

GREEN AUDIT REPORT

of

Shri Wagheshwar Gramvikas Pratishthan's,
Shri Vasantao Pharate Patil Arts, Commerce & Science College,
Mandavgan Pharata, Taluka: Shirur, District: Pune



Year: 2020-21

Prepared by

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MAHARASHTRA ENERGY DEVELOPMENT AGENCY

An ISO 9001 : 2000 Reg. no. : RQ 91 / 2462



Maharashtra Energy Development Agency

(Government of Maharashtra Institution)

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ECN/2021-22/CR-14/1577

22nd April, 2021

**CERTIFICATE OF REGISTRATION
FOR CLASS 'A'**

We hereby certify that, the firm having following particulars is registered with **MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA)** under given category as "Energy Planner & Energy Auditor" in Maharashtra for Energy Conservation Programme of MEDA.

Name and Address of the firm : **M/s Enrich Consultants**
Yashashree, Plot No. 26, Nirmal Bag Society,
Near Muktangan English School, Parvati,
Pune - 411009.

Registration Category : *Empanelled Consultant for Energy Conservation Programme for Class 'A'*

Registration Number : *MEDA/ECN/2021-22/Class A/EA-03*

- Energy Conservation Programme intends to identify areas where wasteful use of energy occurs and to evaluate the scope for Energy Conservation and take concrete steps to achieve the evaluated energy savings.
- MEDA reserves the right to visit at any time without giving prior information to verify quarterly activities performed by the firm and canceling the registration, if the information is found incorrect.
- This empanelment is valid till **21st April, 2023** from the date of registration, to carry out energy audits under the Energy Conservation Programme
- The Director General, MEDA reserves the right to cancel the registration at any time without assigning any reasons thereof.

General Manager (EC)

Enrich Consultants

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Ref: EC/ SVPPACSC/20-21/02

Date: 13/6/2021

CERTIFICATE

This is to certify that we have conducted Green Audit at Shri Wagheshwar Gramvikas Pratishtan's Shri Vasantao Pharate Patil Arts, Commerce & Science College, Mandavgan Pharate, Taluka: Shirur, District: Pune in the year 2020-21.

The College has adopted Green Practices:

- Usage of Energy Efficient LED Fittings
- Installation of Solar Thermal Water Heating System at Hostel
- Segregation of Waste at source
- Installation of Sanitary Waste Incinerator, for disposal of Sanitary Waste
- Installation of Rain Water Management Project
- Maintenance of Good Internal Roads
- Tree Plantation in the campus
- Provision of Ramp for Divyangajan

We appreciate the support of Management, involvement of faculty members and students in the process of Energy Conservation & making the campus Green.

For Enrich Consultants,

A Y Mehendale,
Certified Energy Auditor, EA-8192

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ACKNOWLEDGEMENT

We Enrich Consultants, Pune, express our sincere gratitude to the management of Shri Wagheshwar Gramvikas Pratishthan's Shri Vasantao Pharate Patil Arts, Commerce & Science College, Mandavgan Pharate, Taluka: Shirur, District: Pune, for awarding us the assignment of Green Audit of their Mandavgan campus for the Year: 20-21.

We are thankful to all staff members for helping us during the field study.

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EXECUTIVE SUMMARY

1. Shri Wagheshwar Gramvikas Pratishthan's Shri Vasanttrao Pharate Patil Arts, Commerce & Science College, Mandavgan Pharate, Taluka: Shirur, District: Pune consumes Energy in the form of **Electrical Energy**; used for various gadgets, Office & other facilities.

2. Energy Consumed and CO₂ Emission:

No	Parameter	Energy Consumed, kWh	CO ₂ emissions, MT
1	Total	10269	9.24
2	Maximum	6590	5.93
3	Minimum	150	0.14
4	Average	855.75	0.77

3. Various Measures Adopted for Energy Conservation:

- Usage of Energy Efficient LED fittings
- Maximum Usage of Day Lighting
- Installation of Solar Thermal Water Heating System at Hostel.

4. Usage of Renewable Energy Source:

- The College has installed Solar Thermal Water Heating System at Hostel.

5. Waste Management:

5.1 Segregation of Waste at Source:

The Waste is segregated at source and the recyclable waste like Paper waste, Plastic Waste is handed over to authorized agency.

5.2 Sanitary Waste Management:

The College has installed Sanitary Waste Incinerator, for disposal of Sanitary Waste.

5.3 E-Waste Management:

It is recommended to dispose of the E-Waste through Authorized Agency.

6. Rain Water Management:

The College has installed Rainwater Management Project. The rain water falling on the terrace is collected through pipes and is used to increase the underground water table.

