



MILAGRES COLLEGE
Kallianpur – 576 114, Udupi District, Karnataka
Web: www.milagrescollegekallianpur.edu.in
Email: milagrescollege@gmail.com

Phone: 0820-2580235

Office of the Principal

87626 90235

Installation of Solar Power Project



MILAGRES CATHEDRAL
KALLIANPUR-576 114

ಮಿಲಗ್ರೆಸ್ ಕಾಥೆಡ್ರಲ್, ಕಲ್ಯಾಣಪುರ-576 114.

Web: www.milagrescollegekallianpur.com
Email: milagrescollege@gmail.com

Office of the Correspondent

Phone : 0820 2580131

Date : 22.09.2020

Notice

The next Managing Committee Meeting of Milagres College is scheduled for Tuesday 29th September 2020 at 03.30 pm in the college Audio Visual hall. You are kindly requested to attend the meeting.

A copy of the Audited financial statement of accounts for the year 2019 – 2020 will be given to you before the meeting for your kind reference.

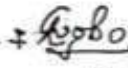
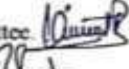

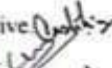


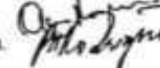

Agenda:

1. Prayer and Welcome
2. Minutes of the Previous meeting.
3. To approve the audited statements of accounts for the year ended on 31.03.2020.
4. Brief report of the college activities.
5. Any other matter with the permission of the chair.

Your's Sincerely

Very Rev. Fr. Lawrence C D'souza
(Correspondent)

Notice communicated to

1. Rt. Rev. Dr. Gerald Isaac Lobo, Bishop of Udupi. 
2. V. Rev. Dr. Baptist Menezes, Vicar General.
3. Rev. Fr. Vincent Crasta, Secretary, Managing Committee. 
4. Dr. Vincent Alva, Principal, Head of the institution. 
5. Rev. Fr. Dr. Prakash Anil Castelino, Member, Staff Representative. 
6. Dr. Gerald Pinto, Member, From the Parish Council Catheradal. 
7. Mr. Jeffrey Dias, Member, From the Parish Council Catheradal. 
8. Mr. Owen Rodrigues, Member, From the Parish. 
9. Prof. Hilda Rodrigues, Member, From the Parish. 

1) Presentation of the Budget for the Academic Year 2020-2021
Principal Dr Vincent Alva, presented the budget for the academic year 2020-2021. It was a deficit budget. Subsequently, the reasons were explained. Mr. Anil Paul D'Souza, the accountant, and Mr. Ananth helped to present the budget through power point presentation.

After the presentation, a few queries were raised. Fr Prakash Anil Castelino: what about the PT. EST to Part time employees? They need to be taken care and incorporated in the Budget because they are mandatory according to government guidelines.

Dr Gerald Pinto, enquired whether tuition fee collected from girls was reimbursed? The Principal answered affirmatively and said 'Yes'.

The budget was approved. Dr. Gerald Pinto proposed it and Mr Jesy Dias seconded it.


2) Solar Energy Project :

Principal Dr Vincent Alva presented the dream project of installation of Solar Power in the Campus, which would cut the cost of electricity bills; moreover he explained that will make the college to achieve goals of using natural sources thereby contributing to nature, making nature greener. The cost of the project is Rs. 15 lakh. He revealed that in the alumni meeting held at Dubai, an alumnus Mr Stephen Cornelio had volunteered to sponsor the entire project in his parents' memory as a contribution to his alma mater. The

Management unanimously approved the project and asked the Principal to implement the project at the earliest.

Contract Papers of the Project

Format - 9

	MANGALORE ELECTRICITY SUPPLY COMPANY LIMITED (Wholly owned Government of Karnataka Undertaking)
Telephone : Email ID : Ref No.: <i>Mangalore/REG/3VR/2160</i>	Office of the Date: <i>04-07-2020</i>

To,
(Name & address of the applicant)
.....
.....

Correspondent
Cl o Principal, Milagres college,
Kalyanpura.

Madam/Sir,

Sub: Certificate of synchronization of your *28* kWP SRTPV system
Ref: Application Reg. No.*06*.... dtd: *20.02.20*.

Synchronization test of Solar Rooftop PV system of *28* kWP, installed on the roof of your installation bearing RR No.: *RR 540* has been conducted and your SRTPV system successfully synchronized with the MESCOM grid at *440* voltage level on *dd/mm/yyyy. 02.07.2020*.

