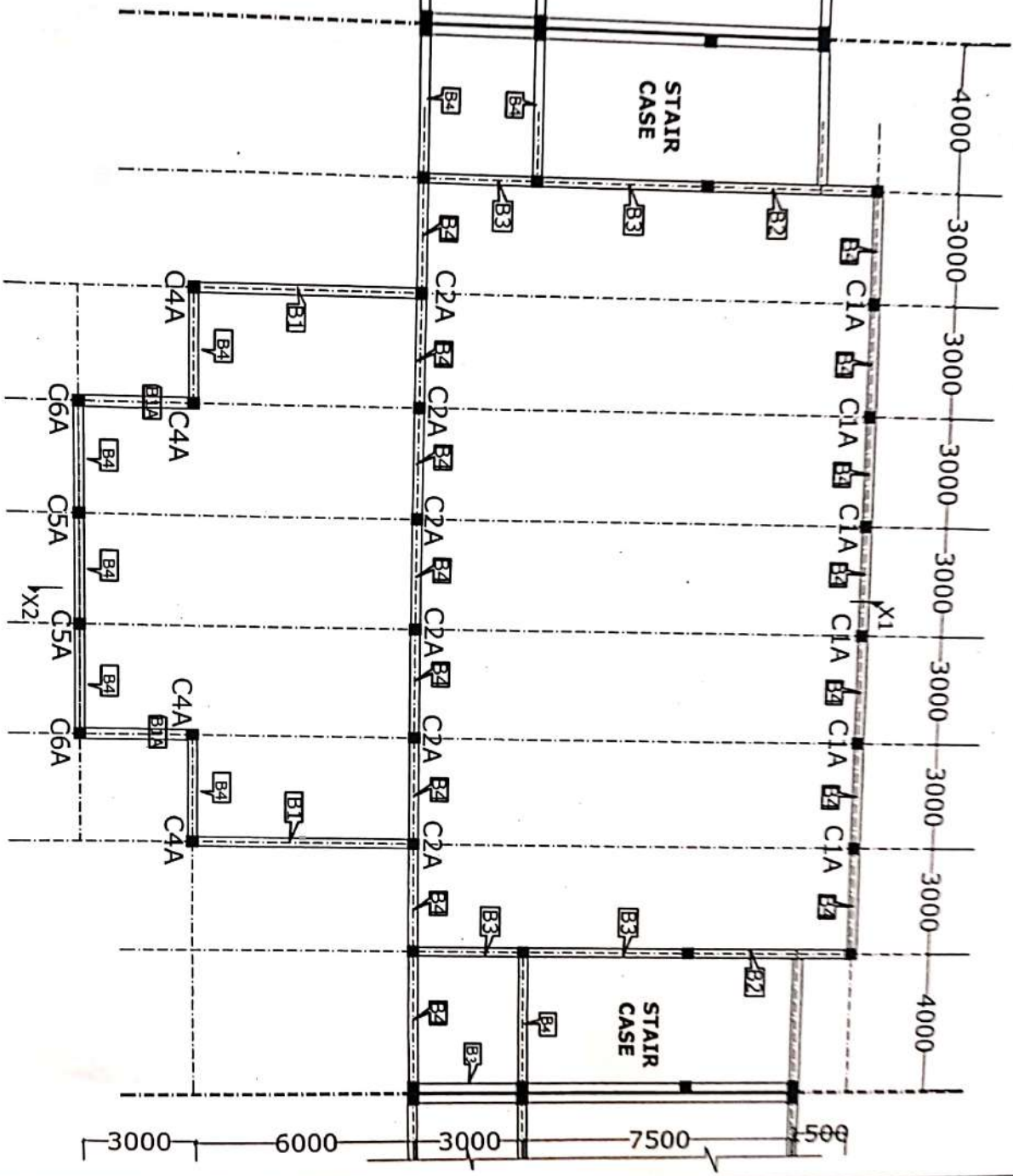
You are also requested kindly to submit payment details to the office of the undersigned within the stipulated period for taking further necessary action from this end.

