



SASURIE COLLEGE OF ENGINEERING

Approved by AICTE, New Delhi. Affiliated to Anna University, Chennai

Near NH544, Coimbatore Bypass, Near Vijayamangalam Tollgate, Tirupur 638056

NAAC DOCUMENTS

QUALITY INDICATOR FRAME WORK

CRITERION - 3

RESEARCH, INNOVATION & EXTENSIONS

SUBMITTED BY

IQAC

INTERNAL QUALITY ASSURANCE CELL

SASURIE COLLEGE OF ENGINEERING



Criteria3

Research, Innovations and Extension

110

Key Indicator-3.1 Resource Mobilization for Research

3.1.1. Endowments in the institution during the last five years (INR in Lakhs)

SUPPORTING DOCUMENTS for Endowment

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PV SOLAR PANEL LIMITED

71C, Kamar Street, Subramania Nagar,
Suramangalam, Salem - 636 005

Contact No: 97402 76305



SolarPanel

Email: pvsolar@gmail.com

Date:08.01.2020

TO

The Principal,
Sasurie College of Engineering,
Vijayamangalam - 638 056.

Dear Sir/Madam,

We received the Consultancy Work Brochure of Sasurie College of Engineering. In this Connection we require Estimation of Power Rating and Numbers of Solar PV Panel Require for Installation in Domestic Appliances and kindly submit the quotation for further consideration.

Thank You

Vinoth Kumar. P
Managing Director

VINOTH KUMAR.P



M
Dr.M.VIJAYAKUMAR ME., Ph.D.,
PRINCIPAL
SASURIE COLLEGE OF ENGINEERING,
Vijayamangalam - 638 056

Date: 14.01.2020

To

Managing Director,
 Pv Solar Panel Limited,
 71c, Kamar Street,
 Subramania Nagar,
 Suramangalam, Salem – 636 005

Respected Sir/Madam,

Sub: Quotation for Estimation of Power Rating and Numbers of Solar PV Panel Require for Installation in Domestic Appliances- Reg.

Greetings!!!


With reference to your letter dated 08.01.2020, we are submitting the quotation for “Estimation of Power Rating and Numbers of Solar PV Panel Require for Installation in Domestic Appliances”, we wish to submit the clear proposal for your consideration after in-depth discussions with you.

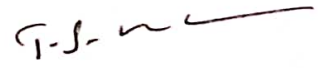
Quotation

S.NO	Particulars	No of Quantity	Rate (Rs)	Amount in Rs
1	Estimation of Power Rating and Numbers of Solar PV Panel Require for Installation in Domestic Appliances	20	3000	60000
Total Payable				60000
In Words : Sixty Thousand only				

Thanking You,





Dr. M. VIJAYAKUMAR
 PRINCIPAL
 SASURIE COLLEGE OF ENGINEERING,
 Vijayamangalam - 638 056, Tirupur (Dt).


PRINCIPAL

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PV SOLAR PANEL LIMITED

71C, Kamar Street, Subramania Nagar,
Suramangalam, Salem - 636 005

Contact No: 97402 76305



SolarPanel

Email: pvsolar@gmail.com

SANCTION LETTER

Date: 29.01.2020

To

The Principal,
Sasurie College of Engineering,
Vijayamangalam - 638 056.

Dear Sir/Madam,

After elaborate discussion, we would like to confirm the quotation and we are prepared to allocate the necessary funds for 20 quantities of "Estimation of Power Rating and Numbers of Solar PV Panel Require for Installation in Domestic Appliances".

Herewith we have sanctioned the total amount of Rs .60,000/-to carry out products development consultancy work for the above mentioned quantity and it should be completed within specified time span. For any support or queries, kindly notify us at any time.

Thank You

Vinoth Kumar P.
Managing Director

VINOTH KUMAR.P



Me

Dr.M.VIJAYAKUMAR ME., Ph.D.,
PRINCIPAL



SASURIE COLLEGE OF ENGINEERING,
Vijayamangalam - 638 056, Tirupur (Dt).

CONSULTANCY PROJECT WORK REPORT



DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Estimation of Power Rating and Numbers of Solar PV Panel Require for Installation in Domestic Appliances

SUBMITTED TO

Managing Director,
Pv Solar Panel Limited,
71c, Kamar Street,
Subramania Nagar,
Suramangalam, Salem – 636 005

DELIVERY DATE:05.02.2020


Dr.M.VIJAYAKUMAR ME., Ph.D.,
PRINCIPAL
 **SASURIE COLLEGE OF ENGINEERING,**
Vijayamangalam - 638 056, Tirupur (Dt).

