

Late Nirdhanrao Patil Waghaye Arts, Commerce & Science College Andhalgaon

Ta: Mohadi Dist: Bhandara 441914

(Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur)

Email Id: - latenpwcandhalgaon@gmail.com

Website: - www.npwcandhalgaon.org

Ref. No. :- NPWC/ 1232/2023 / NAAC
2

Date:- 11 / 10 / 2023

Green Campus Initiative Policy of Institute :

The policy focuses on the green campus initiatives towards conservation of nature and creation of a healthy environment and inculcating habits of sustainable development in the students and teachers. Policy focuses on energy, water conservation and avoiding use of one time usable plastics.

Scope of the Policy:

1. To protect and nurture environment.
2. To encourage students to keep the environment safe and clean
3. To integrate environmental concerns for social development through student activities
4. To reduce the amount of waste produced.
5. To make the campus plastic – free.

Implementation Procedure :

1. A monitoring is done through IQAC for planning and implementation of Green initiative Practices.

Records of Notices, Agenda, Minutes Should be maintained.

The Committee should collaborate with the Extension Cells of the College to organize Guest lectures, awareness drives, competitions and other activities to promote Green practices in and beyond the College.

Green Campus Initiatives of the college include:

1. Conduction of regular Green Audit, Energy Audit, Environment Audit.
2. Observance of No Vehicle Day
3. Ban on single-use Plastic in college campus.
4. Maintaining Cleanliness
5. Collecting biodegradable and Non degradable waste separately.
6. Paperless transactions / reuse of one side printed papers.



7. Solar power as alternate energy source
8. Rain-water harvesting system
9. Tree Plantation and Protecting Heritage Trees in Surrounding
9. Pedestrian-Friendly pathways.

Period of Measurement

- 1) Policy execution responsibility rests with all stake holders.
- 2) Review Frequently and initiate the action immediately.

Approved By: College development committee (CDC)



A handwritten signature in blue ink, appearing to read "Bhola".

PRINCIPAL
Late N.P.W. College
Andhalgaon Dist.-Bhandara

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Ref. No. :- NPWC/

Date:-

Green Initiative Cell

The Green Initiative cell is formed on 14/09/2018. The following members have accepted the responsibility to work on this committee. The details of committee members are as follow:

S.N.	Name of staff	Designation	Position
1	Shri. Rajkumar D. Jagnit	Assist. Professor	Convener
2	Dr. Sudhirkumar R. Munishwar	Assist. Professor	Member
3	Dr. Sachin R. Rahangdale	Assist. Professor	Member
4	Miss. Harsha M. Thakre	Assist. Professor	Member
5	Shri. Anil Raut	Assist. Professor	Member



A handwritten signature in blue ink, likely of the Principal.

PRINCIPAL
Late N.P.W. College
Andhalgaon Dist.-Bhandara

Laxmi Shikshan Sanstha & Krida Mandal's College Code :- 524

**Late Nirdhanrao Patil Waghaye Arts, Commerce &
Science College Andhalgaon**

Ta: Mohadi Dist: Bhandara 441914

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Email Id :- latenpwcandhalgaon@gmail.com

Website :- www.npwcandhalgaon.org

Ref. No. :- NPWC/

Date:- 12/04/2022

NOTICE /CIRCULAR

College has organized a lecture on "Energy Conservation A need of hour and Electricity Saving Tips" under the aegis of Green Initiative Cell. All the students are herewith instructed to attend the lecture without fail.

Date : 18/04/2022

Time : 10.00 AM



Convenor

Green Initiative Cell

Late Nirdhanrao Patil Waghaye Arts, Commerce & Science College Andhalgaon

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Website: - www.npwcandhalgaon.org

Ref. No. :- NPWC/

Date:-

ACADEMIC YEAR 2021-2022

Report of Activities for the Implementation of the GREEN INITIATIVES Document:

College has organized lecture on Energy Conservation and Electricity Saving Tips on 18/04/22. In the lecture Prof. Harshit Dalvi (B.E. Electrical) has guided to students and staff members. In all 16 staff members and 52 students attended the programme.

College decided to publish booklet on energy saving tips and distribute it to students, staff and society.




Convener

Green Initiative Cell

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Ref. No. :- NPWC/

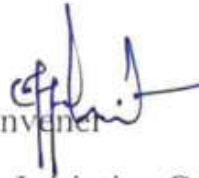
Date:- 02/02/2020

NOTICE /CIRCULAR

All the students are herewith instructed to attend the lecture on "Waste Material Management : Pros and cons" under the Green Campus Initiative is organized by Green Initiative Cell.

Date : 07/02/2020

Time : 3.00 PM


Convenor

Green Initiative Cell



Laxmi Shikshan Sanstha & Krida Mandal's College Code :- 524

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Website: - www.npwcandhalgaon.org

Ref. No. :- NPWC/

Date:-

ACADEMIC YEAR 2019-2020

Report of Activities for the Implementation of the GREEN INITIATIVES Document:

College has organized lecture on Waste Material Management on 07/02/2020. In the lecture Shri. Dharmendra Sakharkar (Sanitation Deptt. Nagar Parishad Bhandara) has guided to students. In all 63 students attended the programme. The programme was very useful and students started working on it at their home also.




Convener

Green Initiative Cell

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Website: - www.npwcandhalgaon.org

Ref. No. :- NPWC/

Date:- 10/9/2019

NOTICE /CIRCULAR

College has organized a lecture on "Advantages of Renewable Energy Sources" under the aegis of Green Initiative Cell. All the students are herewith instructed to attend the lecture without fail.

Date : 16/09/2019

Time : 11.00 AM


Convener

Green Initiative Cell



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Website: - www.npwcandhalgaon.org

Ref. No. :- NPWC/

Date:-

ACADEMIC YEAR 2019-2020

Report of Activities for the Implementation of the GREEN INITIATIVES Document:

College has organized lecture on Advantages of Renewable Energy Sources on 16/09/2019. In the lecture Shri. Keshav Zode (M.Sc Electronics) has guided to students on the effective use of alternate energy sources. In This programme Shri. Dattaraj Pawar of Tata Solar also guided through video call. In all 49 students attended the programme. The programme proved very beneficial for students about energy conservation.