Yours faithfully

(D. S. DAS)

Joint Director





KEY PLAN AT 4TH FLOOR FOR SOLAR PANEL

PROPOSED CONSTRUCTION OF
 HOLY CROSS COLLEGE, AT
 LEMBUCHERRA, TRIPURA (W).
 BLOCK I PHASE-III Dated Aug 2019
 DETAILS OF 4TH FLOOR
 FOR SOLAR PANEL.

COL MKD	SECTION AT GROUND FLOOR	LATERAL TIES	
		TYPE	SPACING
C1A			<p>8Φ at 100 mm c/c upto 600 mm from top & bottom of beams. In middle portion the spacing shall be 200 c/c</p>
C2A			
C4A			
C5A			
C6A			

PROPOSED CONSTRUCTION OF
HOLY CROSS COLLEGE, AT
LEMBUCHERRA, TRIPURA (W).

BLOCK I PHASE-III

DETAILS OF 4TH FLOOR
FOR SOLAR PANEL.



INSIGHT CONSULTANTS

**TECHNICAL AND COMMERCIAL QUOTE FOR 50KWp GRID-
TIE ROOFTOP SOLAR POWER PLANT**

DATED:-19/12/2017

To,

PRINCIPAL

HOLY CROSS COLLEGE

JUBATARA, P.O LEMBUCHERRA

TRIPURA WEST

S **SU=Kam[®]** **SOLAR**

INSIGHT CONSULTANTS

**REGISTERED OFFICE:- 40, JAIL ASHRAM ROAD, DHALESHWAR AGARTALA TRIPURA
TELEPHONE: 03812328854 MOBILE: 8794730270**





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Dear Sir,

With reference to the discussion held with you for putting up a On-Grid Solar Roof Top System, we here in submit our most competitive proposal/ quotation for the same for your kind consideration.

Hope this is in-line with your requirements. Please feel free to get in touch with us for any clarifications, if required.

We assure you of our best attention and services at all times. We look forward to a mutually beneficial business relationship with you and hope to get your valued order.

Thanking you and assuring you of our best professional services at all times.

MRINMOY ROY

DIRECTOR

MOBILE: 8794730270

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INTRODUCTION



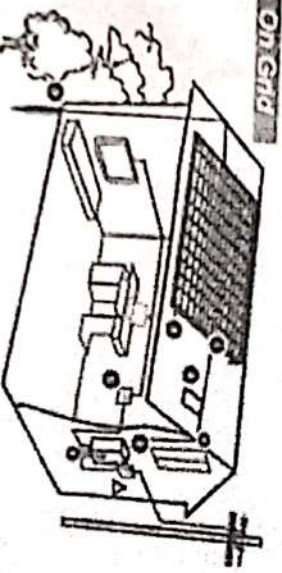
- Reduces your electricity bills
- Generates a passive income
- Guaranteed long life span
- Reduces your carbon use



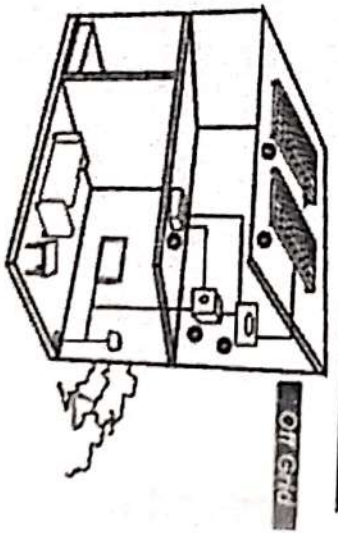
- Brings electricity to remote areas
- Provides electricity during power cuts
- Uses batteries to store power (these are expensive and need to be replaced every 1-5 years)

Requirements

- Existing grid infrastructure
 - Grid company permit
 - Government supported one off investment
-
- Detailed planning process
 - Larger upfront investment
 - Continued investment to extend lifespan



- Solar Modules
- On Grid Solar Inverter
- Mounting Brackets
- DC Isolator
- AC Breaker
- Monitor
- Ground Earth Cable
- PV Earth Clamp
- DC PV Cables
- MC4 Connectors



- Solar Modules
- Mounting Brackets
- Controller
- Off Grid Solar Inverter
- Battery
- DC PV Cables
- MC4 Connectors

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On Grid Systems

On Grid Solar Power System (also known as 'grid tie systems' or 'integrated systems') are connected to the mains power supply just like a regular home. This means that mains power can still be used any time your solar panels generate less electricity than is needed, e.g. at night. In many countries, solar homes can also capitalize on times when the panels generate more electricity than is needed by selling the surplus back to the electricity company -usually at a nice profit.