7. Green & Sustainable Practices:

- Good Internal Roads

- Internal Tree Plantation
- Provision of Ramp for Divyangajan
- Creation of Awareness on Save Water

8. Assumption:

- 1 kWh (Unit) of Electrical Energy releases **0.9 Kg of CO₂** into atmosphere

9. Reference:

- For CO₂ calculations: www.tatapower.com

ABBREVIATIONS

SWGP : Shri Wagheshwar Gramvikas Pratishtan

LED : Light Emitting Diode

kWh : kilo-Watt Hour

MT : Metric Ton

CO₂ : Carbon Di Oxide

CHAPTER-I INTRODUCTION

1.1 Objectives:

1. To study present Energy Consumption
2. To Study the present CO₂ emissions
3. To study Usage of Renewable Energy
4. To study Waste Management practices
5. To study Green & Sustainable Practices

1.2 Table No-1: General Details of College:

No	Head	Particulars
1	Name	Shri Wagheshwar Gramvikas Pratihthan's Shri Vasantrya Pharate Patil Arts, Commerce & Science College,
2	Address	Mandavgan Pharate, Taluka: Shirur, District: Pune 412 211
3	Affiliation	Savitribai Phule Pune University

CHAPTER-II STUDY OF PRESENT ENERGY CONSUMPTION

In this chapter, we present the analysis of last year Electricity Energy Consumption
Table No 2: Electrical Energy Purchase Analysis- 20-21:

No	Month	Energy Consumed, kWh
1	Apr-20	150
2	May-20	150
3	Jun-20	150
4	Jul-20	6590
5	Aug-20	385
6	Sep-20	390
7	Oct-20	450
8	Nov-20	309
9	Dec-20	290
10	Jan-21	395
11	Feb-21	495
12	Mar-21	515
13	Total	10269
14	Maximum	6590
15	Minimum	150
16	Average	855.75

Chart No 1: To study the variation of Month wise Energy Consumed, kWh:

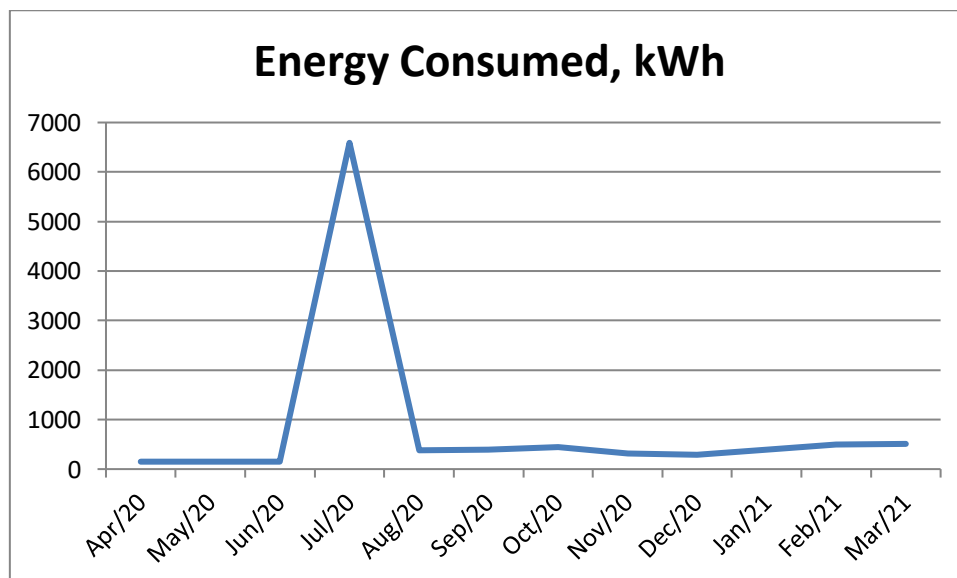


Table No 3: Important parameters:

No	Parameter	Energy consumed, kWh
1	Total	10269
2	Maximum	6590
3	Minimum	150
4	Average	855.75

CHAPTER-III

CARBON FOOT PRINTING

A **Carbon Foot print** is defined as the Total Greenhouse Gas emissions, emitted due to various activities.

In this we compute the emissions of Carbon-Di-Oxide, by usage of the various forms of Energy used by the College for performing its day to day activities

The College uses Electrical Energy for various Electrical gadgets.

Basis for computation of CO₂ Emissions:

The basis of Calculation for CO₂ emissions due to Electrical Energy are: 1 Unit (kWh) of Electrical Energy releases **0.9 Kg of CO₂** into atmosphere.