Yours faithfully,

[Signature]
AEE/Executive Engineer(Ele)
O&M *3VR* sub div/division
MESCOM (2)
ಕರ್ನಾಟಕ ಸರ್ಕಾರ, ಮಂಗಳೂರು


Copy submitted to:

1. Chief Engineer (Elect), Load dispatch Centre, KPTCL, Anand Rao Circle, Bangalore.
2. Superintending Engineer(Ele), Corporate office, MESCOM, MESCOM Bhavan, Bejai, Kavour Cross, Mangalauru.
3. EE, C, O & MDivision, MESCOM.
4. Copy for information EE of MT division.
5. MF/OC

Note:

1. Copy is to be marked to CEE, LDC, SEE (C&RP) if the SRTPV capacity is more than 500kWp.
2. The file along with all the documents is to be sent to revenue section for billing purpose.

Format - 8

	MANGALORE ELECTRICITY SUPPLY COMPANY LIMITED (Wholly owned Government of Karnataka Undertaking)	
	Telephone : Email ID : Ref No.:	Office of the Date: 02/07/2020

Commissioning report of SRTPV system (Net / Gross metering)

A	Consumer Details			
1	Name of the Consumer	CORRESPONDENT, PRINCIPAL MILAGACE COLLEGE,		
2	Category	LT ₂ (B) - SOLAR NET METERING, KALLIANPURA		
3	RR No./Account ID/Connection ID	KLPR-540		
4	Pole Number			
B	Meter Details	Bi-directional Meter NET Main Meter	Check Meter	SOLAR Existing meter
1	Meter make: lpr / 3 ph	Seura	Seura	L&T
2	Type	E3T055	E3T 055	ER300P
3	Serial number	X1361411	X1361410	19898267
4	Capacity	5A	5A	5A
5	Meter constant	10	10	10
6	Initial reading (Tri vector parameters)			
	i) Import	00000.24	00000.24	—
	ii) Export	00000.24	00000.24	000002.37

Note:

- The Bi-directional meter records solar generation and existing meter records installation consumption in case of Gross metering.
- The Bi-directional meter records export of solar energy to grid and Import of energy by the installation. Existing meter records the total solar energy generated.

C	Grid Tied Inverter	DELTA
1	Make	01Y19C07772 WH
2	Serial number	30KW
3	Capacity	200 to 1000 V D/c
4	Input voltage	400V A/c
5	Output voltage	
6	Whether Anti-islanding feature is in working condition	Yes/No
D	PV Module	
1	Make	ANCHOR
2	Serial number	Attached
3	Type of module	Polycrystalline
4	Capacity of each module	335Wp.
5	Number of modules	85
6	Total capacity of module	28.05 Kwp.
E	Earthing verified: DC earthing, AC earthing, LA earthing of SRTPV system	Yes/No
F	Details of protective system available	<ul style="list-style-type: none"> AC & DC DB: Yes/No Manual Switch solar side: Yes/No Relay operated automatic switch at net-meter side: Yes/No
G	CEI, GoK/AEE, MESCOM inspection & approval letter obtained	Yes/No
H	Work completion report of SRTPV system obtained from agency	Yes/No
I	Date of synchronizing with MESCOM grid	02/07/2020 dd/mm/yyyy

AEE(Ele.)/EE(Ele.)
 MT S/D/Dvn
 MESCOM

AEE(Ele.)/EE(Ele.)
 O&M
 MESCOM

Name &
 Signature of
 Correspondent
 MLAGRES COLLEGE
 KALLIANPUR - 576



सत्यमेव जयते

INDIA NON JUDICIAL

Government of Karnataka

Rs. 200

e-Stamp

Certificate No.

Certificate Issued Date

Account Reference

Unique Doc. Reference

Purchased by

Description of Document

Description

Consideration Price (Rs.)

First Party

Second Party

Stamp Duty Paid By

Stamp Duty Amount(Rs.)

: IN-KA56049092271263S
: 09-Jun-2020 04:05 PM
: NONACC (FI)/ kaksfcl08/ UDUPI1/ KA-UD
: SUBIN-KAKAKSFCL0818199653564144S
: CORRESPONDENT MILAGRES COLLEGE
: Article 12 Bond
: POWER PURCHASE AGREEMENT
: 0
: (Zero)
: MESCOM
: CORRESPONDENT MILAGRES COLLEGE
: CORRESPONDENT MILAGRES COLLEGE
: 200
: (Two Hundred only)

सत्यमेव जयते



Please write or type below this line

**STANDARD APPROVED FORMAT OF POWER PURCHASE AGREEMENT
FOR ROOFTOP SOLAR PV PLANTS WITH NET METERING
ARRANGEMENT**

This Power Purchase agreement is entered into at **Brahmmavara** on this 10th day of **June 2020** between **Mangalore Electricity Supply Company Limited (MESCOM)**, a Government of Karnataka undertaking, a Company formed and incorporated in India under the Companies Act - 1956, with its registered office

Correspondent

located at Mangalore Karnataka State, represented by Assistant Executive Engineer, Brahmavara referred to as the MESCOM, (which expression shall, unless repugnant to the context or meaning thereof, include its successors and permitted assigns) as party of the first part.