Convener

Green Initiative Cell

Laxmi Shikshan Sanstha & Krida Mandal's College Code :- 524
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Ta: Mohadi Dist: Bhandara 441914
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Email Id: - latenpwcandhalgaon@gmail.com

Website: - www.npwcandhalgaon.org

Ref. No. :- NPWC/

Date:- 28/12/2018

NOTICE /CIRCULAR

All the students should Voluntarily attend the "Activity on Plastic Free Campus"
organized under the aegis of Green Initiative Cell.

Date : 03/01/2019

Time : 3.00 PM


Convenor

Green Initiative Cell



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Website: - www.npwcandhalgaon.org

Ref. No. :- NPWC/

Date:-

ACADEMIC YEAR 2018-2019

Report of Activities for the Implementation of the GREEN INITIATIVES Document:

College has organized Activity on Plastic Free Campus on 03/01/2019 under the aegis of Green Initiative Cell and NSS. In this activity 38 students of NSS and 15 other students participated. In this activity they clean the college campus by picking all kind of waste plastic materials. They extended this activity beyond the campus and created awareness about plastic free Environment. This activity was conducted under the

In-charge ship of Prof. R. D. Jagnit.




Convener

Green Initiative Cell

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Email Id: - latenpwcandhalgaon@gmail.com

Website: - www.npwcandhalgaon.org

Ref. No. :- NPWC/

Date:- 22/9/2018

NOTICE /CIRCULAR

All the students are herewith instructed to attend the lecture on "Water Conservation" under the Green Campus Initiative organized by college.

Date : 03/10/2018

Time : 11.00 AM




Convener

Green Initiative Cell

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Website: - www.npwcandhalgaon.org

Ref. No. :- NPWC/

Date:-

ACADEMIC YEAR 2018-2019

Report of Activities for the Implementation of the GREEN INITIATIVES Document

College has organized lecture on Water Conservation on 03/10/2018. In the lecture Dr. Sudhakar Shende has guided to students and staff members about the advantages of water conservation and bad effects of wastage of water. He had given many useful tips to avoid the wastage of water. In all 10 staff members and 39 students attended the programme.

NSS of College decided to create awareness about water conservation in society.




Convener

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Email Id: - latenpwcandhalgaon@gmail.com

Website: - www.npwcandhalgaon.org

Ref. No. :- NPWC/1308/DVV/1

Date:-

ACTION TAKEN REPORT

ON

CLEAN & GREEN CAMPUS INITIATIVE BY COLLEGE

1. Water Conservation Efforts:

College has organized lecture on Water Conservation by Dr. Sudhakar S. Shende and every year continuing the activity.

2. Green Initiative and One time Usable Plastic Eradication:

College has organized Activity on Plastic Free Campus under the aegis of Green Initiative Cell and NSS. College extended this activity beyond the campus and created awareness about plastic free Environment. It become one of our Best Practice.

3. Awareness for Renewable Energy Sources:

College is organizing lecture on Advantages of Renewable Energy Sources from last three years. Shri. Dattaraj Pawar of Tata Solar, guided on various advantages of alternate energy sources.

4. Initiatives for proper use of waste material management:

College has organized lecture on Waste Material Management by Shri. Dharmendra Sakharkar (Sanitation Deptt. Nagar Parishad Bhandara).



5. Energy Conservation Initiatives:

College started energy conservation activities through lecture Prof. Harshit Dalvi (B.E. Electrical). And continuing it every year.

6. Initiate the activities to Reduce the use of paper:

College created awareness to go from LESS PAPERS to PAPERLESS Administration.

7. Tree Plantations activities:

College organized lectures of Forest officers for guiding students and staff members through presentation about need of Forest Conservation.

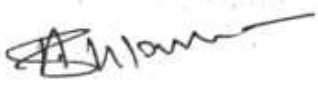
8. Efforts for reducing carbon emission:

The care of the campus surrounding is taken so that environment has maintained at low level of carbon emission and pollution. The degradable and non degradable bio waste has been segregated and separated to recycle further.

9. Efforts for Beyond the Campus Environmental Conservation Promotional Activities:

College started organizing lectures on nature protection, Environment conservation every year.




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Email Id: - latenpwcandhalgaon@gmail.com

Website: - www.npwcandhalgaon.org

Ref. No. :- NPWC/1308/DVY/2

Date:-

ACHIEVEMENT REPORT

ON

CLEAN & GREEN CAMPUS INITIATIVE BY COLLEGE

1. Water Conservation Efforts:

Students and staff members started avoiding wastage of water in college and beyond the campus.

2. Green Initiative and One time Usable Plastic Eradication:

Students and staff members are avoiding use of one time usable plastics in their daily life. College distributed Spoon and Plates to the road side vendors to avoid use of OTU Plastic. This activity is extended to 8-10 villages.

3. Awareness for Renewable Energy Sources:

Awareness about various government schemes of subsidy is created. Many students and villagers installed solar panels in their farms.

4. Initiatives for proper use of waste material management:

College started using bio degradable waste for compost fertilizer in college premises.

5. Energy Conservation Initiatives:

College published booklet on Energy Saving Tips and distributed it to students, staff and society members. Energy saving activity became one of the best practice of college over a period of time. Students started practicing 1 hour away from use of e-gadget at their home.



6. Initiate the activities to Reduce the use of paper:

College started using various in-house communication through E-mail, Whats-app and SMS.

7. Tree Plantations activities:

College signed MOU with forest department and actively participated in tree plantation movement beyond the campus. Students every year visits heritage trees in the area for tree conservation. Green Initiative cell and NSS wing of College has planted more than 350 plants in last five years beyond the campus.

8. Efforts for reducing carbon emission:

College avoids burning of waste materials which is collected from College campus and motivate people in surrounding areas for same. College also practices No Vehicle Day twice a year.

9. Efforts for Beyond the Campus Environmental Conservation Promotional Activities:

Villagers started using energy saving tips, avoiding use of OTU plastics, Tree plantation, Tree conservation in collaboration with Grampanchayat, forest department etc. Cleanliness drive in the village through thoughts of Rashtrasant Tukdoji Maharaj given in Gramgeeta.



PRINCIPAL
Late N.P.W. College
Andhalgaon Dist.-Bhandara

ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society,
Near Mukhtangan English School, Parvati, Pune 411 009
Tel: 09890444795 Email: engress123@gmail.com

Ref: ES/NPW/21-22/02

Date: 16/04/2022

CERTIFICATE

This is to certify that we have conducted Green Audit at Late NPW Arts, Commerce and Science College Andhalgaon, Mohadi, Bhandara, in the Academic year 2021-22.