As requested. / Order by HIDEEL Power products, dated 15.11.21. the following are the details for your kind perusal.

1. Load Estimation

Load	Watts	Hour/Day	Number of loads	Watt-Hr
LED	10	7	5	350
BLDC Fan	30	10	3	900
LCD TV (55")	150	5	1	750
Laptop	35	6	2	420
Total Daily Wan- Hour day or Wh/day	360			2420

1.a. Load Estimation with power factor of 0.8 approximately.

Load	Watts	Hour/Day	Number of loads	Watt-Hr
LED	10	7	5	350
BLDC Fan	30	10	3	900
LCD TV (55")	150	5	1	750
Laptop	35	6	2	420
Total Daily Wan- Hour day or Wh/day	450			3025

2. Determining the inverter rating:

The require energy is supplied from a battery bank through an inverter. The total load that would be connected to the inverter is around 450 [360-0.8] Watt. Then, the inverters power handling capacity should be around 500/1000 Watt an available in market.

3. Daily energy supplied to the inverter:

The daily energy consumed by the load is 3025 Wh.

The energy input to the inverter with the efficiency of 93%, is $(3025)/(0.93) = 3252.68$ Wh, approximated to 3253 Wh.

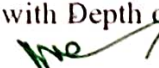
4. Deciding the system voltage:

2 Batteries each of 12V connected in series to have typical PV system voltage as 24V.

5. Sizing of batteries:

The required charge capacity = $(3253\text{Wh}) / (24\text{V}) = 135.5\text{Ah}$

The number of batteries of rating 12V, 100 Ah with Depth of Discharge (DOD) of 70% required is $(136\text{ Ah}) / (100\text{ deg} * 0.70) = 1.94$


Dr.M.VIJAYAKUMAR ME., Ph.D.,
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 SASURIE COLLEGE OF ENGINEERING
 Vijayamangalam - 635 007

6. Sizing of PV modules:

The energy supplied at the input of battery terminal with battery efficiency of 90% is, $(3025 \text{ Wh}) (0.90) = 3361.11 \text{ Wh}$.

The total Ampere hour to be supplied by PV Panel should be, $3361.11 \text{ Wh} / (24\text{V}) = 140.04 \text{ Ah}$

The total amperes from the PV modules, $(140 \text{ Ah}) (8 \text{ h}) = 17.5 \text{ Ampere}$.

The typical value of voltage and current of 440 W_p module at maximum power point (V_m and I_m) would be about 49 V and 11 A, respectively.

The number of PV modules required is, $18/11 = 1.63$ Therefore 2 PV Panels required as per calculation.

Considering various environmental factors and solar efficiency 2 panels of rating 440 W_p , is required to deliver Total Daily Watt Hour/day of 2420.

Design Details:

SL No	Description	Rating	Quantity
1	Inverter	500 /1000 Watt	01
2	Battery	12V, 100 Ah	04
3	Solar PV Panel	440W_p , 49 V/11 A	02



PROJECT INVESTIGATOR



PRINCIPAL



PRINCIPAL
SASURIE COLLEGE OF ENGINEERING,
Vijayamangalam - 638 056, Tirupur (Dt).



Dr. M. VIJAYAKUMAR M.E., Ph.D.,
PRINCIPAL



SASURIE COLLEGE OF ENGINEERING,
Vijayamangalam - 638 056, Tirupur (Dt).



Date: 07.02.2020

UTILIZATION CERTIFICATE

Certified that the amount of rupees Rs.60000 (Sixty Thousand only) was sanctioned by PV solar panel limited, Salem during the academic year (2019-2020), in favour of Department of Electrical and Electronics Engineering Sasurie College of Engineering has been fully utilized for consultancy project titled "Estimation of Power Rating and Numbers of Solar PV Panel Require for Installation in Domestic Appliances". The purpose of amount sanctioned has been fulfilled and delivered as per conditions of grant were satisfied.

K. V. S. S. S.

PROJECT INVESTIGATOR

T. S. S. S.

PRINCIPAL



PRINCIPAL
SASURIE COLLEGE OF ENGINEERING,
Vijayamangalam - 638 050, Tirupur (Dt).

M. V. S. S.

Dr. M. VIJAYAKUMAR ME., Ph.D.,
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