AND

Correspondent Educational Institute the consumer of MESCOM residing at Principal Milagrace college, Kallianpur hereinafter referred to as the "Seller" (which expression shall, unless repugnant to the context or meaning thereof, include its successors and permitted assigns) as party of the second part.

Whereas,

- a. The Seller intends to connect and operate the Solar Roof Top Photo Vattaic (SRTPV) system with MESCOM's HT/LT Distribution system for sale of Solar Power to MESCOM in terms of the Karnataka Electricity Regulatory Commission (KERC) Order No. KERC/S/03/1/62
- b. The Seller intends to install a SRTPV system of 28 kWp capacity on the existing roof top of the premises situated at and bearing RR. No. KLPR-540 in the same premises under Brahmavara Sub-Division of MESCOM.
- c. The Seller intends to sell the energy generated from the SRTPV system to MESCOM on net metering concept, from the date of commissioning of the SRTPV system.
- d. MESCOM intends to purchase the energy generated by such SRTPV system, on net metering concept, at the tariff determined by the KERC.

Now therefore, in consideration of the foregoing premises, the parties hereto, intending to be legally bound hereby agree as under:

1. Technical and Interconnection Requirements:

Seller shall ensure his SRTPV system complies with the following technical and interconnection requirement and shall:

- 1.1 Comply with the applicable standards and conditions in respect of integrating the SRTPV system with the distribution system.
- 1.2 Connect and operate the SRTPV system to MESCOM's distribution system in accordance with the State Grid Code and Distribution Code as amended from time to time.
- 1.3 Install, prior to connection of SRTPV system to MESCOM's distribution system, an inverter with an automatic inbuilt isolation device.
- 1.4 Provide external manual isolation mechanism with suitable locking facility so that SRTPV system will not back-feed into the MESCOM's network in case of power outage of the MESCOM's distribution system,

and it shall be accessible for MESCOM to operate, if required, during maintenance / emergency conditions.

1.5 Install all the equipment of SRTPV system compliant with relevant international (IEEE/IEC) and Indian standards (BIS).

1.6 (a) SRTPV system shall be designed, engineered and constructed and operated by the seller or any other person on his behalf, with reasonable diligence subject to all applicable Indian laws, rules, Regulations amended from time to time and orders having the force of law.

(b) The seller shall commission the SRTPV system within six months from the date of approval of the PPA.

1.7 Adhere to the following power quality measures as per the International and Indian standards and / or such other measures stipulated by KERC / MESCOM:

- a. Harmonic current: Harmonic current injections from a generation unit shall not exceed the limits specified in IEEE 519.
- b. Voltage at the injection point should be in the operating range of 80% to 110% of the nominal connected voltage.
- c. Flicker: Operation of Photovoltaic system shouldn't cause voltage flicker in excess of the limits stated in the relevant sections of IEC standards or equivalent Indian standards, if any.
- d. Frequency: When the system frequency exceeds the upper limit specified in the IEGC, as amended from time to time, the SRTPV system shall shut down to island mode.
- e. DC Injection: Photovoltaic system should not inject DC power more than 0.5% of full rated output at the interconnection point or 1% of rated inverter output current into distribution system under any operating conditions.
- f. Power Factor: While the output of the inverter is greater than 50%, the lagging power factor of greater than 0.9 shall be maintained.
- g. The SRTPV system in the event of voltage or frequency variations shall disconnect itself as per IEGC / KERC Regulations within the stipulated period.

2. Safety:

The seller shall comply with the following safety measures:

2.1 The seller shall comply with the Central Electricity Authority (Measures Relating to Safety and Electricity Supply) Regulations 2010.

2.2 The seller shall ensure that, the design, installation, maintenance and operation of the SRTPV system are in a manner conducive to the safety of the SRTPV system as well as the MESCOM's distribution system.

If the Seller's SRTPV system either causes damage to and / or produces adverse effects on the other consumer's or MESCOM's assets, Seller will disconnect SRTPV system immediately from the distribution system by himself or upon directions from the MESCOM and rectify the same at his own cost before reconnection.

Clearances and Approvals:

The Seller shall obtain MESCOM's and other statutory approvals and clearances before connecting the SRTPV system to the distribution system.

Access and Disconnection:

MESCOM shall have access to metering equipment and disconnecting device of SRTPV system, both automatic and manual, at all times.

In emergency or outage situation, where there is no access to a disconnecting device either automatic or manual, the MESCOM shall have the right to disconnect power supply to the premise.

Liabilities:

The Seller shall be solely responsible for availing any fiscal or other incentive provided by the State / Central government, at his own expenses.