On Grid Systems usually require:

- Solar panels and an appropriate mounting system,
- Grid tied solar inverter(s) and monitor(s),
- Solar cables and MC4 connectors,
- AC and DC safety isolator switches, and
- Grounding earth cables and clamps.

COMPANY STRATEGY

Our aim is to generate energy for the future. We set global standards in achieving this goal. We develop, plan, build and operate solar plants and systems. Solar power remains the most secure source of energy for the future.

We are active in important core photovoltaic markets with several affiliate companies, and offer its products and services all over TRIPURA & ASSAM.

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- Purpose: To be a leader in solar energy generation industry by providing enhanced services, relationship and profitability to our customers.
- Vision: To provide quality products and services that expectations of our esteemed customer.
- Mission: To build long terms relationships with our customer and clients and provide exceptional customer services by pursuing business through innovation and advanced technology.
- Core Values: We believe in treating our customers with respect and faith. We go through creativity, invention and innovation. We integrate honesty, integrity and business ethics into all aspects of our business functioning.
- Goals: Regional expansion in field of solar energy and develop a strong base of key customers. Increase the assets and investments of the company to support the development of services. To build good reputation in the field of solar energy and become a key player in the industry.

OUR SERVICES

- Site & Project Analyses
- System Design
- Balance of System Selection
- Erection and Commissioning
- Project Management
- Operation and Maintenance



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SCOPE OF WORK

Design & Engineering

- a. System design
- b. Engineering drawings
- c. Detailed Bill of Materials & Project Report

Procurement

- a. Vendor sourcing
- b. Enquiry generation
- c. Ordering & follow up for delivery of materials
- d. Invoice certification

Electrical Works

- a. Wiring of Modules
- b. Cabling from modules to Combiner box
- c. Combiner Box assembly
- d. Cabling from Combiner box to Inverter
- e. Cabling from Inverter to AC Distribution box
- f. Earthing

Civil Work

- a. Module Mounting structure's foundation

Installation Work – Supervision Assistance

- a. PV Module mounting on module mounting structure.
- b. Inverter Installation.
- c. Electrical wiring and testing of all electrical connections before commissioning.



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INSIGHT CONSULTANTS **SYSTEM DESIGN**

DESIGN ASSUMPTIONS

Assumptions that are considered for calculating the energy yield (DC) are listed below:

SL.NO	PARAMETERS	VALUES
1	Tilt Angle – Fixed	23 Degree
2	Shading	No Shading
3	Normal Operating Collector Temperature (NOCT)	35 °C
4	Global Wiring resistance in loss fraction at STC	1.5%
5	Module Quality – Module efficiency loss	0.5%
6	Mismatch losses – Power loss at MPP	2%
7	Array soiling loss	1.5%

APPROXIMATE ANNUAL POWER GENERATION: 50 kWp ON Grid solar power plant will generate approximate 40 KWh with 15.5% efficient PV module and 80% efficient grid tied inverter.

This system is capable of generating 125 units of Electricity in a day given there is sunlight for 4-5hrs. This system is maintenance free as it doesn't include any batteries.



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SL.NO	DESCRIPTION	MAKE	QUANTITY
1	250W/24V SOLAR PANEL 60 CELLS	SU-KAM	200
2	50KWP GRID TIE SOLAR INVERTER	SU-KAM	1
3	Civil Foundation	PCC/RCC	As per requirement
4	Fixed Angle Module Mounting Structure with 80 Micron GI	80 Micron GI Fixed Angle	1 SET
5	DC Junction Box	SURCLE	As per requirement
6	AC Distribution Box	SURCLE	1 NOS
7	Solar Grade DC Cables	PREMIER	As per requirement
8	Flexible AC Cable	POLYCAB/FINOLEX	As per requirement
9	Data Logger with Remote Monitoring at PC	As per inverter manufacturer recommendation	1 NOS
10	Earthing Kit	Chemical Earthing Kit	As per PV PLANT requirement
11	Accessories	Accessories for cable interconnection & installation kit as conduits, cables and DC Connector	As per requirement