The College has adopted following Green Initiatives:

- Usage of Energy Efficient LED Light Fitting
- Maximum Usage of Day Lighting
- The College has installed Septic Tank and is cleaned periodically.
- Implementation of Rain Water Management Project
- Maintenance of good Internal Road
- Tree Plantation in the campus
- Creation of awareness by Display of Posters on Resource Conservation

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

For Engress Services,



A Y Mehendale,

Certified Energy Auditor, EA-8192

ASSOCHAM GEM Certified Professional: GEM: 22/788



GREEN AUDIT REPORT
of
Laxmi Education Society's
Late N.P.W. Arts, Commerce & Science
College

Andhalgaon Dist. Bhandara (M.H.) – 441 914



Year: 2021-22

Prepared by:

Engress Services

Yashashree, 26, Nirmal Bag Society,
Near Muktang English School, Parvati, Pune 411009
Phone: 09890444795 Email: engress123@gmail.com



GRAMPANCHAYAT KARYALAY ANDHALGAON

TA. MOHADI DIST. BHANDARA 441914

Ref No. :-

Date :- 10/10/2023



GREEN AUDIT CERTIFICATE

This is the Certificate for Audit undertaken by Government recognized department of Grampanchayat Andhalgaon at the site of Late Nirdhanrao Patil Waghaye Arts, Commerce and Science College Andhalgaon regarding the Green Initiative, Water Conservation, Energy conservation and Waste Management issued on 20/06/23.


Administrative Head of Gram Panchayat
ग्रामपंचायत, आंधलगॉण

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ACKNOWLEDGEMENT

We Engress Services, Pune, express our sincere gratitude to the management of at Late N.P.W. Arts, Commerce & Science College, Andhalgaon, for awarding us the assignment of Green Audit of their Campus for the Academic Year: 2021-22.

We are thankful to all the Principal and Staff members for helping us during the field study.



EXECUTIVE SUMMARY

1. Late N.P.W. Arts, Commerce & Science College, Andhalgaon consumes Energy in the form of Electrical Energy; used for various Electrical Equipment, office & other facilities.

1. Present Energy Consumption & CO₂ Emissions:

No	Parameter/ Value	Energy Purchased, kWh	CO ₂ Emissions, MT
1	Total	264	0.2376
2	Maximum	39	0.0351
3	Minimum	4	0.0036
4	Average	22	0.0198

3. Various initiatives taken for Energy Conservation:

- Usage of Energy Efficient LED Lighting
- Maximum Usage of Day Lighting

4. Usage of Renewable Energy & CO₂ Emission Reduction:

- It is recommended to install roof-top solar PV Plant on college building.

5. Waste Management:

5.1 Segregation of Waste at Source:

The Waste is segregated at source and the recyclable waste, like paper, plastic waste is handed over to Authorized waste collecting agent for further recycling.

5.2 Liquid Waste Management:

The College has installed Septic and is cleaned periodically.

5.3-Waste Management:

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

5.4 Sanitary Waste Incinerator:

The Institute has not install Sanitary Waste Incinerator, it is recommended to install Sanitary Waste Incinerator for disposal of the Sanitary Waste.

6. Rain Water Management:

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

7. Green & Sustainable Initiatives

- Maintenance of Internal Plantation
- Display of Posters on Resource Conservation

8. Notes & Assumptions:

1. 1 kWh of Electrical Energy releases 0.9 Kg of CO₂ into atmosphere
2. Average Energy generated by 1 kWp Solar PV Plant : 4 kWh/Day
3. Annual Solar Energy Generation Days: 300 Nos

9. References:

- For CO₂ Emissions: www.tatapower.com
- For Roof Top Solar Energy Generation: www.solarrooftop.gov.in
- For Various Indoor Air Parameters: www.ishrae.com
- For AQI & Water Quality Standards: www.cpcb.com

ABBREVIATIONS

BEE	Bureau of Energy Efficiency
kWh	Kilo Watt Hour
LPD	Liters Per Day
Kg	Kilo Gram
MT	Metric Ton
CO ₂	Carbon Di Oxide
Qty	Quantity

CHAPTER-I INTRODUCTION

1.1 Objectives:

1. To study present Energy Consumption
2. To Study CO₂ emissions
3. To study usage of Renewable Energy
4. Study of Waste Management
5. Study of Rain Water Management
6. Study of Green & Sustainable Practices

1.2 General Details of College: Table No 1:

No	Head	Particulars
1	Name of Institution	Late N.P.W. Arts, Commerce & Science College
2	Address	Andhalgaon, Mohadi Dist. Bhandara (M.H.) – 441 914
3	Affiliation	Rashtra Sant Tukadoji Maharaj Nagpur University



CHAPTER-II

STUDY OF PRESENT ENERGY CONSUMPTION

In this chapter, we present the analysis of last year Electricity Bills

Table No 2: Electrical Bill Analysis- 2021-22:

No	Month	Energy Purchased, kWh
1	Mar-21	34
2	Apr-21	4
3	May-21	18
4	Jun-21	21
5	Jul-21	29
6	Aug-21	34
7	Sep-21	39
8	Oct-21	30
9	Nov-21	22
10	Dec-21	9
11	Jan-22	9
12	Feb-22	15
13	Total	264
14	Maximum	39
15	Minimum	4
16	Average	22

Chart No 1: Variation in Monthly Energy Consumption:



Table No 3: Variation in Important Parameters:

No	Parameter/ Variation	Energy Purchased, kWh
1	Total	264
2	Maximum	39
3	Minimum	4
4	Average	22

CHAPTER III

STUDY OF CARBON FOOTPRINTING

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 is as under.