Commercial Settlement

Tariff:

- a. The MESCOM shall pay for the Net energy at Rs. 3.07 per KWh as determined by the KERC in the Order dated 22.05.2020 for the term of this agreement.
- b. If for any reason the date of commissioning is delayed, beyond the date of commissioning agreed, the tariff payable by the MESCOM shall be lower of the:
Tariff agreed to in this agreement.
OR
Tariff as per the average pooled power purchase cost notified by the Commission prevailing on the date of commissioning.

Note: The Seller is allowed to install SRTPV system upto 150% of the sanctioned load.

- c. The Seller shall pay the electricity tax and other statutory levies, pertaining to SRTPV generation, as may be levied from time to time.
- d. The Seller shall not have any claim for compensation, if the Solar power generated by his SRTPV system could not be absorbed by the distribution

7. Metering:

7.1 The seller shall arrange to shift the existing meter to the generation side of SRTPV plant to measure solar power generation and install a bi-directional meter (whole current / CT operated) at the point of interconnection to the distribution system, at a suitable place in the premises accessible for recording export of energy from the SRTPV system to the grid and import of energy to the premises of the consumer from the grid. The bi-directional meter shall comply with the Central Electricity Authority (Installation and operation of meters) Regulations, 2006 and shall have the following features:

- i. Separate registers for recording export and import energy with facility to download by meter Reading instrument (MRI)/
- ii. KVA, kw and KVAR measuring registers for both import and export energy.
- iii. Meter shall have Rs. 232 [or higher] communication optical port / Radio Frequency (RF) port to support Automatic Meter Reading (AMR).

8. BILLING AND PAYMENT:

8.1 MESCOM shall issue monthly electricity bill for the net energy on the scheduled date of meter reading.

8.2 In case, the exported energy is more than the imported energy, MESCOM shall pay for the net energy exported as per Tariff agreed in the agreement within 30 days from the date of issue of bill duly adjusted for the fixed charges and electricity duty if any.

8.3 In case, the exported energy is less than the imported energy, the seller shall pay MESCOM for the net energy imported as per the prevailing retail supply tariff determined by the Commission from time to time.

8.4 MESCOM shall pay interest at the same rates as is being levied on consumers for late payment charges in case of any delay beyond (Thirty) days period from the date of issue of bill in payment, for the net energy exported.

9. Term and termination of the Agreement.

9.1 This agreement shall be in force for a period of 25 years from the date of commissioning of the SRTPV system unless terminated otherwise as provided here under.

9.2 If the MESCOM commits any breach of the terms of the Agreement, the seller shall serve a written notice specifying the breach and calling upon MESCOM to rectify the same within a period of 30 days from the date of receipt of the notice.

MESCOM to remedy / rectify the same within 30(Thirty) days or at such other period and at the expiry of 30 (Thirty) days or such other period from the delivery of the notice. Seller may terminate the agreement by delivering the termination notice, if the MESCOM fails to remedy / rectify the same.

If the Seller commits any breach of the terms of the Agreement, MESCOM shall serve a written notice specifying the breach and calling upon the seller to remedy / rectify the same within 30 (Thirty) days or at such other period and at the expiry of 30 (Thirty) days or such other period from the delivery of the notice, MESCOM may terminate the agreement by delivering the termination notice, if the seller fails to remedy/rectify the same.

Upon termination of this Agreement, seller shall cease to supply power to the distribution system and any injection of power shall not be paid for by the MESOCMS.




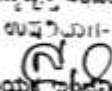
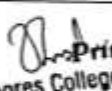
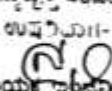
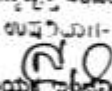
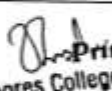
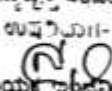
Dispute Resolution:

All the disputes between the parties arising out of or in connection with this agreement shall be first tried to be settled through mutual negotiation.

The parties shall resolve the dispute in good faith and in equitable manner.

In case of failure to resolve the dispute, either of the parties may approach the appropriate Forum of law.

IN WITNESS WHEREOF, the Seller and the MESCOM have entered into this Agreement executed on the date and year first set forth above.

For AND ON BEHALF OF	
Bangalore Electricity Supply Company Limited	SELLER
Signature: 	By:  Correspondent
Address: 	RR. No: KLPR-546 Address: Milagres Educational Institutions Udupi Dist. 576 114
WITNESS	WITNESS
Presence of Name: 	In Presence of Name:  Principal
Signature: 	Milagres College Kallianpur-576 114 Udupi Dist. Karnataka
WITNESS	WITNESS
Presence of Name: 	In Presence of Name:  Principal
Signature: 	GOPALA PALAN PHOENIX ELECTRICAL L. No. 2CL124241 UDP No. 33, Spandana Building, K.A.- SANTHEKATTE - UDUPI

Format-5A

To,

The Assistant Executive Engineer (Ele) / Executive Engineer (Ele),
O & M, Sub-division/Division, MESCOM,
Kallianpur (ವಿ)
ಬೆಂಗಳೂರು ವಿಜ್ಞಾನ ಕೇಂದ್ರ ಕರಾವಳಿ ಕಂಪನಿ
ಬೆಂಗಳೂರು, ಕರ್ನಾಟಕ - 560 001
Madam/Sir,

Sub: Selection of System installer & Technical details of proposed SRTPV system.