PROPOSAL

SL. NO	PRODUCT DESCRIPTION	QUANTITY	MRP	QUOTED RATE	AMOUNT
1	SU KAM 250W/24V SOLAR PANEL	200	₹ 19,590	₹ 10,600	₹ 21,20,000
2	SU KAM 50KWP GRID TIE INVERTER	1	₹ 6,56,290	₹ 4,46,630	₹ 4,46,630
3	SOLAR Balance of System	1	₹ 68,700	₹ 54,000	₹ 54,000
4	DC WIRE 4 SQMM	12	₹ 3,680	₹ 2,150	₹ 44,160
5	STRUCTURE I&C	1	₹ 3,75,000	₹ 3,75,000	₹ 3,75,000
6	PCC AND CENTERING	1	₹ 55,000	₹ 55,000	₹ 55,000

TOTAL SUM:-Thirty Lacs Ninety Four Thousand Seven Hundred Ninety Only/- **₹ 30,94,790**

(THIS SYSTEM WILL BE FREE AFTER 5 YEARS OF USE AS THE RETURN ON INVESTMENT IS 5 YEARS)

Terms and Conditions

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1. Above price is subjected to site visit i.e. price can be go up and go down.
2. The above price quoted included all taxes (GST), installation cost is extra & service cost of 18% will be levied extra.
3. Operation and Maintenance included for 1 year in the above cost after that will decide by mutual consent.
4. Transportation of the material till the project site is included in the above cost.
5. If extra work and component required, will invoice you.
6. Procurement of Components - Minimum 20 days from the date of receipt of commercially clear purchase order with advance payments and schedule acceptance by INSIGHT CONSULTANTS.
7. Project Commissioning Time – Minimum 20-25 working days after delivery of structure at site.
 - a) Complete SPV system- Procurement, Design of the plant, Installation and Commissioning.
 - b) Power feed-in point –Till the AC junction box located inside the premises.
 - c) List of equipment and work plan shall be provided after releasing the purchase order and advance payment within two - four working days.
 - d) Supplier shall abide all labour laws, safety rules, minimum wages act, workmen compensation act and employees provident fund act at third party basis.
9. Scope of work for Client-
 - a) Components and Tools storage insurance at site to be provided by the customer.
 - b) Site of Power Plant to be identified and all necessary approvals for installing a solar plant should be done by customer.
 - c) All the approvals for structure anchoring at roof will be provided by customer.
 - d) Client shall provide location for inverter and electrical equipment installation at site.
 - e) Water and Electricity shall be provided by client.
 - f) Permission for night work, if required should be done by client on priority basis.
- 9) Before releasing the purchase order, employer will do a final meeting to understand about all the components and location, which we use for components installation.

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h) If any modification required then employer will amend immediately during the initial stage meeting and after procurement contractor cannot be change any Components related to this project. If client change any components than supplier will Invoice to client for components and installation.

10. All the specification will be carried out as per MNRE Guidelines and Standard.

11. **Custom Payment Schedule**

SL. NO	PARTICULARS	PAYMENT AMOUNT
1	40% of the total of Equipment during Supply Order	₹ 11,22,916
2	20% of the total of Equipment after completion of structure	₹ 5,18,326
3	40% of the total of Equipment after setup of Equipment	₹ 10,72,916
		₹ 26,64,158
4	Installation Payment 1st Month	₹ 1,26,600
5	Installation Payment 2nd Month	₹ 1,26,600
6	Installation Payment 3rd Month	₹ 1,26,600
		₹ 3,79,800

b) All the payment should be done by wire transfer i.e. NEFT/RTGS.

12. **Work order shall be in name of Insight Consultants.**

13. Force majeure will be subject to standard force majeure condition. 14. Component warranty a) PV Modules: 5 years workmanship 10 years 90% Performance 25 years 80% Performance b) Inverter: Sixty months from the date of commissioning.

15. System warranty System warranty that our design and workmanship is free of defects for one year. The system warranty covers the entire system except manufacturer's defects in material and workmanship of the PV modules and inverters.

16. Validity of offer: 45 days from the date of proposal.

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