- 1 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 No4: Month wise CO₂ Emissions:

No	Month	Energy Purchased, kWh	CO ₂ Emissions, MT
1	Mar-21	34	0.0306
2	Apr-21	4	0.0036
3	May-21	18	0.0162
4	Jun-21	21	0.0189
5	Jul-21	29	0.0261
6	Aug-21	34	0.0306
7	Sep-21	39	0.0351
8	Oct-21	30	0.027
9	Nov-21	22	0.0198
10	Dec-21	9	0.0081
11	Jan-22	9	0.0081
12	Feb-22	15	0.0135
13	Total	264	0.2376
14	Maximum	39	0.0351
15	Minimum	4	0.0036
16	Average	22	0.0198

Chart No 2: Month wise CO₂Emissions:

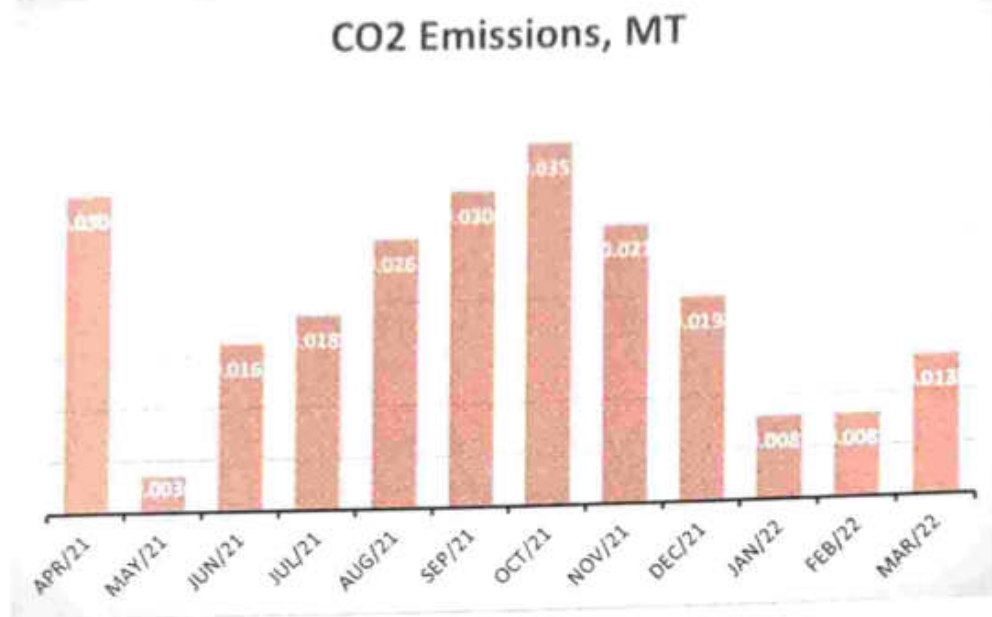


Table No 5: Variation in Important Parameters:

No	Parameter/ Variation	Energy Purchased, kWh	CO2 Emissions, MT
1	Total	264	0.2376
2	Maximum	39	0.0351
3	Minimum	4	0.0036
4	Average	22	0.0198

CHAPTER IV

STUDY OF USAGE OF RENEWABLE ENERGY

As on today College has not install solar roof-top PV plant.

CHAPTER V

STUDY OF WASTE MANAGEMENT

5.1 Segregation of Waste at Source:

The Waste is segregated at source and the recyclable waste, like paper waste is handed over to authorized waste collecting agent for further recycling.



5.2 Liquid Waste Management:

The College has installed Septic tank and is cleaned periodically.

5.4 E-Waste Management:

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

5.5 Sanitary Waste Incinerator:

The Institute has not install Sanitary Waste Incinerator, it is recommended to install Sanitary Waste Incinerator for disposal of the Sanitary Waste.

CHAPTER-VI

STUDY OF RAIN WATER MANAGEMENT

The Institute has implemented the Rain Water Management Project. The Institute has installed Pipes from the terrace and the Rain water falling on the terrace is gathered and is used for recharging the land water table.

Photograph of Rain Water Management & Pipe Section:



CHAPTER-VII

STUDY OF GREEN & SUSTAINABLE PRACTICES

6.1 Internal Tree Plantation:

The College has well maintained Plantation in the campus.

Photograph of Tree plantation:



6.2 Internal Pedestrian:

The College has well maintained internal Pedestrian to facilitate the easy movement of the students within the campus.

Photograph of Internal Pedestrian:



6.3 Creation of Awareness about Energy Conservation:

The Institute has displayed posters emphasizing on importance of Energy Conservation.

Photograph of Poster on Energy Conservation:



ANNEXURE-1:

DETAILS OF TREES& PLANTS:

No	Name of Trees	Quantity
1	Azadirachta Indica (Neem)	2
2	Psidium guajava L. (Guava)	2
3	Citrus limon (Lemon)	3
4	Musa acuminate (Banana)	6
5	Mangifera indica (Mango)	1
6	Hibiscus rosa-sinensis	4

ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society, Near Muktangan English School,
Parvati, Pune 411 009 Tel: 09890444795 Email: engress123@gmail.com
MEDA Registration No: ECN/2022-23/CR-43/1709
ISO: 9001-2015 Certified (Cert No: 23EQKC13),
ISO: 14001-2015 Certified (Cert No: 23EEKW20)

GREEN AUDIT CERTIFICATE

Certificate No: ES/NPW/22-23/02

Date: 12/07/2023

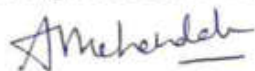
This is to certify that we have conducted Green Audit at Late NPW Arts, Commerce and Science College Andhalgaon, Mohadi, Bhandara, Maharashtra, in the Year 2022-23.

The Institute has adopted following Energy Efficient & Green Practices:

- Usage of Energy Efficient LED Light Fitting
- Segregation of Waste at Source
- College has installed septic tanks and it cleans periodically
- Installation of Rain Water Management Project
- Maintenance of good Internal Road
- Tree Plantation in the campus
- Creation of awareness by display of Posters on Resource Conservation

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

For Engress Services,



A Y Mehendale,
B E- Mech, M Tech-Energy, Certified Energy Auditor, EA-8192
ASSOCHAM GEM Certified Professional: GEM: 22/788



ENGRESS SERVICES

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Date: 16/04/2022

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The College has adopted following Energy Efficient practices:

- Usage of Energy Efficient LED Fittings
- Maximum usage of Day Lighting

We appreciate the support of Management, involvement of faculty members and students in the process of making the Campus Energy Efficient.

For Engress Services,



A Y Mehendale,
Certified Energy Auditor
EA-8192



ENERGY AUDIT REPORT
of
Laxmi Education Society's
Late N.P.W. Arts, Commerce & Science
College

Andhalgaon Dist. Bhandara (M.H.) – 441 914



Year: 2021-22

Prepared by:

Engress Services

Yashashree, 26, Nirmal Bag Society,
Near Muktangan English School, Parvati, Pune 411009
Phone: 09890444795 Email: engress123@gmail.com



MAHARASHTRA ENERGY DEVELOPMENT AGENCY



Maharashtra Energy Development Agency

(Government of Maharashtra Institution)

Aundh Road, Opposite Spicer College Road, Near Commissionerate of Animal Husbandary,

Aundh, Pune, Maharashtra 411067

Ph No: 020-35000450

Email: eeo@mahaurja.com, Web: www.mahaurja.com

ECN/2022-23-CR-43/1709

10th May, 2022

**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 Engress Services
Yashshree, 26, Nirmal Bag Society,
Near Muktangan English School,
Parvati, Pune - 411 009

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

Registration Number : MEDA/ECN/2022-23/Class A/EA-32.

- 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 **09th May, 2024** 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)



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ACKNOWLEDGEMENT

We Engress Services, Pune, express our sincere gratitude to the management of Late N.P.W. Arts, Commerce & Science College, Andhalgaon for awarding us the assignment of Energy Audit of their Campus for the Academic Year: 21-22.

We are thankful to all the Principal and Staff members for helping us during the field study.



EXECUTIVE SUMMARY

1. Late N.P.W. Arts, Commerce & Science College, Andhalgaon consumes Energy in the form of Electrical Energy used for various Electrical Equipment, office & other facilities.

2. Present Energy Consumption & CO₂ Emission:

No	Parameter/ Value	Energy Purchased, kWh	CO ₂ Emissions, MT
1	Total	264	0.2376
2	Maximum	39	0.0351
3	Minimum	4	0.0036
4	Average	22	0.0198

3. Energy Conservation projects already installed:

- Usage of Energy Efficient LED fittings
- Maximum Usage of Day Lighting

4. Usage of Alternate Energy:

- As on today College has not installed solar rooftop power plant. It is recommended to install solar power rooftop system on the college building as per availability of funds.

5. Usage of LED Lighting:

- The Total Lighting Load is 0.3 KW
- The Total LED Lighting Load is 0.3 KW.
- The percentage of Annual LED Lighting to Annual Lighting Demand is 100 %.

6. Assumptions:

1. 1 kWh of Electrical Energy releases 0.9 Kg of CO₂ into atmosphere.
2. 100 LPD Solar Thermal System saves 1500 kWh of Electrical Energy per Annum.
3. Average Energy generated by 1 kWp Solar PV Plant: 4 kWh/Day.
4. Annual Solar Energy Generation Days: 300 Nos.

7. References:

- For CO₂ Emissions: www.tatapower.com
- For Roof Top Solar Energy Generation: www.solarrooftop.gov.in
- For Various Indoor Air Parameters: www.ishrae.com
- For AQI & Water Quality Standards: www.cpcb.com

ABBREVIATIONS

LED	: Light Emitting Diode
MSEDCL	: Maharashtra State Electricity Distribution Company Limited
IQAC	: Internal Quality Assurance Cell
BEE	: Bureau of Energy Efficiency
FTL	: Fluorescent Tube Light
Kg	: Kilo Gram
kWh	: kilo-Watt Hour
CO ₂	: Carbon Di Oxide
MT	: Metric Ton



CHAPTER-I INTRODUCTION

1.1 Objectives:

1. To study present Energy Consumption
2. To Study the present CO₂ emissions
3. To study usage of Alternate Energy
4. To study usage of LED Lighting

1.2 Table No 1: General Details of the College:

No	Head	Particulars
1	Name of Institution	Late N.P.W. Arts, Commerce & Science College
2	Address	Andhalgaon, Mohadi Dist. Bhandara (M.H.) – 441 914
3	Affiliation	Rashtra Sant Tukadoji Maharaj Nagpur University



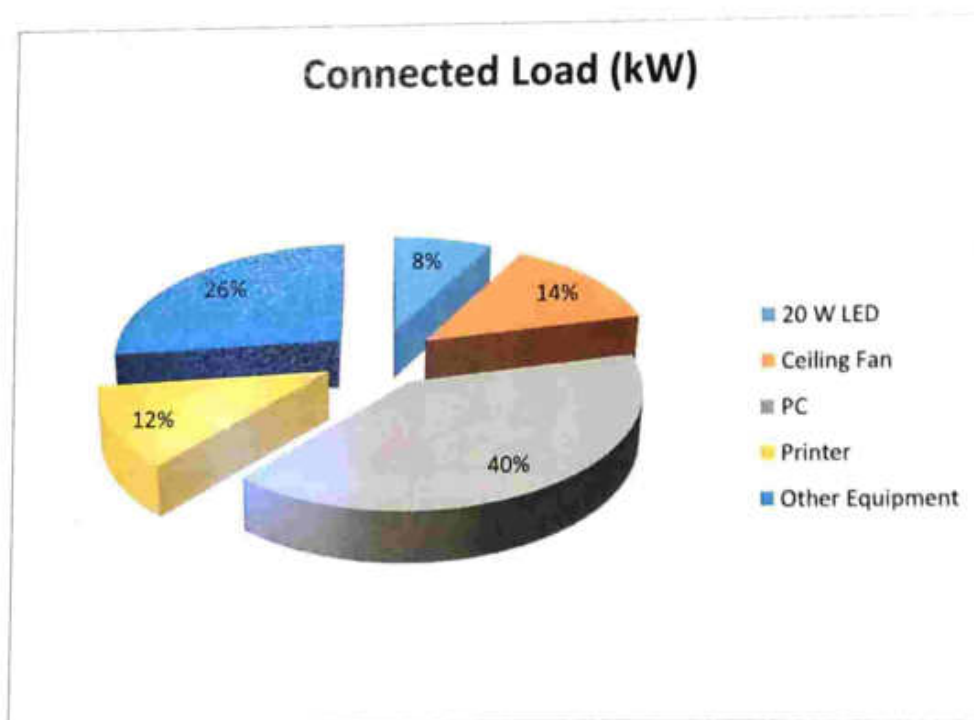
CHAPTER-II STUDY OF CONNECTED LOAD

The major contributors to the connected load of the College include:

Table No 2: Study of Equipment wise Connected Load:

No	Equipment	Qty	Load, W/Unit	Load, kW
1	20 W LED	15	20	0.3
3	Ceiling Fan	8	65	0.52
4	PC	10	150	1.5
5	Printer	3	150	0.45
7	Other Equipment	20	50	1
8	Total			4

Chart No 1: Study of Connected Load:



CHAPTER-III

STUDY OF PRESENT ENERGY CONSUMPTION

In this chapter, we present the analysis of Electrical Energy Consumption.

Table No 3: Electrical Bill Analysis- 2021-22:

No	Month	Energy Purchased, kWh
1	Mar-21	34
2	Apr-21	4
3	May-21	18
4	Jun-21	21
5	Jul-21	29
6	Aug-21	34
7	Sep-21	39
8	Oct-21	30
9	Nov-21	22
10	Dec-21	9
11	Jan-22	9
12	Feb-22	15
13	Total	264
14	Maximum	39
15	Minimum	4
16	Average	22

Chart No 2: Variation in Monthly Energy Consumption:

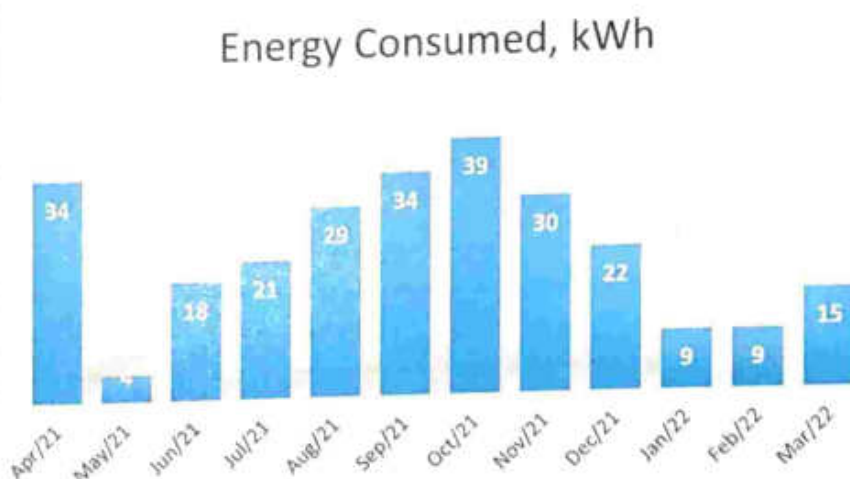


Table No 4: Variation in Important Parameters:

No	Parameter/ Variation	Energy Purchased, kWh
1	Total	264
2	Maximum	39
3	Minimum	4
4	Average	22

CHAPTER-IV CARBON FOOTPRINTING

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 taking into account the usage of the Electrical Energy.

Basis for computation of CO₂ Emissions:

- 1 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 No5: Month wise CO₂ Emissions:

No	Month	Energy Purchased, kWh	CO ₂ Emissions, MT
1	Mar-21	34	0.0306
2	Apr-21	4	0.0036
3	May-21	18	0.0162
4	Jun-21	21	0.0189
5	Jul-21	29	0.0261
6	Aug-21	34	0.0306
7	Sep-21	39	0.0351
8	Oct-21	30	0.027
9	Nov-21	22	0.0198
10	Dec-21	9	0.0081
11	Jan-22	9	0.0081
12	Feb-22	15	0.0135
13	Total	264	0.2376
14	Maximum	39	0.0351
15	Minimum	4	0.0036
16	Average	22	0.0198

Chart No 3: Month wise CO₂ Emissions:

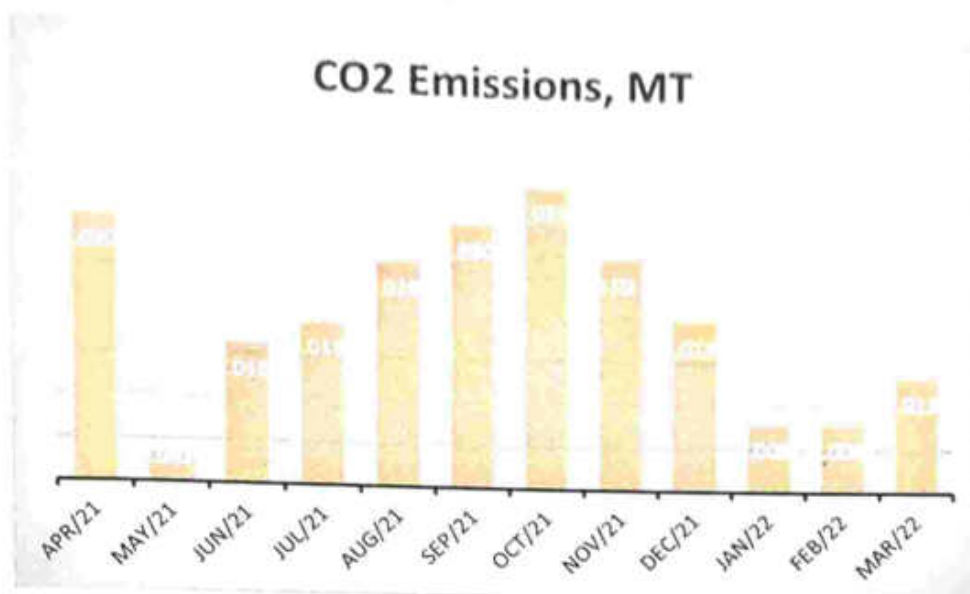


Table No 6: Important Parameters:

No	Parameter/ Variation	Energy Purchased, kWh	CO2 Emissions, MT
1	Total	264	0.2376
2	Maximum	39	0.0351
3	Minimum	4	0.0036
4	Average	22	0.0198

CHAPTER V

STUDY OF USAGE OF ALTERNATE ENERGY

As on today College has not install solar roof-top PV plant, it is recommended to install solar roof-top PV plant on the college building.



CHAPTER VI

STUDY OF USAGE OF LED LIGHTING

In this chapter, we compute the percentage of usage of LED Lighting to Annual Lighting power requirement.

Table No 8: Percentage of Usage of LED Lighting to Annual Lighting Load

No	Particulars	Value	Unit
1	No of 20 W LED Tube Lights	15	Nos
2	Demand of 20 W LED Tube Light	20	W/Unit
3	Total Electrical Load of 20 W LED Fittings	0.3	kW
4	Annual Total Lighting Load = 3	0.3	kWh
5	Annual LED Lighting Load = 6	0.3	kWh
6	Annual Lighting Requirement met by LED= $5 \times 100/4$	100.00	%

ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society, Near Muktangan English School, Parvati, Pune 411 009
Tel: 09890444795 Email: engress123@gmail.com

MEDA Registration No: ECN/2022-23/CR-43/1709

ISO: 9001-2015 Certified (Cert No: 23EQKC13),

ISO: 14001-2015 Certified (Cert No: 23EEKW20)

ENERGY AUDIT CERTIFICATE

Certificate No: ES/NPW/22-23/01

Date: 12/07/2023

This is to certify that we have conducted an Energy Audit at Late NPW Arts, Commerce and Science College Andhalgaon, Mohadi, Bhandara, Maharashtra, in the Year 2022-23.

The Institute has adopted following Energy Efficient practices:

- Usage of Energy Efficient LED Fittings
- Maximum usage of Day Lighting

We appreciate the support of Management, involvement of faculty members and students in the process of making the Campus Energy Efficient.

For Engress Services,



A Y Mehendale,
B E-Mechanical, M Tech- Energy
BEE Certified Energy Auditor, EA-8192



Environment and Energy usage Policy of Institute

The policy focuses on the environment sustainability towards conservation of nature and optimal usage of energy by avoiding wastage of resources and doing audits for this.

Scope of the Policy:

1. To protect and nurture environment.
2. To encourage students to keep the environment safe and clean.
3. To inculcate habit of electricity saving.
4. To reduce the energy wastages.
5. Zero use of one time usable plastic.
6. To create awareness about the Energy savings tips.
7. To reduce students' electricity utility bills of home.
8. To promote the use of electricity judiciously.
9. Yearly audits.

Implementation Procedure:

1. A monitoring is done through Green initiative committee working under IQAC.
2. Records of Notices, Agenda, Minutes Should be maintained.
3. The Committee should collaborate with the Extension Cells of the College to organize Guest lectures, awareness drives, competitions and other activities.
4. For audit college having expertise in the field of energy and environment, so audit is done by in-house experts with the support from outside responsible person in this field.


PRINCIPAL
Late N.P.W. College
Andhalgaon Dist.-Bhandara



Environment and Energy usage of the college include:

1. Conduction of regular Energy Audit, Environment Audit.
2. Observance of No Vehicle Day.
3. Ban on single-use Plastic in college campus.
4. Collecting biodegradable and non degradable waste separately.
5. Reuse of one side printed papers.
6. Conservation Day is celebrated on December 14.
7. Developing habits of turning off devices, appliances when not in use.
8. Poster making and slogan writing activities for students.
9. Solar power as alternate energy source

Period of measurement:

- 1) Policy execution responsibility rests with all stake holders.
- 2) Review Frequently and initiate the action immediately.

Approved By: IQAC and then by College development committee (CDC)




PRINCIPAL
Late N.P.W. College
Andhalgaon Dist.-Bhandara

**Late Nirdhanrao Patil Waghaye Arts, Commerce &
Science College Andhalgaon**

Ta: Mohadi Dist: Bhandara 441914

(Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur)

Email Id: - latenpwcandhalgaon@gmail.com

Website: - www.npwcandhalgaon.org

Ref. No. :- NPWC/

Date:-

College has conducted many environmental promotional activities beyond the campus:

The activities include:

1. Tree plantation at various places like Grampanchayat, Other schools, PHC etc.
2. Forest conservation activities in the social forestry in collaboration with Forest Department Tumsar.
3. Promotional campaign for avoiding use of one time usable plastic. In this activity college distributed steel plates, spoon to road side vendors to stop use of OTU and distribution of cloth bags in vegetable market to stop the use of polythene bags with low micron.
4. Electricity saving habits and distribution of booklet for electricity saving tips in society. Awareness is created about the punishment of illegal use of electricity.
5. College taking lot of efforts to conserve heritage trees which are in nearby area. Students are visiting every year to such trees.
6. Staff and students of college were visited during Gaimukh Yatra every year for the helps of pilgrims, clean the place, to collect the plastic and wastage food etc.. For this work college got appreciation letter from police station Andhalgaon.
7. College is creating awareness about not to throw the plastics and other materials in water drainage system.
8. College students are cleaning the areas in Grampanchayat, Rashtrasant Tukadoji Maharaj Bhavan under the Gramgeeta promotions.



PRINCIPAL
Late N.P.W. College
Andhalgaon Dist.-Bhandara

Laxmi Shikshan Sanstha & Krida Mandal's College Code :- 524

Late Nirdhanrao Patil Waghaye Arts, Commerce & Science College Andhalgaon

Ta: Mohadi Dist: Bhandara 441914

(Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur)

Email Id: - latenpwcandhalgaon@gmail.com

Website: - www.npwcandhalgaon.org

Ref. No. :- NPWC/

Date:-



Tree Plantation beyond the College Campus. at Grampanchayat Andhalgaon



Sapling distribution beyond the College Campus. at Grampanchayat Andhalgaon



Steel Plate distribution to roadside vendors to avoid the One Time Usable Plastic





Conservation of Heritage Trees at nearby place of college Campus





Photos of Gaimukh Yatra every year for the helps of Pilgrims, clean the place, to collect the plastic and wastage foods.





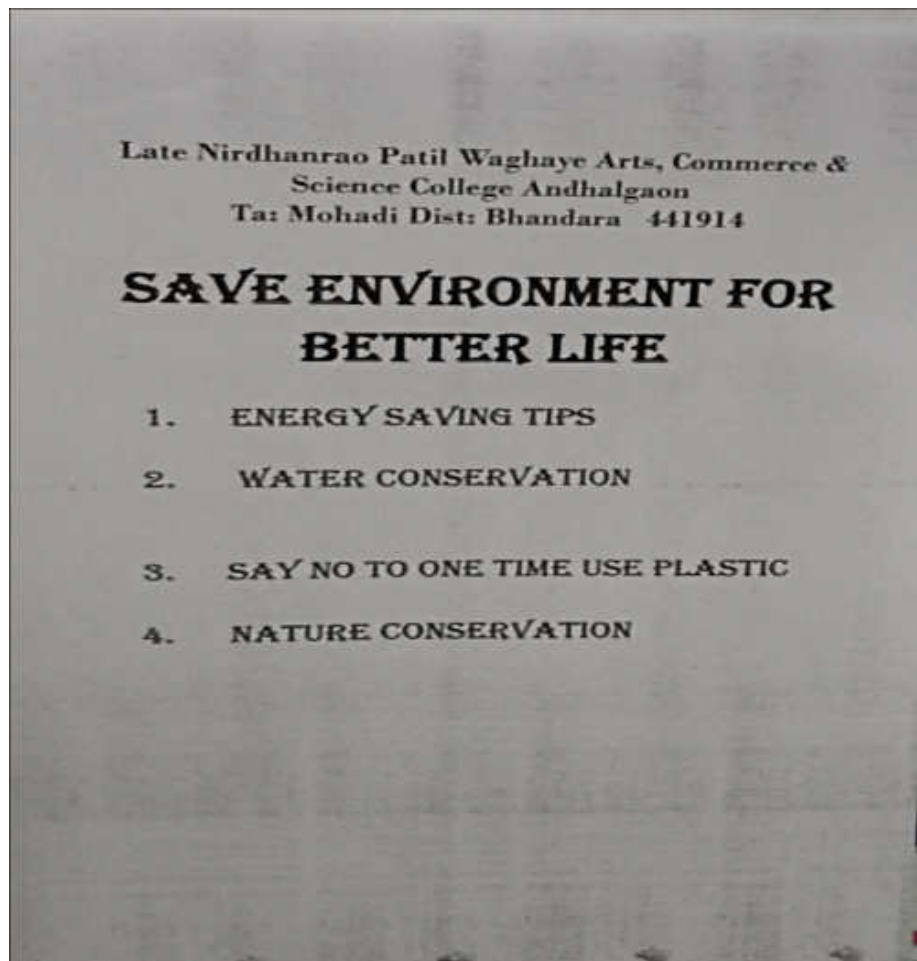
Photos of Cleanliness Drive to collect the one time usable plastic beyond the campus



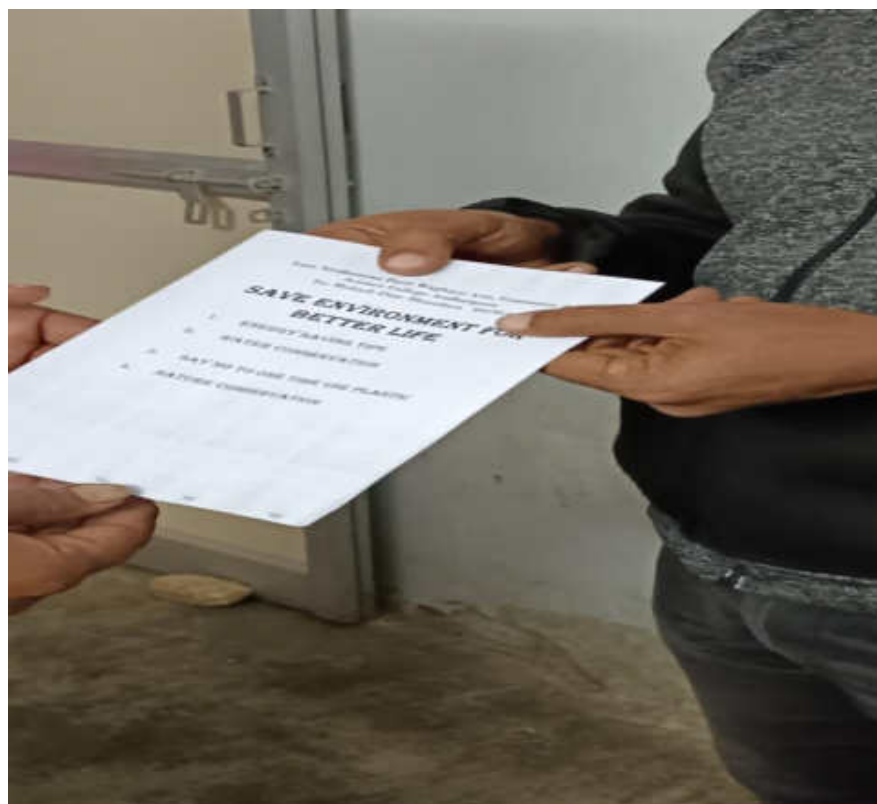
Photos of Students for Gramgeeta promotion



Tree Plantation and plant saplings beyond the College Campus. at Police Station Andhalgaon



Promotion of Energy saving tips using leaflets beyond the campus



फूलों की खेती पर किया मार्गदर्शन

NBRI के वैज्ञानिकों ने दिया प्रशिक्षण



■ देवरी (सं). गोंदिया जिले के देवरी में चेतनागिरी बायोटेक, कृषकवेद और ग्रामोत्सव के सहयोग से राष्ट्रीय वनस्पति अनुसंधान संस्थान (एनबीआरआई) लखनऊ (यूपी) ने फूलों की खेती का कार्यक्रम लिया. एनबीआरआई के वरिष्ठ वैज्ञानिक डा. मनीष भोयर ने इस कार्यक्रम में फूलों की खेती पर विशेष मार्गदर्शन दिया. उन्होंने बताया कि कैसे पारंपरिक खेती के साथ-साथ फूलों की खेती किसानों की आय बढ़ाने में मदद कर सकती है. उन्होंने किसानों को यह भी बताया कि एनबीआरआई लखनऊ द्वारा फूलों की खेती के लिए आवश्यक प्रशिक्षण और तकनीक मुफ्त उपलब्ध कराई जाएगी. किसानों के विभिन्न प्रश्नों का जवाब उन्होंने ने

कृषि को उद्यमिता की ओर ले जाने का प्रयास

डा. गिरीश कोरेकर ने कृषि को उद्यमिता की ओर ले जाने की विस्तृत जानकारी दी और उद्योग में फूलों की खेती का महत्वपूर्ण स्थान कैसे है, इस पर मार्गदर्शन दिया. डा. मनीष भोयर, डा. गिरीश कोरेकर, डा. कैलास लोखंडे उपस्थित थे. संचालन डा. सुधीर मुनीश्वर ने किया. सफलतार्थ ओमप्रकाश भलावी, अमित वालाडे, अभय मुनीश्वर, विजय माटे, किरण रामटेके और गणेश मुनीश्वर आदि ने प्रयास किया.

दिया और एनबीआरआई लखनऊ किसानों को फूलों की खेती के लिए मधुमक्खी उत्पादन और संग्रह किट और फूलों की खेती के लिए शहद उत्पादन मुफ्त में प्रदान करेगा.

GREEN CAMPUS INITIATIVES

- 1) No Vehicle
- 2) Ban on OTU Plastic
- 3) Biodegradable -
- 4) Solar power Use
- 5) Reuse Paper, Compost
- 5) Differantly abled friendly
- 6) Water Harvesting
- Non biodegradable Waste
- Save Electricity
- Avoid Wastage of Water
- 7) Tree Plantation — * Save trees. Save nature.



Google

* Trees are on and global Warming has gone
Andhalgaon, Maharashtra, India
9J59+FV8, Agarkar Road, Andhalgaon, Maharashtra 441914, India
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Long 79.620034°
03/10/23 10:53 AM GMT +05:30

GPS Map Camera