Ref: Your letter no34...dtd:..9..6..20.....(Format-5).

With reference to the above I would like to furnish the following information for your kind needful.

1. Name and address of the System Installer
With mobile no. of the contact person

Correspondent
C/o. Principal Milagres College
Kallianpur

2. Make of the inverter intending to use

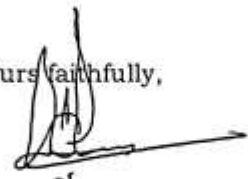
: AELTA

3. Make of PV module intending to use

: PENSonic

Kindly approve above details for installations of SRTPV system.

Yours faithfully,



(signature of applicant)
Correspondent

Milagres Educational Institutions
Kallianpur - 576 114
Udupi Dist.

Format - 5



**MANGALORE ELECTRICITY SUPPLY COMPANY
LIMITED**

(Wholly owned Government of Karnataka Undertaking)

Telephone :
Fax ID :
E-mail No.:

ಛಾಾಯಃ ಕಾರ್ಯನಿರ್ವಾಹಕ ಇಲಾಖೆಯು (ಎ)

Office of the
ಮಾಂಸಕು ವಿದ್ಯುತ್ ಕರಬರಾಡು ಕಂಪನಿ

ಬ್ರಾಹ್ಮಣರ. ಉಪವಿಲಾ- ಉಡುಪಿ

Date: 9-6-20

34

To,

(Name & address of the applicant)

Correspondent
c/o, Principal, Milagres College Kallianpur.

Madam/Sir,

Sub: Execution of Power Purchase Agreement (PPA) for gross / net metering.

KLRR-SRTPV-06-20-3-20

Ref: Application Reg. No. dtd:

With reference to your application cited under reference for gross/ net metering, it is pleased to inform that your application is technically feasible for grid connectivity and you are requested to enter into the Power Purchase Agreement (PPA) within 10 days for the date of this letter, failing which your application will be treated as cancelled.

The standard Power Purchase Agreement approved by KERC is available in the MESCOM website. www.mesco.in

Yours faithfully,

[Signature]
AEE/Executive Engineer (Electrical)
G.O. No. 13-20-3-20
MESCOM
ಮಾಂಸಕು ವಿದ್ಯುತ್ ಕರಬರಾಡು ಕಂಪನಿ
ಬ್ರಾಹ್ಮಣರ. ಉಪವಿಲಾ- ಉಡುಪಿ


MANGALORE ELECTRICITY SUPPLY COMPANY LIMITED
(Wholly owned by Government of Karnataka Undertaking)
**Technical Feasibility Report
(To be submitted by the Section officer)**

Sl No	Parameter	Utility Observation
A	Applicant details	
1	Name of the Applicant	Correspondent, C/o. Principal Milagres College, Kalyangpur.
2	RR Number	KLPR - 540
3	Application Registration Number	KLPR/SRTPV/06/20.03.2020
4	Tariff	College. LT2(6)(u)
5	Type of connection: 1phLT or 3ph LT/HT	3 phase LT.
6	Pole Number	-
7	Next RR Number	KLPR - 30329
8	Sanctioned Load in kW / Contract demand in KVA	28kW.
B	Distribution Transformer Details	
1	Location	Milagres College T.C
2	Capacity in KVA	63 KVA
3	Total Connected load in kW	28kW.
4	Tongtester reading of current in all 3 phases and neutral	230V, in all 3 phases & neutral
5	SRTPV already Proposed/connected in kWp	28kW
6	Proposed SRTPV capacity in kWp	28kW
7	Total Generation Capacity (5+6) in kWp	
8	Whether the transformer capacity is adequate to deliver the proposed SRTPV system in addition to existing solar RTPV systems.*	✓ Yes/No

C	Feeder Details	
1	Name of the 11kV feeder	F ₂ uppoor feeder
2	Feeder Number	F ₂
3	Name of the Sub-Station	110/11 kv Brahmanawa
4	Type of the conductor/cable(size)	ACSR. No. 1. conductor
5	Total connected load on the feeder in kVA	
6	Total capacity(kWp) of SRTPV systems connected on the feeder	proposed application
7	Peak load on the feeder in Amps	75 Amps
8	Proposed SRTPV installation is technically feasible, if the total SRTPV capacity is less than or equal to the 11kV feeder capacity.	Yes/No (if it is not feasible, state reasons) feasible

- The Transformer shall be loaded upto 80% of capacity.

Enclosure: 11kV feeder & LT Distribution sketch of the transformer.

I hereby certify that the above said SRTPV installation is technically feasible.

Signature and Name

Section officer,
O&M Section _____
MESCOM

ಶಾಮಿಧಿಕಾರಿ
ಮೆಸ್ಕಾಂ, ಕಲ್ಯಾಣಪುರ ಶಾಖೆ
ಬ್ರಹ್ಮಾವರ ಉಪ ವಿಭಾಗ

Date: 02.01.2020

From,
Phoenix Electricals
GST No: 29AZTPK4256G1ZT
Contact No.: 9845225578,9110684185
Email: info@phoenixelectricals.com

To,
The Principal,
Milagrees College,
Udupi

Subject: Techno-Commercial Quotation for Supply and Commissioning of 22.0 kWp Grid Tied Solar PV Power Plant with Funding Option

Dear Sir,

20kv

We are herewith pleased to present our Techno-Commercial Quotation for Supply and Commissioning of 22.0 kWp Grid Tied Solar PV Power Plant for M/S. Milagrese College, Santhekatte, Udupi, Karnataka.

Estimated generation from the 22.0 kWp Grid Tied Solar PV Power Plant will be approximately 32,120 kWh/year. Terms and conditions of the quotation are as per the attached Annexure 1-6.

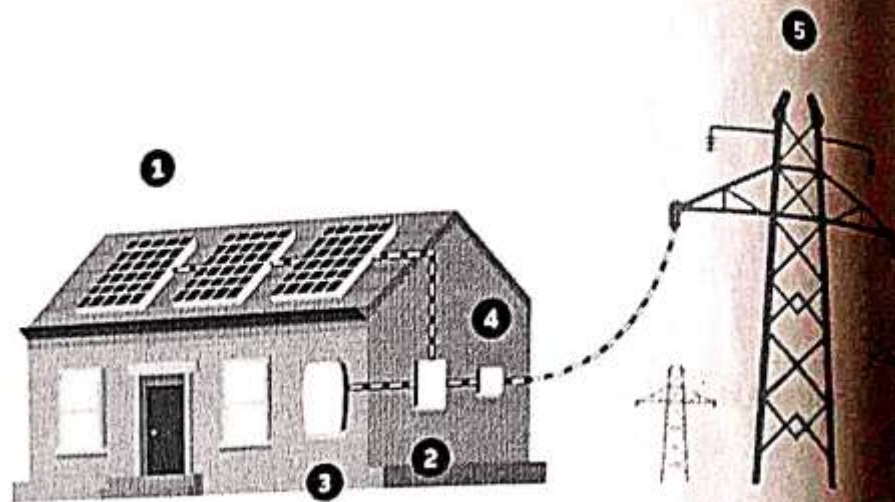
For Phoenix

The Proprietor

Enclosures:

- Annexure 1: Working Principle of Solar PV System
- Annexure 2: Project Details
- Annexure 3: Bill of Material of Major Components
- Annexure 4: Scope of Offer
- Annexure 5: Terms and Conditions with Price breakup

ANNEXURE 1 WORKING PRINCIPLE OF SOLAR PV SYSTEM



Solar Panels - The solar modules when exposed to sunlight generate DC electricity.

Solar Inverter - Solar Grid Tied Inverter performs the conversion of the variable DC power from the solar modules into a clean AC power. This inverter needs a synchronizing power with the grid.

AC Distribution Box - is an important part of SPV system. It gives extra protection in case of failures on load side. ACDB is made up of breaker, isolators, voltage and current transformers etc.

Net Meter - (also known as net energy metering) is a solar incentive that allows you to sell excess power back to the electric grid. When your solar panels produce excess power, that energy is sent to the grid and in exchange you can pull from the grid when your system is under-producing at a certain time.

Export to Grid - Excess power generated will be exported to DISCOMs Grid.

Advantages:

- Simple and Safe system which gives Direct Savings in Electricity Bill
- Efficient, fit and forget system with least losses.
- 25 years of Guaranteed Generation (100% for 10 years + 0.5% reductions thereafter) with Payback Period of 3-6 years
- Accelerated Depreciation on the Investment for commercial and Industrial.

Limitations:

- No Back up will be given from the system, since solar power directly utilized.
- When power goes off Grid (DISCOM) Inverter will isolate from the system and Solar Power will be go unutilized / waste for that time only.

FIGURE 2 - PROJECT DETAILS

Client Name

Milagrees College, Santhekatte ,Udupi

Project Location

udupi, Karnataka

Coordinates of the Location

Shade Shadow free area required

10 sq. M per kW

DC Capacity

22.0 kWp

AC Capacity

22 kW

DC / AC Ratio

1:1

Type of Roof (Proposed Structure Type)

Rising elevated structure for roof top structure

ANNEXURE 3: BILL OF MATERIAL OF WATER COMPONENTS

Item	Description	Quantity	Unit	Make
Solar Modules	335Wp Polycrystalline Solar Module	66 (approximately)	Nos.	Vikram/Waree /Eq.
Solar Inverter	22kW String Inverter (3-Phase)	1 (approximately)	Nos.	Growatt / K Star/eq.
Module Mounting Structure	GI	As per Design	Kg.	Standard
DC Cable	1.1kV, XLPO Unarmored Cable	Solar Cu As per Design	Meter	Polycab
AC Cable	1.1kV, Aluminum Armored, XLPE Cable	As per Design	Meter	Polycab
Distribution boxes (DC / AC)	As per Design	As per Design	No.	Standard Make
Earthing System	As per Design	As per Design	No.	Standard Make
Lightning Arrestor	As per Design	As per Design	No.	Standard Make

Note:-

1. Components and materials used are as per MNRE standards and required.
2. If any unexpected change/increase in material/components is required, it will be communicated to you after detailed Site Visit.
3. Changes in USD to INR more than 2% will increase the cost of imported materials on the client's side.



EXHIBIT 4-SCOPE OF OFFER

Scope of Phoenix Electricals

- Supply of Solar PV Modules and Balance of Material with necessary packaging and transportation.
- Services for Final Design and Drawings.
- Installation of PV panels and electrical connections.
- Installation of Inverter and protection systems.
- All cabling for connecting PV Modules, strings, arrays and all interconnecting devices.
- Project design and management for PV System.
- Supervision of system installation and commissioning.
- All local labour for installation and commissioning.
- Training to the customer.
- Maintenance for 1 year included in the cost. AMC from 2nd year and onwards should be carried out at additional cost.

Training

Training shall be provided after commissioning on the following topics:

- ✓ Golden safety rules for the operation of the system
- ✓ Troubleshooting
- ✓ Basic maintenance requirements
- ✓ Use of the monitoring features of the system
- ✓ Identification of the main protection devices

Scope of Client

- Providing obstacle and shadow free area to install Solar Power Plant.
- Providing unhindered roof access to install & operate solar rooftop system.
- Client shall provide safe place to store the material once it is delivered at site.
- Any Modification in the Existing Infrastructure like roof strengthening / change of roof, step-up transformer, associated switchgears, cables, CT, PT's.
- Internet Connection and associated cost to be provided by Project Owner along with Static IP for remote monitoring of Solar PV System.
- Statutory fees for approvals to be paid by Client.
- Supervision from client end is required to monitor the on- going works and upon completion of site work, letter for work completion to be issued to **Phoenix Electricals**.
- Any damages occurring in materials post-delivery during storage shall be solely the client's responsibility and the cost arising from such damages shall be borne by the client at actual.
- Providing ground space for AC and DC earth pits.



ANNEXURE 5 - TERMS AND CONDITIONS WITH PRICE BREAKUP

- Quotation is valid for 30 days.
- Cost of AMC for 2nd year and onwards should be provided separately.
- Execution period – 6-8 weeks from date of receiving the PO and Down Payment.
- The warranties shall be activated after final handing over of site and receipt.
- Payment Terms:
 - 45% Down Payment with Purchase Order.
 - Payment against Finance as per EMI Chart

PRICE BREAKUP FOR 22.0 KWP GRID TIED SOLAR PV PLANT

Supply and Erection

Amount
Rs.11,00,000
/-

5% GST
Rs.55,000/-

Total Amount

Rs.11,55,000/-

Rupees Eleven lac - Lac fifty five thousand

BANK DETAILS:

Name: PHOENIX ELECTRICALS

Acc No: 510101004781073

Bank: Corporation Bank

Type: Current Account

Branch: Ambalapady

IFSC code: CORP0000164

Date: 02.01.2020

To, Principal,
Milagres College,
Udupi

From,
Phoenix Electricals
GST No: 29AZTPK4256G1ZT
Contact No.: 9845225578,9110684185
Email: info@phoenixelectricals.com

Techno-Commercial Quotation for Supply and Commissioning of 22.0 kWp Grid Tied Solar Power Plant with Funding Option

Sir,

We herewith pleased to present our Techno-Commercial Quotation for Supply and Commissioning of 22.0 kWp Grid Tied Solar PV Power Plant for M/S. Milagrese College, Udupi, Karnataka.

Estimated generation from the 22.0 kWp Grid Tied Solar PV Power Plant will be approximately 32,120 kWh/year. Terms and conditions of the quotation are as per the attached Annexure 1-6.

Yours faithfully,

Proprietor

Annexures:

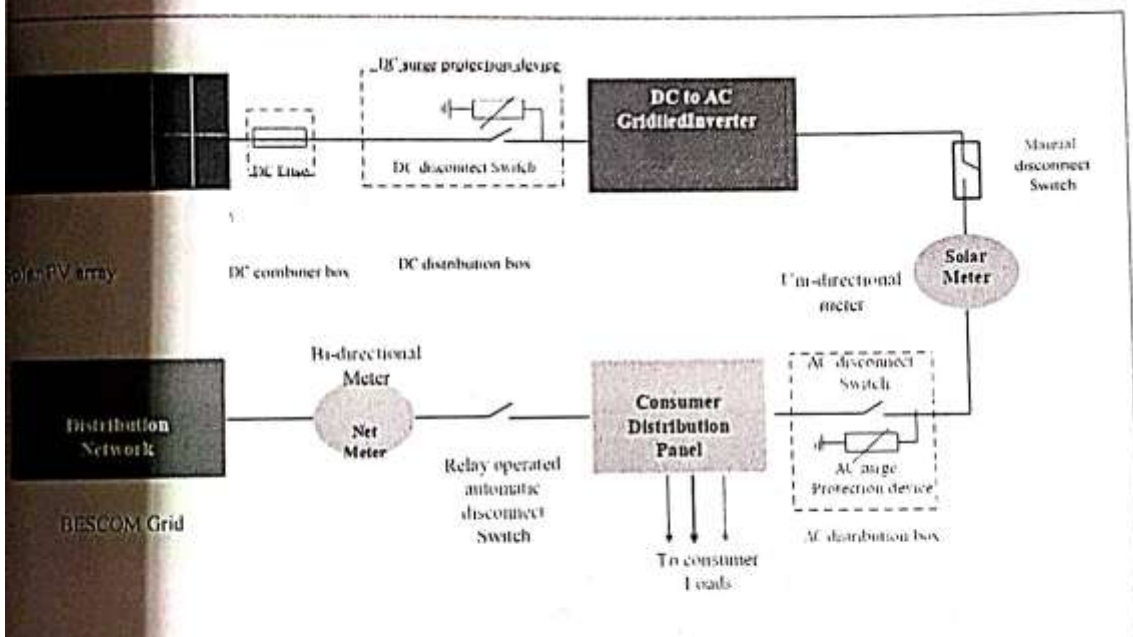
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ANNEXURE 1 - WORKING PRINCIPLE OF SOLAR PV SYSTEM



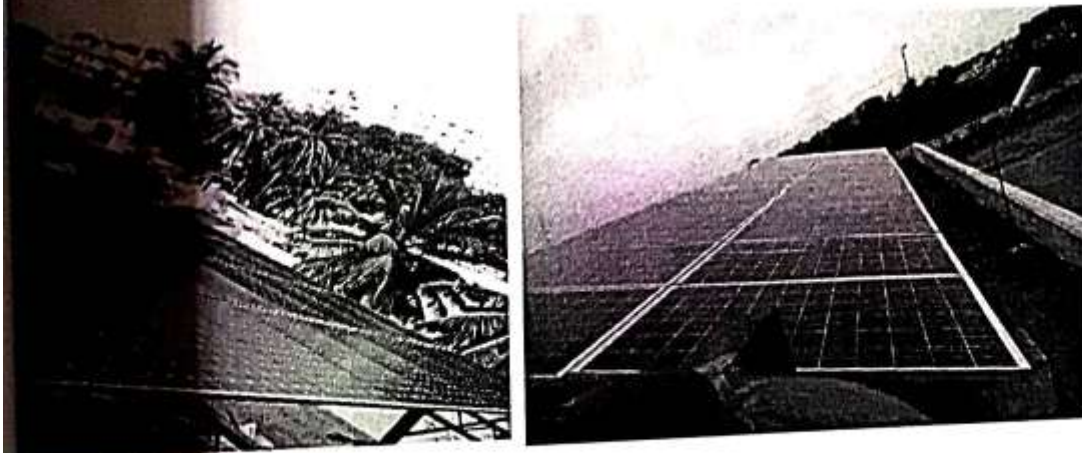
BANGALORE ELECTRICITY SUPPLY COMPANY LIMITED
(Wholly owned by Government of Karnataka Undertaking)

Single Line Diagram of Roof top Facility for Net Metering Interconnection



INDIUM PROJECTS PVT LTD

Channel partners & Exclusive distributors for Panasonic



Techno-Commercial Proposal

Point of Contact:

Point of Contact: