HARISH
HOME EQUIPMENTS

No 415, 1, Vivekananda Rd,
Ram Nagar,
Tirupur – 641 602

Email: hhequipments@gmail.com

Contact No: 93580 22754

Date:22.12.2023

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

Harish. R
Managing Director
HARISH.R

HARISH HOMES & EQUIPMENTS

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

SASURIE INSTITUTIONS
SASURIE
COLLEGE OF ENGINEERING
Approved by AICTE, New Delhi
Affiliated to Anna University, Chennai

Date:29.12.2023

To

Managing Director,

Harish Home Equipments,

No 415, 1, Vivekananda Rd,

Ram Nagar,

Tirupur – 641 602.

Respected Sir/Madam,

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

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Greetings!!!

With reference to your letter dated **22.12.2023**, 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,

SASURIE COLLEGE OF ENGINEERING Vijayamangalam, Tirupur (D.T), 638 056.

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

PRINCIPAL

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

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Contact No: 93580 22754

AMOUNT SANCTION LETTER

Date:04.01.2024

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.

Thanking you

Harish R

Managing Director

HARISH.R

HARISH HOMES & EQUIPMENTS

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

SASURIE INSTITUTIONS
SASURIE
COLLEGE OF ENGINEERING
Approved by AICTE, New Delhi
Affiliated to Anna University, Chennai

Date: 08.03.2024

To

Managing Director,

Harish Home Equipments,

No 415, 1, Vivekananda Rd,

Ram Nagar,

Tirupur – 641 602.

Respected Sir/Madam,

Sub: Completion of Consultancy Project - Reg.

Ref: Letter dated on 04.01.2024

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Greetings from Sasurie College Engineering!

We are glad to let you know that the project" Estimation of Power Rating and Numbers of Solar PV Panel Require for Installation in Domestic Appliances" has been successfully finished. We are submitting the project work document along with this.

Looking forward your response,

With warm regards,

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

SASURIE COLLEGE OF ENGINEERING
Vijayamangalam, Tirupur (D.T), 638 056.

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,

Harish Home Equipments,

No 415, 1, Vivekananda Rd,

Ram Nagar,

Tirupur – 641 602.

DELIVERY DATE:08.03.2024

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

CONSULTANCY PROJECT REPORT

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	50	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:

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

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

6. Sizing of PV modules:

The energy supplied at the input of battery terminal with battery efficiency of 90% is, (3025 Wh)/ (0.90) = 3361.11 Wh.
The total Ampere hour to be supplied by PV Panel should be, 3361 11 Wh/(24V)= 140.04Ah
The total amperes from the PV modules, (140 Ah)/(8 h) = 17.5 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

K. Vanitha

PROJECT INVESTIGATOR

PRINCIPAL

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

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

Date: 10.03.2024

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. Kavitha

PROJECT INVESTIGATOR

PRINCIPAL

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

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