Based on the above Data we compute the CO₂ emissions which are being released in to the atmosphere by the College due to its Day to Day operations

Table No 4: Month wise CO₂ Emissions:

No	Month	Energy Consumed, kWh	CO ₂ Emissions, MT
1	Apr-20	150	0.14
2	May-20	150	0.14
3	Jun-20	150	0.14
4	Jul-20	6590	5.93
5	Aug-20	385	0.35
6	Sep-20	390	0.35
7	Oct-20	450	0.41
8	Nov-20	309	0.28
9	Dec-20	290	0.26
10	Jan-21	395	0.36
11	Feb-21	495	0.45
12	Mar-21	515	0.46
13	Total	10269	9.24
14	Maximum	6590	5.93
15	Minimum	150	0.14
16	Average	855.75	0.77

Chart No 2: Representation of Month wise CO₂ emissions:

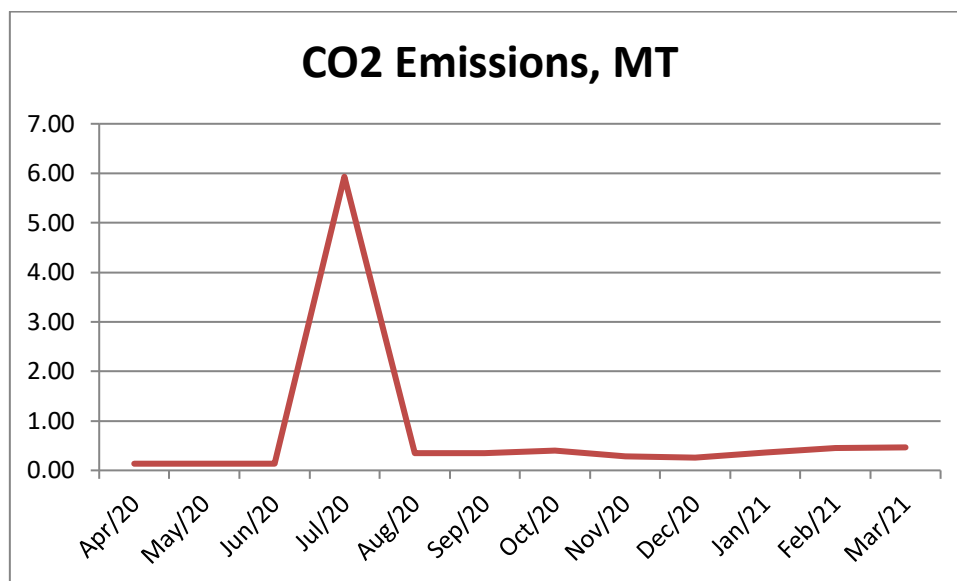


Table No 5: Key observations:

No	Parameter	Energy Consumed, kWh	CO ₂ Emissions, MT
1	Total	10269	9.24
2	Maximum	6590	5.93
3	Minimum	150	0.14
4	Average	855.75	0.77

CHAPTER-IV

STUDY OF USAGE OF RENEWABLE ENERGY

The College has installed Solar Thermal Water Heating System at the Hostel Block

The College has yet to install Roof top Solar PV Plant.

Photograph of Roof Top Solar Thermal Water Heating System:



CHAPTER-V STUDY OF WASTE MANAGEMENT

5.1 Segregation of Waste at Source:

The Waste is segregated at source. Waste bins are located at various locations

Photograph of Separate Waste Collection Bin:



5.2 Sanitary Waste Management:

The College has installed Sanitary Waste Incinerator, for disposal of Sanitary Waste.

Photograph of Sanitary Waste Incinerator:



5.3 E-Waste Management:

It is recommended to dispose of the E-Waste through Authorized Agency.

CHAPTER-VI

STUDY OF RAIN WATER MANAGEMENT

The College has implemented the Rain Water Management Project. The College has installed Pipes from the terrace and the Rain water falling on the terrace is gathered and is used to increase the underground water table.

Photograph of Rain Water Carrying Pipe:



CHAPTER-VII

STUDY OF GREEN & SUSTAINABLE PRACTICES

7.1 Pedestrian Friendly Road:

The College has well maintained pedestrian road as to facilitate the easy movement of the students within the campus.

Photograph of Road within campus:



7.2 Internal Tree Plantation:

The College has well maintained Tree Plantation.

Photograph of Tree Plantation:



7.3 Provision of Ramp for Divyangajan:

The College has made provision of Ramp for the Divyangajan.

Photograph of Ramp for Divyangajan:



7.4 Creation of Awareness by Display of Posters:

The College has displayed posters on Save Water.

Photograph of Poster Display Board on Save Water:

