

6.5.3

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Government of India



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BHANDARA

Name	City	State
J.M.PATEL Arts, Commerce & Science College, Bhandara	Bhandara	Maharashtra
PSS Arts Commerce College, Pavni	Bhandara	Maharashtra

Showing 1 to 2 of 2 entries (filtered from 3,371 total entries)

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National Institutional Ranking Framework
Ministry of Education
Government of India
Welcome to Data Capturing System: COLLEGE

Submitted Institute Data for NIRF'2024'

Institute Name: J.M.PATEL Arts, Commerce & Science College, Bhandara [IR-C-C-18345]

Sanctioned (Approved) Intake

Academic Year	2022-23	2021-22	2020-21	2019-20	2018-19	2017-18
UG [3 Years Program(s)]	1820	1720	1872	-	-	-
PG [2 Year Program(s)]	419	501	-	-	-	-

Total Actual Student Strength (Program(s) Offered by Your Institution)

(All programs of all years)	No. of Male Students	No. of Female Students	Total Students	Within State (Including male & female)	Outside State (Including male & female)	Outside Country (Including male & female)	Economically Backward (Including male & female)	Socially Challenged (SC+ST+OBC Including male & female)	No. of students receiving full tuition fee reimbursement from the State and Central Government	No. of students receiving full tuition fee reimbursement from Institution Funds	No. of students receiving full tuition fee reimbursement from the Private Bodies	No. of students who are not receiving full tuition fee reimbursement
UG [3 Years Program(s)]	1132	2000	3132	3128	4	0	73	2814	2190	0	0	697
PG [2 Year Program(s)]	160	549	709	709	0	0	8	667	462	0	0	213

Placement & Higher Studies

UG [3 Years Program(s)]: Placement & higher studies for previous 3 years

Academic Year	No. of first year students intake in the year	No. of first year students admitted in the year	Academic Year	No. of students graduating in minimum stipulated time	No. of students placed	Median salary of placed graduates(Amount in Rs.)	No. of students selected for Higher Studies
2018-19	1872	1576	2020-21	910	14	120000(one lakhs twenty thousand)	162
2019-20	1872	1502	2021-22	1045	13	150000(one lakhs fifty thousand)	71
2020-21	1872	1822	2022-23	427	34	180000(one lakhs eighty thousand)	100

PG [2 Years Program(s)]: Placement & higher studies for previous 3 years

Academic Year	No. of first year students intake in the year	No. of first year students admitted in the year	Academic Year	No. of students graduating in minimum stipulated time	No. of students placed	Median salary of placed graduates(Amount in Rs.)	No. of students selected for Higher Studies
2019-20	484	370	2020-21	241	10	180000(one lakhs eighty thousand)	0
2020-21	506	373	2021-22	268	23	180000(one lakhs eighty thousand)	0

2021-22	501	426	2022-23	193	26	180000(one lakhs eighty thousand)	0
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Financial Resources: Utilised Amount for the Capital expenditure for previous 3 years

Academic Year	2022-23	2021-22	2020-21
	Utilised Amount	Utilised Amount	Utilised Amount
Annual Capital Expenditure on Academic Activities and Resources (excluding expenditure on buildings)			
Library	235735 (TWO LAKHS THIRTY FIVE THOUSAND SEVEN HUNDRED THIRTY FIVE)	94115 (NINETY FOUR THOUSAND ONE HUNDRED AND FIFTEEN)	124096 (ONE LAKH TWENTY FOUR THOUSAND AND NINETY SIX)
New Equipment for Laboratories	0 (ZERO)	2833252 (TWENTY EIGHT LAKHS THIRTY THREE THOUSAND TWO HUNDRED AND FIFTY TWO)	0 (ZERO)
Other expenditure on creation of Capital Assets (excluding expenditure on Land and Building)	563647 (FIVE LAKHS SIXTY THREE THOUSAND SIX HUNDRED FORTY SEVEN)	722373 (SEVEN LAKHS TWENTY TWO THOUSAND THREE HUNDRED AND SEVENTY THREE)	1941274 (NINETEEN LAKHS FORTY ONE THOUSAND TWO HUNDRED AND SEVENTY FOUR)

Financial Resources: Utilised Amount for the Operational expenditure for previous 3 years

Academic Year	2022-23	2021-22	2020-21
	Utilised Amount	Utilised Amount	Utilised Amount
Annual Operational Expenditure			
Salaries (Teaching and Non Teaching staff)	132995836 (THIRTEEN CRORES TWENTY NINE LAKHS NINETY FIVE THOUSAND EIGHT HUNDRED THIRTY SIX)	115616084 (ELEVEN CRORES FIFTY SIX LAKHS SIXTEEN THOUSAND AND EIGHTY FOUR)	118593302 (ELEVEN CRORES EIGHTY FIVE LAKHS NINETY THREE THOUSAND THREE HUNDRED AND TWO)
Maintenance of Academic Infrastructure or consumables and other running expenditures(excluding maintenance of hostels and allied services,rent of the building, depreciation cost, etc)	4021709 (FORTY LAKHS TWENTY THOUSAND SEVEN HUNDRED NINE)	12366625 (ONE CRORE TWENTY THREE LAKHS SIXTY SIX THOUSAND SIX HUNDRED AND TWENTY FIVE)	8778249 (EIGHTY SEVEN LAKHS SEVENTY EIGHT THOUSAND TWO HUNDRED AND FORTY NINE)
Seminars/Conferences/Workshops	171018 (ONE LAKHS SEVENTY ONE THOUSAND EIGHTEEN)	4000 (FOUR THOUSAND)	13000 (THIRTEEN THOUSAND)

PCS Facilities: Facilities of physically challenged students

1. Do your institution buildings have Lifts/Ramps?	Yes, less than 40% of the buildings
2. Do your institution have provision for walking aids, including wheelchairs and transportation from one building to another for handicapped students?	Yes
3. Do your institution buildings have specially designed toilets for handicapped students?	Yes, more than 60% of the buildings

Accreditation

NAAC Accreditation

1. Does your institute have a valid NAAC Accreditation?	NO
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Faculty Details

Srno	Name	Age	Designation	Gender	Qualification	Experience (In Months)	Currently working with institution?	Joining Date	Leaving Date	Association type
1	VIKAS P DHOMNE	60	Dean / Principal / Director / Vice Chancellor	Male	Ph.D	219	Yes	30-04-2005	--	Regular

2	SHRIDHAR R SHARMA	58	Associate Professor	Male	Ph.D	417	Yes	10-10-1988	--	Regular
3	ANIL M NAWLAKHE	55	Associate Professor	Male	M.Sc(Phy)	370	Yes	30-09-1992	--	Regular
4	KARTHIK V G S PANICKER	52	Assistant Professor	Male	Ph.D	331	Yes	21-12-1995	--	Regular
5	PRADEEP K MESHRAM	56	Professor	Male	Ph.D	319	Yes	02-12-1996	--	Regular
6	SHYAM W DAFARE	53	Assistant Professor	Male	Ph.D	321	Yes	01-10-1996	--	Regular
7	UJJWALA P WANJARI	51	Professor	Female	Ph.D	319	Yes	01-01-1997	--	Regular
8	MAMTA T RAUT	49	Assistant Professor	Female	M.A	159	Yes	22-04-2010	--	Regular
9	PRASHANT J WALDEO	47	Assistant Professor	Male	M. Phil	149	Yes	24-02-2011	--	Regular
10	PADMAVATHI S RAO	59	Assistant Professor	Female	Ph.D	130	Yes	12-09-2012	--	Regular
11	APARNA M YADAV	40	Assistant Professor	Female	Ph.D	130	Yes	22-09-2012	--	Regular
12	ANAND A MULEY	44	Assistant Professor	Male	Ph.D	126	Yes	02-01-2013	--	Regular
13	GIRDHARILAL B TIWARI	46	Assistant Professor	Male	Ph.D	119	Yes	26-08-2013	--	Regular
14	BHIMRAO S PAWAR	56	Other	Male	Ph.D	118	Yes	02-09-2013	--	Regular
15	UMESH B BANSOD	49	Associate Professor	Male	Ph.D	191	Yes	02-08-2007	--	Regular
16	SAYEDA P QURESHI	55	Assistant Professor	Female	Ph.D	154	Yes	01-09-2010	--	Regular
17	VINI V DHOMNE	54	Assistant Professor	Female	Ph.D	106	Yes	01-09-2014	--	Regular
18	VIJAYA N KANNAKE	52	Assistant Professor	Female	Ph.D	156	Yes	22-07-2010	--	Regular
19	JAYPRAKASH L MATLAM	37	Assistant Professor	Male	MSc(Mathematics)	59	Yes	11-08-2018	--	Regular
20	JITENDRA R KIRSAN	34	Assistant Professor	Male	Ph.D	59	Yes	11-08-2018	--	Regular
21	SUNIL B ZANJE	36	Assistant Professor	Male	Ph.D		No	05-09-2018	08-12-2022	Regular
22	SUNILKUMAR K SHENDE	36	Assistant Professor	Male	MSc(Mathematics)	59	Yes	11-08-2018	--	Regular
23	AJAY S DEOKATE	30	Assistant Professor	Male	Ph.D	58	Yes	17-09-2018	--	Regular
24	BHOJRAJ P SHRIRAME	43	Assistant Professor	Male	M.A	58	Yes	18-09-2018	--	Regular
25	SAMINA K TADAVI	36	Assistant Professor	Female	Ph.D	58	Yes	11-09-2018	--	Regular
26	MONA S YEOLE	42	Other	Female	M. Phil	59	Yes	11-08-2018	--	Regular
27	PRASHANT A MANUSMARE	51	Assistant Professor	Male	Ph.D	148	Yes	15-03-2011	--	Regular
28	SUNNY S SATYAPAL	40	Assistant Professor	Male	MBA	57	Yes	01-11-2018	--	Regular

29	MANISH D SHENDE	49	Assistant Professor	Male	MBA	57	Yes	01-11-2018	--	Regular
30	PAYAL D PASHINE	37	Assistant Professor	Female	Ph.D		No	30-04-2018	30-09-2022	Regular
31	BHARTI M BARAPATRE	42	Assistant Professor	Female	Ph.D	54	Yes	01-02-2019	--	Regular
32	AJAY M GHATOLE	43	Assistant Professor	Male	Ph.D	30	Yes	09-01-2021	--	Regular
33	PALASH P FEDDEWAR	27	Assistant Professor	Male	M.Sc.	13	Yes	01-07-2022	--	Regular
34	PRAVIN H GHOSEKAR	46	Assistant Professor	Male	Ph.D	13	Yes	01-07-2022	--	Regular
35	SABAH NASEEM MUNAZZAL ZAFAR	35	Assistant Professor	Female	Ph.D	13	Yes	01-07-2022	--	Regular
36	PRIYANKA S SHARMA	31	Assistant Professor	Female	MSc(IT)	13	Yes	01-07-2022	--	Regular
37	BHAVANA M RAI	40	Assistant Professor	Female	Ph.D	4	Yes	04-03-2023	--	Regular
38	SHIRISH S NAKHATE	53	Associate Professor	Male	Ph.D	8	Yes	01-04-2023	--	Regular
39	SURAJ P NAKHATE	36	Assistant Professor	Male	M.Sc.	3	Yes	27-03-2023	--	Regular
40	PRATAP J PATLE	38	Assistant Professor	Male	Ph.D	5	Yes	03-02-2023	--	Regular
41	SANGITA D KATRE	43	Assistant Professor	Female	Ph.D	131	Yes	03-09-2012	--	Regular
42	NAYANA D SONWANE	33	Assistant Professor	Female	Ph.D	5	Yes	25-02-2023	--	Regular
43	PIYUSH A SANGATSAHEB	27	Assistant Professor	Male	M.Sc.	4	Yes	27-03-2023	--	Regular
44	PRATIBHA A PALIWAL	38	Assistant Professor	Female	Ph.D	4	Yes	23-03-2023	--	Regular
45	DEVIDAS B SONKUSARE	35	Assistant Professor	Male	Ph.D	4	Yes	28-03-2023	--	Regular
46	KAUSHIK T KATRE	30	Assistant Professor	Male	M.Sc.	4	Yes	31-03-2023	--	Regular
47	VAISHALI S LONKAR	36	Assistant Professor	Female	M.Sc.	4	Yes	01-04-2023	--	Regular
48	PANKAJ B GOUR	40	Assistant Professor	Male	Ph.D	3	Yes	13-04-2023	--	Regular
49	KHOMESH H LANJEWAR	27	Assistant Professor	Male	M.Sc.	5	Yes	20-02-2023	--	Regular
50	ASHISH K REWATKAR	42	Assistant Professor	Male	Ph.D	4	Yes	28-03-2023	--	Regular
51	AMAR K NANDANWAR	33	Assistant Professor	Male	Ph.D	5	Yes	25-02-2023	--	Regular
52	JAYALAXMI G PATIL	36	Assistant Professor	Female	Ph.D	3	Yes	15-04-2023	--	Regular
53	SANDIP S RAHUL	41	Assistant Professor	Male	M. Phil	10	No	10-09-2022	23-09-2023	Regular
54	VISHAKHA K WAGH	48	Assistant Professor	Female	M.COM	4	Yes	01-04-2023	--	Regular

55	VEENA M MAHAJAN	48	Assistant Professor	Female	Ph.D	130	Yes	15-09-2012	--	Regular
56	ROMI C BISHT	34	Other	Female	Ph.D	118	Yes	02-09-2013	--	Regular

View/Send Academic and Administrative Audit Proposal (2024-25)

Type of Proposal : **Academic and Administrative Audit 2024-25**

Reference Number : **REF/AUDIT/2425/BLAX4E**

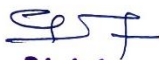
Send to University : **Proposal Sent on 29-01-2024**

View Proposal : [View Academic and Administrative Audit 2024-25 Proposal](#)
[View College Information for Academic and Administrative Audit](#)
[View Academic and Administrative Audit 2024-25 Uploaded Checklist](#)

Sr. No. [CLICK to view Uploaded Document](#)

- 1 Copy of the Receipt, fees paid for continuation of affiliation for the session applied for.
- 2 AICTE/NCTE/VBCI/COA/RCI permission letters for College/Courses/Additional Intake.
- 3 Permission letter of State Government for College/Courses/Subject/Additional Intake.
- 4 First time affiliation letter received from university for College/Courses/Subject/Additional Intake.
- 5 Appointment letter of previous Local Enquiry Committee.
- 6 A copy of Audited Statement of Income of Accounts of preceding year of the college.
- 7 List of members of College Development Committee mentioning tenure of the committee.
- 8 University affiliation letter up to which college is affiliated for courses in different faculties.
- 9 Consolidated list of courses run by the college affiliated by the university mentioning intake capacity for the course, No. of students admitted in that course, number of students appeared and number students successful at the examinations during past three years.
- 10 Permanent Affiliation letter
- 11 Principal Approval Letter
- 12 AAA Affidavit on Rs.100/- Stamp Paper.




Principal
J.M. Patel Arts, Commerce
& Science College, Bhandara



राष्ट्रसंत तुकडोजी महाराज नागपूर विद्यापीठ

(सेंट्रल प्रोव्हिसेंस शासन, शिक्षण विभागाची अधिसूचना क्रमांक ५१३ दिनांक १ ऑगस्ट, १९२३ द्वारा स्थापित, व महाराष्ट्र सार्वजनिक विद्यापीठ अधिनियम, २०१६ (सन २०१७ चा महाराष्ट्र अधिनियम क्रमांक ६) द्वारा संचालित राज्य विद्यापीठ)

महाविद्यालय विकास विभाग

जमनालाल बजाज प्रशासकीय भवन, महात्मा जोतिबा फुले शैक्षणिक परिसर, कॉम्पस चौक ते अंबाझरी टी-पॉईंट मार्ग, नागपूर - ४४००३३
दुरध्वनी क्रमांक: ०७१२-२५२९९३२ फॅक्स नं: ०७१२-२५५५७०१, E-mail ID: infoarcollege@ymail.com

क्र.म.वि./५६६

दिनांक : 05-06-2024

प्रती,

प्राचार्य,
जे. एम. पटेल कॉलेज ऑफ आर्ट्स, कॉमर्स अँड सायन्स
राजगोपालचार्ज वार्ड भंडारा ता.- भंडारा, जि.- भंडारा - 441904

विषय :- महाविद्यालयाचे शैक्षणिक व प्रशासकीय लेखापरीक्षणानुसार निरंतर संलग्निकरण प्रदान करणेबाबत.

महोदय/महोदया,

महाराष्ट्र सार्वजनिक विद्यापीठ अधिनियम, २०१६ च्या कलम ३७(j),(k) व ११४ नुसार आपल्या महाविद्यालयातील चालु अभ्यासक्रमांचे निरंतर संलग्निकरण काळ वाढविण्यासाठी आपण **दि.29-01-2024** रोजी शैक्षणिक व प्रशासकीय लेखापरीक्षण करण्याकरिता सादर केलेल्या अर्जाच्या संदर्भात आपणांस कळविण्यात येते की, शैक्षणिक व प्रशासकीय लेखापरीक्षण समितीने तसेच अधिष्ठाता मंडळाने केलेल्या शिफारशीनुसार आपल्या महाविद्यालयाचा खालील प्रमाणे नमूद अभ्यासक्रमांचा निरंतर संलग्निकरण काळ वाढविण्यास विद्यापीठाच्या विद्यापरिषदेच्या वतीने मा. कुलगुरुंनी महाराष्ट्र सार्वजनिक विद्यापीठ अधिनियम, २०१६ च्या कलम १२(७) अंतर्गत **दि.18-05-2024** ला मान्यता दिली आहे.

विद्यापरिषदेच्या वतीने मा. कुलगुरुंनी दिलेल्या मान्यतेनुसार खालील तक्त्यात नमुद केल्याप्रमाणे अभ्यासक्रमांना **सत्र २०२४-२५ करिता** निरंतर संलग्निकरण प्रदान करण्यात येत आहे.

अ.क्र.	विद्याशाखा	अभ्यासक्रम	विषय	माध्यम	प्रवेश क्षमता	शेरा
1	विज्ञान व तंत्रज्ञान	बॅचलर ऑफ सायंस - [प्रथम वर्ष]	[Computer Science]	इंग्रजी	-	
2	विज्ञान व तंत्रज्ञान	बॅचलर ऑफ सायंस - [प्रथम वर्ष] - [Add. Sec. 1]	[Chemistry] [Physics] [Microbiology] [Zoology] [Botany] [Maths] [Computer Science] [Electronics] [English] [Marathi] [Hindi]	इंग्रजी	100	
3	विज्ञान व तंत्रज्ञान	बॅचलर ऑफ सायंस - [द्वितीय वर्ष]	[Computer Science]	इंग्रजी	-	
4	विज्ञान व तंत्रज्ञान	बॅचलर ऑफ सायंस - [द्वितीय वर्ष] - [Add. Sec. 1]	[Chemistry] [Physics] [Microbiology] [Zoology] [Botany] [Maths] [Computer Science] [Electronics]	इंग्रजी	100	
5	विज्ञान व तंत्रज्ञान	बॅचलर ऑफ सायंस - [तृतीय वर्ष]	[Computer Science]	इंग्रजी	-	

6	विज्ञान व तंत्रज्ञान	बॅचलर ऑफ सायंस - [तृतीय वर्ष] - [Add. Sec. 1]	[Chemistry] [Physics] [Microbiology] [Zoology] [Botany] [Maths] [Computer Science] [Electronics]	इंग्रजी	100	
7	विज्ञान व तंत्रज्ञान	मास्टर ऑफ सायंस (झुलॉजी) - [प्रथम वर्ष]	As Per Syllabus	इंग्रजी	22	
8	विज्ञान व तंत्रज्ञान	मास्टर ऑफ सायंस (झुलॉजी) - [द्वितीय वर्ष]	As Per Syllabus	इंग्रजी	22	
9	विज्ञान व तंत्रज्ञान	मास्टर ऑफ सायंस (बॉटनी) - [प्रथम वर्ष]	As Per Syllabus	इंग्रजी	22	
10	विज्ञान व तंत्रज्ञान	मास्टर ऑफ सायंस (बॉटनी) - [द्वितीय वर्ष]	As Per Syllabus	इंग्रजी	22	
11	विज्ञान व तंत्रज्ञान	बी.व्होक. - सॉफ्टवेअर डेव्हलपमेंट - [प्रथम वर्ष]	As Per Syllabus	इंग्रजी	50	
12	विज्ञान व तंत्रज्ञान	बी.व्होक. - सॉफ्टवेअर डेव्हलपमेंट - [द्वितीय वर्ष]	As Per Syllabus	इंग्रजी	50	
13	विज्ञान व तंत्रज्ञान	बी.व्होक. - सॉफ्टवेअर डेव्हलपमेंट - [तृतीय वर्ष]	As Per Syllabus	इंग्रजी	50	
14	वाणिज्य व व्यवस्थापन	बॅचलर ऑफ कॉमर्स - [प्रथम वर्ष]	[Computer Application] [Accounting and Taxation] [Finance and Banking] [Business Administration]	इंग्रजी	340	बी.कॉम. विद्यार्थी प्रवेश क्षमता १२० व बी.सी.सी.ए विद्यार्थी प्रवेश क्षमता २२० अशी एकूण ३४० विद्यार्थी प्रवेश क्षमता आहे.
15	वाणिज्य व व्यवस्थापन	बॅचलर ऑफ कॉमर्स - [द्वितीय वर्ष]	As Per Syllabus	इंग्रजी	120	
16	वाणिज्य व व्यवस्थापन	बॅचलर ऑफ कॉमर्स - [तृतीय वर्ष]	As Per Syllabus	इंग्रजी	120	
17	वाणिज्य व व्यवस्थापन	बॅचलर ऑफ कॉमर्स (कंप्युटर अप्लीकेशन) - [द्वितीय वर्ष]	As Per Syllabus	इंग्रजी	220	
18	वाणिज्य व व्यवस्थापन	बॅचलर ऑफ कॉमर्स (कंप्युटर अप्लीकेशन) - [तृतीय वर्ष]	As Per Syllabus	इंग्रजी	220	
19	वाणिज्य व व्यवस्थापन	बॅचलर ऑफ बिजनेस अँडमिनीस्ट्रेशन - [प्रथम वर्ष]	As Per Syllabus	इंग्रजी	120	AICTE च्या मान्यतेप्रमाणे
20	वाणिज्य व व्यवस्थापन	बॅचलर ऑफ बिजनेस अँडमिनीस्ट्रेशन - [द्वितीय वर्ष]	As Per Syllabus	इंग्रजी	220	
21	वाणिज्य व व्यवस्थापन	बॅचलर ऑफ बिजनेस अँडमिनीस्ट्रेशन - [तृतीय वर्ष]	As Per Syllabus	इंग्रजी	220	
22	वाणिज्य व व्यवस्थापन	मास्टर ऑफ बिजनेस अँडमिनीस्ट्रेशन - [प्रथम वर्ष]	As Per Syllabus	इंग्रजी	60	
23	वाणिज्य व व्यवस्थापन	मास्टर ऑफ बिजनेस अँडमिनीस्ट्रेशन - [द्वितीय वर्ष]	As Per Syllabus	इंग्रजी	60	
24	वाणिज्य व व्यवस्थापन	बी.व्होक. - रिटेल मॅनेजमेंट - [प्रथम वर्ष]	As Per Syllabus	इंग्रजी	50	
25	वाणिज्य व व्यवस्थापन	बी.व्होक. - रिटेल मॅनेजमेंट - [द्वितीय वर्ष]	As Per Syllabus	इंग्रजी	50	
26	वाणिज्य व व्यवस्थापन	बी.व्होक. - रिटेल मॅनेजमेंट - [तृतीय वर्ष]	As Per Syllabus	इंग्रजी	50	
27	वाणिज्य व व्यवस्थापन	मास्टर ऑफ कॉमर्स (अकॉउंटिंग टॅक्सेशन) - [प्रथम वर्ष]	As Per Syllabus	मराठी	80	
28	वाणिज्य व व्यवस्थापन	मास्टर ऑफ कॉमर्स (अकॉउंटिंग टॅक्सेशन) - [द्वितीय वर्ष]	As Per Syllabus	मराठी	80	
29	मानवीय शास्त्र	बी.ए. - [प्रथम वर्ष]	[Urdu] [Urdu Literature]	मराठी	-	
30	मानवीय शास्त्र	बी.ए. - [प्रथम वर्ष] - [Add. Sec. 1]	[Marathi] [Hindi] [English] [Urdu] [Sociology]	मराठी	100	

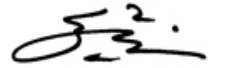
			[Political Science] [Economics] [Home Economics] [English Literature] [Marathi Literature] [History] [Geography] [Urdu Literature]			
31	मानवीय शास्त्र	बी.ए. - [प्रथम वर्ष] - [Add. Sec. 2]	[Marathi] [Hindi] [English] [Urdu] [Sociology] [Political Science] [Economics] [Home Economics] [English Literature] [Marathi Literature] [History] [Geography] [Urdu Literature] [English Literature]	मराठी	100	
32	मानवीय शास्त्र	बी.ए. - [द्वितीय वर्ष]	[Urdu] [Urdu Literature]	मराठी	-	
33	मानवीय शास्त्र	बी.ए. - [द्वितीय वर्ष] - [Add. Sec. 1]	[Marathi] [Hindi] [English] [Urdu] [Sociology] [Political Science] [Economics] [Home Economics] [English Literature] [Marathi Literature] [History] [Geography] [Urdu Literature] [English Literature]	मराठी	100	
34	मानवीय शास्त्र	बी.ए. - [द्वितीय वर्ष] - [Add. Sec. 2]	[Marathi] [Hindi] [English] [Urdu] [Sociology] [Political Science] [Economics] [Home Economics] [English Literature] [Marathi Literature] [History] [Geography] [Urdu Literature]	मराठी	100	
35	मानवीय शास्त्र	बी.ए. - [तृतीय वर्ष]	[Urdu] [Urdu Literature]	मराठी	-	
36	मानवीय शास्त्र	बी.ए. - [तृतीय वर्ष] - [Add. Sec. 1]	[Marathi] [Hindi] [English] [Urdu] [Political Science] [Economics] [Home Economics] [English Literature] [Marathi Literature] [History] [Geography] [Sociology] [Urdu Literature]	मराठी	100	
37	मानवीय शास्त्र	बी.ए. - [तृतीय वर्ष] - [Add. Sec. 2]	[Marathi] [Hindi] [English] [Urdu] [Sociology] [Political Science] [Economics] [Home Economics] [English Literature] [Marathi Literature] [History] [Geography] [Urdu Literature]	मराठी	100	
38	मानवीय शास्त्र	मास्टर ऑफ आर्ट्स (इंग्लीश) - [प्रथम वर्ष]	As Per Syllabus	इंग्रजी	80	
39	मानवीय शास्त्र	मास्टर ऑफ आर्ट्स (इंग्लीश) - [द्वितीय वर्ष]	As Per Syllabus	इंग्रजी	80	
40	मानवीय शास्त्र	मास्टर ऑफ आर्ट्स (इतिहास) - [प्रथम वर्ष]	As Per Syllabus	मराठी	80	
41	मानवीय शास्त्र	मास्टर ऑफ आर्ट्स (इतिहास) - [द्वितीय वर्ष]	As Per Syllabus	मराठी	80	

42	मानवीय शास्त्र	मास्टर ऑफ आर्ट्स (समाजशास्त्र) - [प्रथम वर्ष]	As Per Syllabus	मराठी	80	
43	मानवीय शास्त्र	मास्टर ऑफ आर्ट्स (समाजशास्त्र) - [द्वितीय वर्ष]	As Per Syllabus	मराठी	80	

कायम संलग्नित असलेल्या अभ्यासक्रमांचा तक्ता पुढीलप्रमाणे आहे.

अ.क्र.	विद्याशाखा	अभ्यासक्रम	विषय	माध्यम	प्रवेश क्षमता	कयम संलग्निकरण वर्ष
1	विज्ञान व तंत्रज्ञान	बॅचलर ऑफ सायंस - [प्रथम वर्ष]	[रसायन शास्त्र] [भौतिक शास्त्र] [सूक्ष्मजिव शास्त्र] [प्राणीशास्त्र] [वनस्पती शास्त्र] [गणित] [इलेक्ट्रॉनिक्स] [इंग्रजी] [मराठी] [हिन्दी]	इंग्रजी	320	2000-01
2	विज्ञान व तंत्रज्ञान	बॅचलर ऑफ सायंस - [द्वितीय वर्ष]	[रसायन शास्त्र] [भौतिक शास्त्र] [सूक्ष्मजिव शास्त्र] [प्राणीशास्त्र] [वनस्पती शास्त्र] [गणित] [इलेक्ट्रॉनिक्स] [इंग्रजी] [मराठी] [हिन्दी]	इंग्रजी	320	2000-01
3	विज्ञान व तंत्रज्ञान	बॅचलर ऑफ सायंस - [तृतीय वर्ष]	[रसायन शास्त्र] [भौतिक शास्त्र] [सूक्ष्मजिव शास्त्र] [प्राणीशास्त्र] [वनस्पती शास्त्र] [गणित] [इलेक्ट्रॉनिक्स] [इंग्रजी] [मराठी] [हिन्दी]	इंग्रजी	320	2000-01
4	वाणिज्य व व्यवस्थापन	बॅचलर ऑफ कॉमर्स - [प्रथम वर्ष]	As Per Syllabus	मराठी	220	1964-65
5	वाणिज्य व व्यवस्थापन	बॅचलर ऑफ कॉमर्स - [द्वितीय वर्ष]	As Per Syllabus	मराठी	220	1964-65
6	वाणिज्य व व्यवस्थापन	बॅचलर ऑफ कॉमर्स - [तृतीय वर्ष]	As Per Syllabus	मराठी	220	2023-24
7	मानवीय शास्त्र	बी.ए. - [प्रथम वर्ष]	[मराठी] [हिन्दी] [इंग्रजी] [समाजशास्त्र] [राज्यशास्त्र] [अर्थशास्त्र] [गृहअर्थशास्त्र] [मराठी वाङ्मय] [इतिहास] [भूगोल] [इंग्रजी वाङ्मय]	मराठी	320	1964-65
8	मानवीय शास्त्र	बी.ए. - [द्वितीय वर्ष]	[मराठी] [हिन्दी] [इंग्रजी] [समाजशास्त्र] [राज्यशास्त्र] [अर्थशास्त्र] [गृहअर्थशास्त्र] [इंग्रजी वाङ्मय] [मराठी वाङ्मय] [इतिहास] [भूगोल]	मराठी	320	1964-65
9	मानवीय शास्त्र	बी.ए. - [तृतीय वर्ष]	[मराठी] [हिन्दी] [इंग्रजी] [समाजशास्त्र] [राज्यशास्त्र] [अर्थशास्त्र] [गृहअर्थशास्त्र] [मराठी वाङ्मय] [इतिहास] [भूगोल] [इंग्रजी वाङ्मय]	मराठी	320	1964-65

आपला विश्वासू,



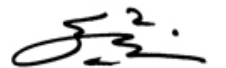
(डॉ.रमण मदने)

उपकुलसचिव

रा.तु.म. नागपूर विद्यापीठ, नागपूर

प्रत माहितीकरिता अग्रेषित :-

१. मा. संचालक(परीक्षा व मुल्यमापन मंडळ), रा.तु.म. नागपूर विद्यापीठ, नागपूर



(डॉ.रमण मदने)

उपकुलसचिव



राष्ट्रसंत तुकडोजी महाराज नागपूर विद्यापीठ

(सेंट्रल प्रोव्हिसेस शासन, शिक्षण विभागाची अधिसूचना क्रमांक ५१३ दिनांक १ ऑगस्ट, १९२३ द्वारा स्थापित, व महाराष्ट्र सार्वजनिक विद्यापीठ अधिनियम, २०१६ (सन २०१७ चा महाराष्ट्र अधिनियम क्रमांक ६) द्वारा संचालित राज्य विद्यापीठ)

महाविद्यालय विकास विभाग

जमनालाल बजाज प्रशासकीय भवन, महात्मा जोतिबा फुले शैक्षणिक परिसर, कॉम्पस चौक ते अंबाझरी टी-पॉईंट मार्ग, नागपूर - ४४००३३
दुरध्वनी क्रमांक ०७१२-२५२९९३२ फॅक्स नं ०७१२-२५५५७०१, E-mail ID: infoarcollege@ymail.com

क्र.म.वि./५६६

दिनांक : 05-06-2024

To,
The Principal
J. M. Patel Arts, Commerce & Science College
Rajgopalachari Ward, Bhandara - 441904

Subject: Grant of continuous affiliation as per Academic Audit.

Sir/Madam,

With reference to the application submitted by you for academic audit on 26-09-2020 for continuation of affiliation of the programmes/courses in your college from the session 2021-22 and onwards as per Section 37(j), (k) and 114 of the Maharashtra Public Universities Act, 2016. I am to inform you that on the basis of report submitted by the visiting committee for verification of the Report, the recommendation of the Academic Audit Committee, the Board of Deans, the Hon'ble Vice-Chancellor on behalf of the Academic Council as per Section 12(7) of the Maharashtra Public Universities Act 2016, is pleased to grant continuation of affiliation on 05.08.2021 to the following programmes/courses.

On behalf of the Board of Deans as well as the Academic Council, the Hon'ble Vice-Chancellor is granting continuous affiliation to the following programmes/courses from the session 2021-22 till 2023-24.

Sr. No.	Faculty	Course	Subject	Medium	Intake Capacity	Remark
1	Science and Technology	Bachelor of Science- [First Year]	[Computer Science]	English	-	
2	Science and Technology	Bachelor of Science- [First Year]- [Add. Sec. 1]	[Chemistry] [Physics] [Microbiology] [Zoology] [Botany] [Maths] [Computer Science] [Electronics] [English]	English	100	

			[Marathi] [Hindi]			
3	Science and Technology	Bachelor of Science- [Second Year]	[Computer Science]	English	-	
4	Science and Technology	Bachelor of Science- [Second Year]-[Add. Sec. 1]	[Chemistry] [Physics] [Microbiology] [Zoology] [Botany] [Maths] [Computer Science] [Electronics]	English	100	
5	Science and Technology	Bachelor of Science- [Third Year]	[Computer Science]	English	-	
6	Science and Technology	Bachelor of Science- [Third Year]-[Add. Sec. 1]	[Chemistry] [Physics] [Microbiology] [Zoology] [Botany] [Maths] [Computer Science] [Electronics]	English	100	
7	Science and Technology	Master of Science (Zoology)-[First Year]	As Per Syllabus	English	22	
8	Science and Technology	Master of Science (Zoology)- [Second Year]	As Per Syllabus	English	22	
9	Science and Technology	Master of Science (Botany)-[First Year]	As Per Syllabus	English	22	
10	Science and Technology	Master of Science (Botany)- [Second Year]	As Per Syllabus	English	22	
11	Science and Technology	B. Voc. Software Development - [First Year]	As Per Syllabus	English	50	
12	Science and Technology	B. Voc. Software Development - [Second Year]	As Per Syllabus	English	50	
13	Science and Technology	B. Voc. Software Development - [Third Year]	As Per Syllabus	English	50	
14	Commerce and	Bachelor of Commerce-	[Computer Application]	English	340	B.Com. Student

	Management	[First Year]	[Accounting and Taxation] [Finance and Banking] [Business Administration]			intake Capacity- 120 and BCCA Student Intake Capacity- 220, Total Students intake capacity is 340.
15	Commerce and Management	Bachelor of Commerce- [Second Year]	As Per Syllabus	English	120	
16	Commerce and Management	Bachelor of Commerce- [Third Year]	As Per Syllabus	English	120	
17	Commerce and Management	Bachelor of Commerce (Computer Application) - [Second Year]	As Per Syllabus	English	220	
18	Commerce and Management	Bachelor of Commerce (Computer Application) - [Third Year]	As Per Syllabus	English	220	
19	Commerce and Management	Bachelor of Business Administration - [First Year]	As Per Syllabus	English	220	As per Approval of AICTE
20	Commerce and Management	Bachelor of Business Administration - [Second Year]	As Per Syllabus	English	220	
21	Commerce and Management	Bachelor of Business Administration - [Third Year]	As Per Syllabus	English	220	
22	Commerce and Management	Master of Business Administration - [First Year]	As Per Syllabus	English	60	
23	Commerce and Management	Master of Business Administration - [Second Year]	As Per Syllabus	English	60	
24	Commerce and Management	B. Voc.- Retail Management- [First Year]	As Per Syllabus	English	50	
25	Commerce and	B. Voc.- Retail Management-	As Per Syllabus	English	50	

	Management	[Second Year]				
26	Commerce and Management	B. Voc.- Retail Management-[Third Year]	As Per Syllabus	English	50	
27	Commerce and Management	Master of Commerce (Accounting Taxation)-[First Year]	As Per Syllabus	Marathi	80	
28	Commerce and Management	Master of Commerce (Accounting Taxation)-[Second Year]	As Per Syllabus	Marathi	80	
29	Humanities	B.A.-[First Year]	[Urdu] [Urdu Literature]	Marathi	-	
30	Humanities	B.A.-[First Year]-[Addl. Sec. 1]	[Marathi] [Hindi] [English] [Urdu] [Sociology] [Political Science] [Economics] [Home Economics] [English Literature] [Marathi Literature] [History] [Geography] [Urdu Literature]	Marathi	100	
31	Humanities	B.A.-[First Year]-[Addl. Sec. 2]	[Marathi] [Hindi] [English] [Urdu] [Sociology] [Political Science] [Economics] [Home Economics] [English Literature] [Marathi Literature] [History] [Geography] [Urdu Literature]	Marathi	100	
32	Humanities	B.A.-[Second	[Urdu] [Urdu	Marathi	-	

		Year]	Literature]			
33	Humanities	B.A.-[Second Year]-[Addl. Sec. 1]	[Marathi] [Hindi] [English] [Urdu] [Sociology] [Political Science] [Economics] [Home Economics] [English Literature] [Marathi Literature] [History] [Geography] [Urdu Literature]	Marathi	100	
34	Humanities	B.A.-[Second Year]-[Addl. Sec. 2]	[Marathi] [Hindi] [English] [Urdu] [Sociology] [Political Science] [Economics] [Home Economics] [English Literature] [Marathi Literature] [History] [Geography] [Urdu Literature]	Marathi	100	
35	Humanities	B.A.-[Third Year]	[Urdu] [Urdu Literature]	Marathi	-	
36	Humanities	B.A.-[Third Year]-[Addl. Sec. 1]	[Marathi] [Hindi] [English] [Urdu] [Political Science] [Economics] [Home Economics] [English Literature] [Marathi Literature] [History]	Marathi	100	

			[Geography] [Sociology] [Urdu Literature]			
37	Humanities	B.A.-[Third Year]-[Addl. Sec. 2]	[Marathi] [Hindi] [English] [Urdu] [Sociology] [Political Science] [Economics] [Home Economics] [English Literature] [Marathi Literature] [History] [Geography] [Urdu Literature]	Marathi	100	
38	Humanities	Master of Arts- (English)-[First Year]	As Per Syllabus	English	80	
39	Humanities	Master of Arts- (English)- [Second Year]	As Per Syllabus	English	80	
40	Humanities	Master of Arts- (History)-[First Year]	As Per Syllabus	Marathi	80	
41	Humanities	Master of Arts- (History)- [Second Year]	As Per Syllabus	Marathi	80	
42	Humanities	Master of Arts- (Sociology)- [First Year]	As Per Syllabus	Marathi	80	
43	Humanities	Master of Arts- (Sociology)- [Second Year]	As Per Syllabus	Marathi	80	

Table of Permanent Affiliated Courses:

Sr. No.	Faculty	Course	Subject	Medium	Intake Capacity	Permanent Affiliation Year
1	Science and Technology	Bachelor of Science- [First Year]	[Chemistry] [Physics] [Microbiology] [Zoology] [Botany] [Mathematics]	English	320	2000-01

			[Geography] [Sociology] [Urdu Literature]			
37	Humanities	B.A.-[Third Year]-[Addl. Sec. 2]	[Marathi] [Hindi] [English] [Urdu] [Sociology] [Political Science] [Economics] [Home Economics] [English Literature] [Marathi Literature] [History] [Geography] [Urdu Literature]	Marathi	100	
38	Humanities	Master of Arts- (English)-[First Year]	As Per Syllabus	English	80	
39	Humanities	Master of Arts- (English)- [Second Year]	As Per Syllabus	English	80	
40	Humanities	Master of Arts- (History)-[First Year]	As Per Syllabus	Marathi	80	
41	Humanities	Master of Arts- (History)- [Second Year]	As Per Syllabus	Marathi	80	
42	Humanities	Master of Arts- (Sociology)- [First Year]	As Per Syllabus	Marathi	80	
43	Humanities	Master of Arts- (Sociology)- [Second Year]	As Per Syllabus	Marathi	80	

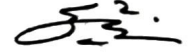
Table of Permanent Affiliated Courses:

Sr. No.	Faculty	Course	Subject	Medium	Intake Capacity	Permanent Affiliation Year
1	Science and Technology	Bachelor of Science- [First Year]	[Chemistry] [Physics] [Microbiology] [Zoology] [Botany] [Mathematics]	English	320	2000-01

			[Electronics] [English] [Marathi] [Hindi]			
2	Science and Technology	Bachelor of Science- [Second Year]	[Chemistry] [Physics] [Microbiology] [Zoology] [Botany] [Mathematics] [Electronics] [English] [Marathi] [Hindi]	English	320	2000-01
3	Science and Technology	Bachelor of Science- [Third Year]	[Chemistry] [Physics] [Microbiology] [Zoology] [Botany] [Mathematics] [Electronics] [English] [Marathi] [Hindi]	English	320	2000-01
4	Commerce and Management	Bachelor of Commerce- [First Year]	As Per Syllabus	Marathi	220	1964-65
5	Commerce and Management	Bachelor of Commerce- [Second Year]	As Per Syllabus	Marathi	220	1964-65
6	Commerce and Management	Bachelor of Commerce- [Third Year]	As Per Syllabus	Marathi	220	2023-24
7	Humanities	B. A. - [First Year]	[Marathi] [Hindi] [English] [Sociology] [Political Science] [Economics] [Home Economics] [Marathi Literature] [History] [Geography] [English Literature]	Marathi	320	1964-65
8	Humanities	B. A. - [Second Year]	[Marathi] [Hindi] [English] [Sociology] [Political	Marathi	320	1964-65

			Science] [Economics] [Home Economics] [Marathi Literature] [History] [Geography] [English Literature]			
9	Humanities	B. A. - [Third Year]	[Marathi] [Hindi] [English] [Sociology] [Political Science] [Economics] [Home Economics] [Marathi Literature] [History] [Geography] [English Literature]	Marathi	320	1964-65

आपला विश्वासू,



(डॉ.रमण मदन)

उपकुलसचिव

रा.तु.म. नागपूर विद्यापीठ, नागपूर

प्रत माहितीकरिता अग्रेषित :-

१. मा. संचालक(परीक्षा व मुल्यमापन मंडळ). रा.तु.म. नागपूर विद्यापीठ, नागपूर




Principal

**J.M. Patel Arts, Commerce
& Science College, Bhandara**

DETAILED ENERGY AUDIT REPORT



Gondia Education Society's

J. M. PATEL ARTS, COMMERCE & SCIENCE COLLEGE
BHANDARA - 441 904 (MAHARASHTRA)

2023-2024



Conducted By

PPS Energy Solutions Pvt. Ltd.

Plot No-18, Girish Housing Society
Warje, Pune – 411058, Maharashtra, India.

For PPS Energy Solutions Pvt. Ltd.

Ravi

Dr. Ravi G. Deshmukh Energy
Auditor Class - A
MEDA/ECN/2021-23/EA-11


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: eee@mahaurja.com, Web: www.mahaurja.com

ECN/2023-24/CR-19/228

 23rd February, 2024

**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 PPS Energy Solutions Pvt. Ltd.
B-403, Bharat Vihar, S.No-78,
Bharti Vidyapith, Campus,
Katraj, Pune-411046.

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

Registration Number : *MEDA/ECN/2023-24/Class A/EA-14*

- 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 **22nd February, 2026** 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)



PREFACE

Energy Audit is a key parameter of systematic approach for decision-making in the area of energy management. It attempts to determine how and where energy is used and to identify methods for energy savings. There is now a universal recognition of the fact that new technologies and much greater use of some that already exists provide the most hopeful prospects for the future. The opportunities lie in the use of existing renewable energy technologies, greater efforts at energy efficiency and the dissemination of these technologies and options.

As per the Energy Conservation Act, 2001, Energy Audit is defined as "the verification, monitoring and analysis of use of energy including submission of technical report containing recommendations for improving energy efficiency with cost benefit analysis and an action plan to reduce energy consumption".

Present energy audit is a mare mile marker towards destination of achieving safe, healthy and energy efficient unit. We would like to emphasize that an energy audit is a continuous process. We have compiled a list of possible actions to conserve and efficiently utilize our scarce resources and identified their savings potential. The next step would be to prioritize their implementation. Implementation of recommended measures can help consumes to achieve significant reduction in their energy consumption levels.



WHY ENERGY AUDIT?

An energy audit determines the amount of energy consumption affiliated with a facility and the potential savings associated with that energy consumption. Additionally, an energy audit is designed to understand the specific conditions that are impacting the performance and comfort in your facility to maximize the overall impact of energy-focused building improvements.

An energy audit is a systematic review of the energy consuming installations in a facility to ensure that energy is being used sensibly and efficiently. An energy audit usually commences with the collection and analysis of all information that may affect the energy consumption of the facility, then follows with reviewing and analyzing the condition and performance of various installations and facility management, with an aim at identifying areas of inefficiency and suggesting means for improvement.

Through implementation of the suggested improvement measures, facility owners can get the immediate benefit for paying less energy bills. On the other hand, lowering of energy consumption in facility will lead to the chain effect that the power supply companies will burn less fossil fuel for electricity generation and relatively less pollutants and greenhouse gases will be introduced into the atmosphere, thus contributing to conserve the environment and to enhance sustainable development.



ACKNOWLEDGEMENT

We express our sincere gratitude to the authorities of J. M. Patel College for entrusting and offering the opportunity. It is our immense pleasure to present the detailed energy audit report.

We acknowledge the positive support extended by the management of the College in undertaking the task of Detailed Energy Audit of all electrical systems, thermal systems, utilities and other area and for continuous help and support before and during the Detailed Energy Audit.

We are also thankful to all the Teaching and Non-teaching Staff Members of the College with whom we interacted during the field studies for their wholehearted support in undertaking measurements and eagerness to assess the system / equipment performance and saving potential. We admire the help of all concerned staff for their active participation in completing official documentations.

We express our sincere gratitude to the authorities of J. M. Patel College for entrusting PPS Energy Solutions Pvt. Ltd.

We appreciate the co-operation and support extended to our team members during the entire tenure of field study.

We express our thanks to

M/s. J. M. Patel College, Bhandara.

1. Dr. Vikas Prabakarrao Dhomne, Principal.
2. Dr. Aparna Yadav, Assistant Proffessor- Botany.

For PPS Energy Solutions Pvt. Ltd.



Dr. Ravi G. Deshmukh
Energy Auditor Class - A
MEDA/ECN/2021-22/EA-11



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About PPSES

M/s. PPS Energy Solutions Pvt. Ltd (PPSES) is an ambitious company, established by enterprising engineering professionals in the year 2009. The company offers services pertaining to Energy and Engineering to clients across the globe. Our team is based in Pune, a city known for its Software and Engineering talent in India. We are a rapidly growing company with a team of about 100 people which includes highly trained and experienced Techno-Managers, Analysts, and Engineers & Detailers.

We are presently working in India (Maharashtra, Assam, Madhya Pradesh, Gujarat, Andhra Pradesh, Delhi, Orissa, Chhattisgarh, Bihar, Andhra Pradesh, Telangana and Jharkhand) and Abroad (Bahrain, Stanford)

➤ We serve in majorly four areas,

- Energy Audit, Management and System Evaluations
- Power Distribution System Design, Evaluations and Monitoring
- MEP Design and Project management
- Research and Training

PPSES Team Members

Name	Role	Academics and Expertise
Dr. Ravi Deshmukh	ECM verification, Report verification and presentation	Accredited Energy Auditor, PhD, M tech, MBA (Power), Graduate E&TC Engineer with over 18 years of experience in Energy Management, Management of Power System, street light projects, Power Exchange Operations, Power Trading and Analysis, Electrical Automation. Has worked as Expert in Iron & Steel sector and Energy
Mr. Vinayak Apte	Energy Audit Expert	Graduate Electrical Engineer with more than 10 years of experience in various sectors. He handled Energy Audits, Energy Conservation and Energy Efficiency projects in Industries, Commercial and Residential Buildings, Pump House
Mr. Ritesh Pali	Field study, data tabulation and analysis, report preparation	Graduate Electrical Engineer with 2 years of experience in energy efficiency assessment



Summary of Recommended Energy Conservation Measures:

Sr.No.	Equipment Name	ECM Details	Investment (Rs. In Lacs)	Savings (kWh/year)	Carbon credit (Tons of Co2)	Saving (Rs.In Lacs /Year)	Payback (Years)
1	Tube Lights	Replacement of conventional lights with suitable LEDs	2.23	4800.00	4.08	0.29	6.98
2	Fan	Replacement of existing fans with energy efficient Super fans	3.34	2940.00	2.50	0.17	19.11
3	AC	Optimize the temperature setting to 23-25 degree Celsius	0.00	289.58	0.25	0.03	0.00
Total			5.57	8029.58	6.83	0.49	11.42

Note: Estimated savings may base on operating conditions

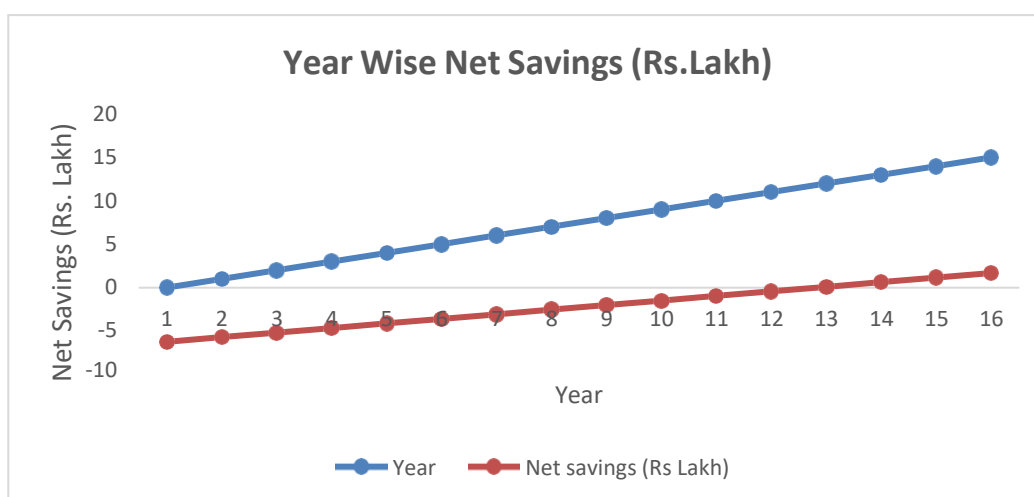
During the Energy Audit, Total Estimated Investment of Rs. 5,57,900/- yields Total Estimated Savings of Rs. 49,000/- which 10 % of the Total Energy Cost of Rs. 5,60,973/- with an overall payback period of 11.4 Years.

Other Recommendations:

- A. Regular cleaning and maintenance of equipment's is important to reduce energy losses.
- B. Use of star rated equipment's is also strongly recommended specially in case of Fans and Air conditioning.
- C. Cleaning of ceiling fan and exhaust fan blades will reduce the drag on the fan and intern will reduce energy loss.
- D. Awareness amongst energy users is very essential step to reduce wastage of electricity
- E. Energy conservation awareness programs can be conducted once a year. Increasing energy awareness of energy users motivates them to work as a team can lead to reductions in energy consumption and save the money.



Year	Investment (Rs. In Lacs)	Saving (Rs.In Lacs /Year)	Cum Savings(Rs Lakh)	Net savings (Rs Lakh)
0	-6.260	0.000	0.000	-6.260
1	0.000	0.529	0.529	-5.731
2	0.000	0.529	1.058	-5.202
3	0.000	0.529	1.587	-4.673
4	0.000	0.529	2.116	-4.144
5	0.000	0.529	2.645	-3.615
6	0.000	0.529	3.174	-3.086
7	0.000	0.529	3.703	-2.557
8	0.000	0.529	4.232	-2.028
9	0.000	0.529	4.761	-1.499
10	0.000	0.529	5.290	-0.970
11	0.000	0.529	5.819	-0.441
12	0.000	0.529	6.348	0.088
13	0.000	0.529	6.877	0.617
14	0.000	0.529	7.406	1.146
15	0.000	0.529	7.935	1.675



Net Savings (Rs. Lakh Vs Year)

For PPS Energy Solutions Pvt. Ltd.

Dr. Ravi G. Deshmukh
Energy Auditor Class - A
MEDA/ECN/2021-22/EA-11



2. GENERAL AUDIT REVIEW

Facility can implement faster payback energy conservation measures (ECMs) which have already been considered and for which the ECMs are fully developed.

Other General Points:

1. Energy conservation awareness programs can be conducted once a year. Increasing energy awareness of staff, students and motivating them to work as a team can lead to reductions in energy consumption and save the money. Savings estimates range in the order of 5 to 10%. When implemented effectively these savings can be realized quickly and cost effectively.
2. Most of the fans are of older design and not energy inefficient.
3. Most of the places the tube light installed are not energy efficient and fittings are in healthy condition.
4. Natural day light is efficiently used in corridor and few classrooms and labs areas.

It is believed that with the current approach and organization of energy management, energy can be reduced in a systematic, cost effective manner. We hope that this report will help facility to implement these changes and provide direction to the Energy Management Team.



3. ABOUT ENERGY AUDIT

Objective

The overall objective of the assignment is to quantify energy saving in existing system and achieve reduction in energy consumption pattern.

Hence, the detail objectives are as under,

1. To calculate the energy consumption
2. To evaluate the performance of the equipment
3. To find out the energy saving opportunities
4. To quantify the total energy savings
5. To find out the ways to achieve energy efficiency

Scope of Work

Following is the scope of work envisaged for this assignment,

Data Collection

To collect the details of various electrical and mechanical system and their ratings, the available drawings and details shall be studied. Detail load list shall be prepared and checked.

A, B, C Analysis

With the details available from load list, analysis shall be carried out depending on the present usage trends. All the power consuming equipment's shall be classified in three categories depending on their ratings, condition and operating time. The area for larger potentials for savings shall be identified.

Field Study

The detail field study on site shall include the following as well as all other measures required for energy audit study,

- a. Lay out the system and study of Electrical distribution
- b. Study of area wise power distribution and Measurement of power consumption
- c. Study of instrumentation provided
- d. Measurement of motor currents, voltages, power etc. parameters by energy analyzer and measurement of water flow, pressures etc. parameters of pumps simultaneously and other measurements as needed to characterize the system and required for calculating efficiency at various combinations



- e. Study of air conditioner operations and system requirements
- f. Analysis of readings obtained from field with the standard consumption.

Approach and Methodology

1. Understanding the Scope of Work and Resource Planning
2. Identification of Key Personnel for the assignment/ project
3. Structured Organization Matrix
4. Steps in preparing and implementing energy audit assignment
 - a) Discussions with key facility personnel
 - b) Site visits and conducting “walk-through audit”.
 - c) Preliminary Data Collection through questionnaire before audit team’s site visit
 - d) Steps for conducting the detailed audit
 - Plan the activities of site data collection in coordination with the facility in-charge.
 - Study the existing operations involving energy consumption
 - Collect and collate the energy consumption data with respect to electricity consumption
 - Conduct performance tests to assess the efficiency of the system equipment/ electricity distribution, lighting, and identify energy losses.
 - Discuss with facility personnel about identified energy losses.
5. List proposed efficiency measures
 - Develop a set of potential efficiency improvement proposals
 - Baseline parameters
 - Data presentation
 - System mapping
 - List of potential Energy Savings proposals with cost benefit analysis.
 - Review of current operation & maintenance practices
6. Preparation of the Draft Energy Audit Report
7. Preparation and submission of final Energy Audit Report after discussion with concerned persons



4. ENERGY DETAILS

Maharashtra State Electricity Distribution Company Limited (MSEDCL) provides the electricity supply for facility. Billing is carried out with the help of Single meter according to 146 HT-VIII B Tariff.

Detailed Energy Audit was conducted for the load connected to the mains supply used.

Mainly energy is used on this facility for the following purposes:

- 1) Lighting Load
- 2) Ceiling Fans
- 3) Computer
- 4) Printer
- 5) Exhaust Fans
- 6) Other lab equipment's

Based on above it is clear that followings equipment's have highest potential for energy savings

Table 1 Name of Equipment

Sr. No.	Name of the Equipment
1	Lighting
2	Ceiling Fan
3	Split AC

4.1. Electricity Bill Analysis

4.1.1. Details of Consumer Nos.

Consumer Details

Table 2 Consumer Details

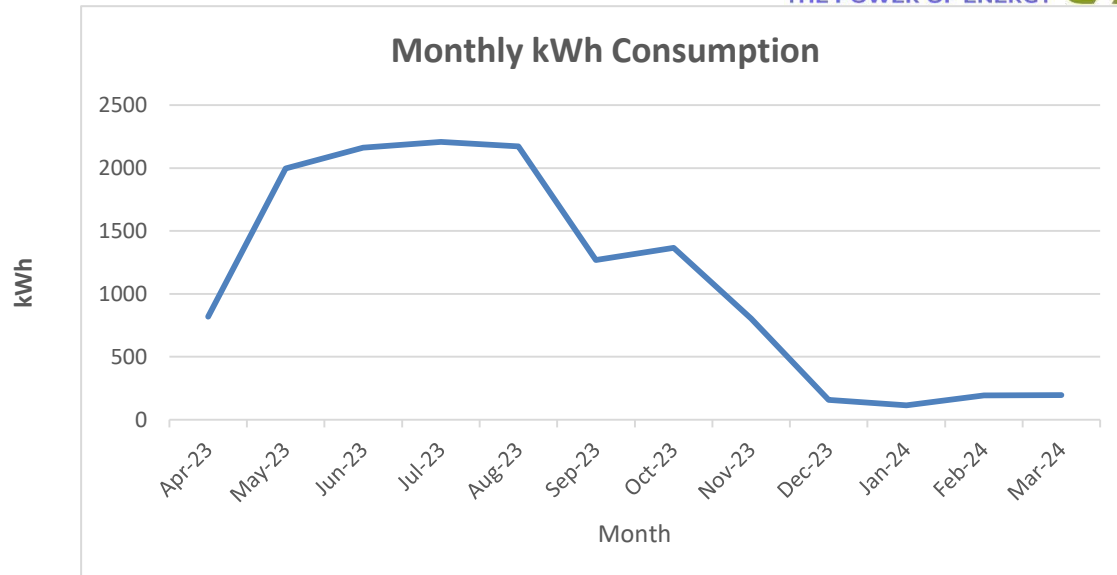
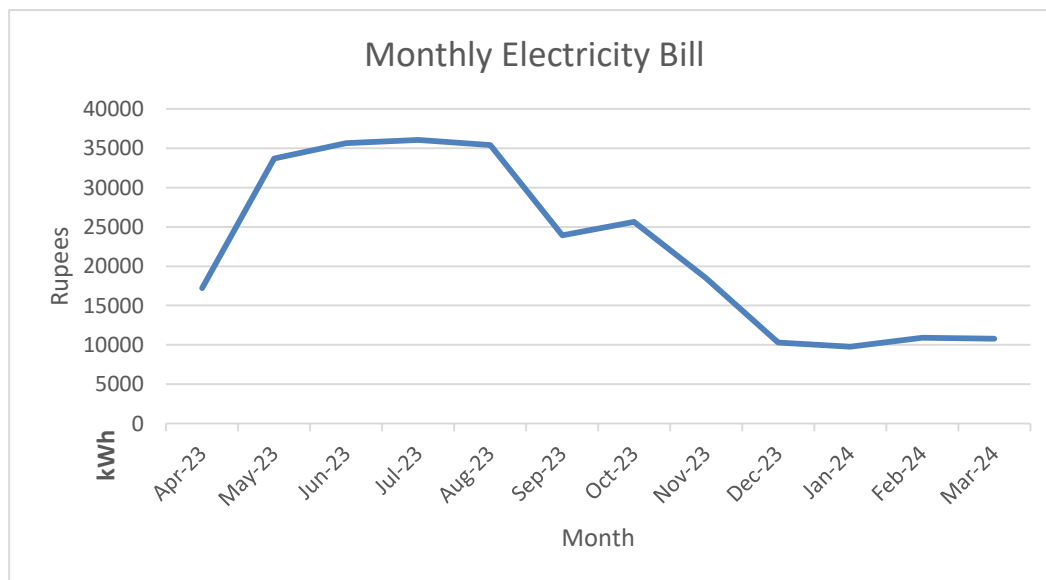
Parameter	Details
Consumer No. Main Building	413890028651
Consumer No. Dr. Babasaheb Ambedkar Bhavan	413890069153
Consumer No. Science Building	413890068220
Consumer No. Principal Bungalow	413890035577



Consumption Details

Table 3 Billing Data

2023-24		
MONTH	UNITS	AMOUNT
Apr-23	819	17226.78
May-23	1996	33704.91
Jun-23	2162	35643.39
Jul-23	2209	36075.73
Aug-23	2172	35422.64
Sep-23	1268	23941.82
Oct-23	1366	25652.31
Nov-23	803	18490.28
Dec-23	158	10309.79
Jan-24	115	9763
Feb-24	193	10910
Mar-24	196	10780
Avg	1121	22327
Max	2209	36076
Min	115	9763
Sum	13457	267921

**Figure 1 Monthly Kwh Consumption****Figure 2 Monthly Electricity Bill****Comments:**

1. Average monthly units consumed is **1121 kWh** equivalent to **Rs. 22,327/-**
2. Average electricity charges works out to be **Rs. 6 /-**



Consumption Details

Table 4 Billing Data

2023-24		
MONTH	UNITS	AMOUNT
Apr-23	1371	12039
May-23	558	5417
Jun-23	0	648.52
Jul-23	538	5241.53
Aug-23	671	6411.05
Sep-23	806	9289.05
Oct-23	946	9820
Nov-23	2175	20031
Dec-23	0	580
Jan-24	0	420
Feb-24	0	420
Mar-24	0	420
Avg	589	5895
Max	2175	20031
Min	0	420
Sum	7065	70737

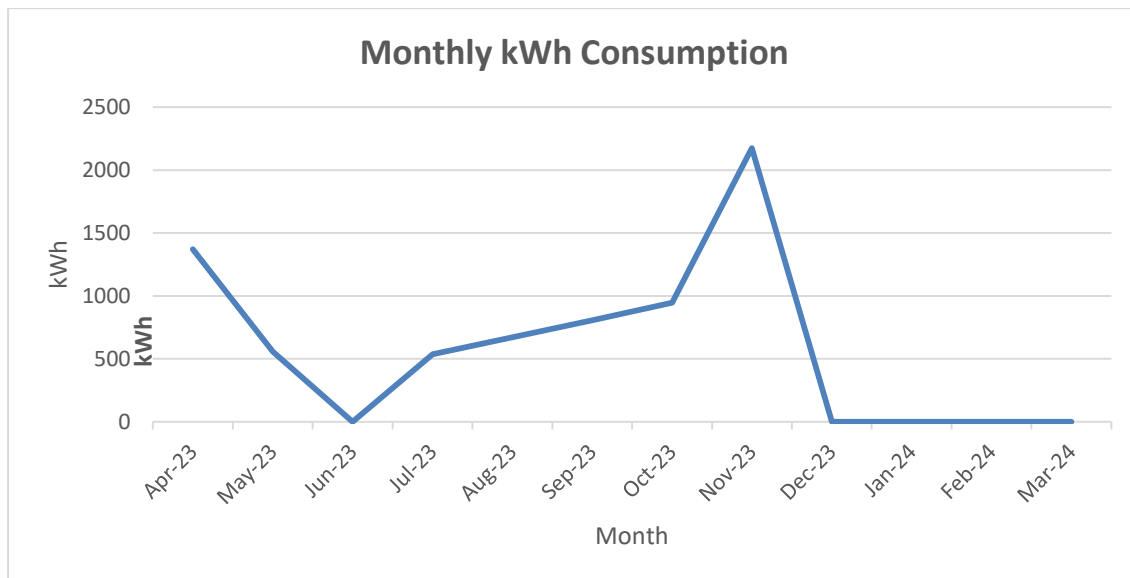


Figure 3 Monthly kWh Consumption

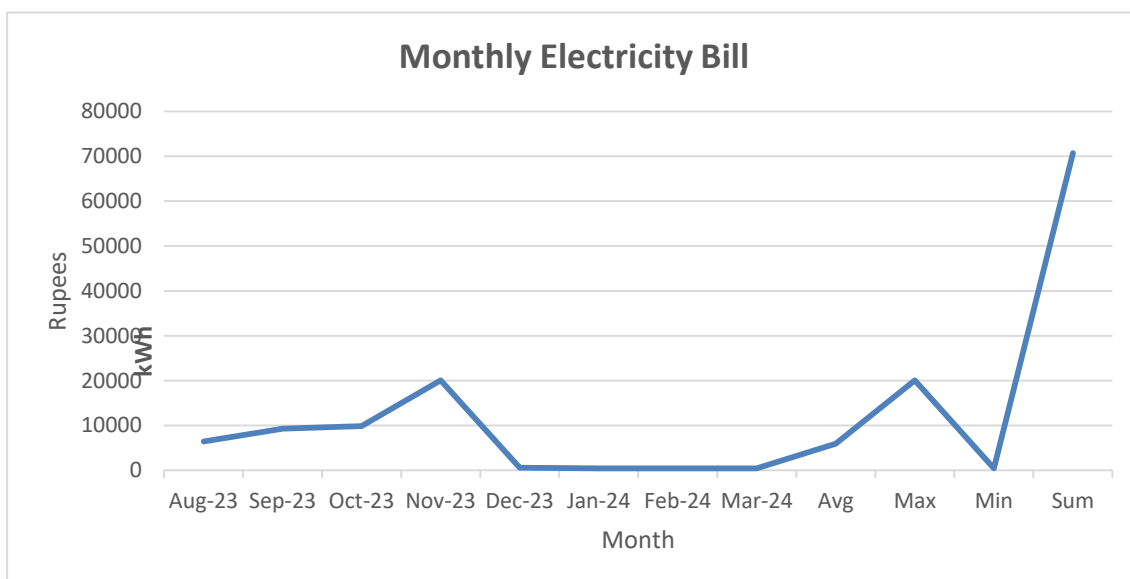


Figure 4 Monthly Electricity Bill

Comments:

1. Average monthly units consumed is **589 kWh** equivalent to **Rs. 5,895/-**
2. Average electricity charges works out to be **Rs. 6 /-**



Consumption Details

Table 5 Billing Data

2023-24		
MONTH	UNITS	AMOUNT
Apr-23	217	2296.69
May-23	477	860
Jun-23	0	450
Jul-23	312	3250
Aug-23	799	7560
Sep-23	621	5971
Oct-23	946	9000
Nov-23	629	6155
Dec-23	0	422
Jan-24	0	422
Feb-24	0	422
Mar-24	0	420
Avg	333	3102
Max	946	9000
Min	0	420
Sum	4001	37229

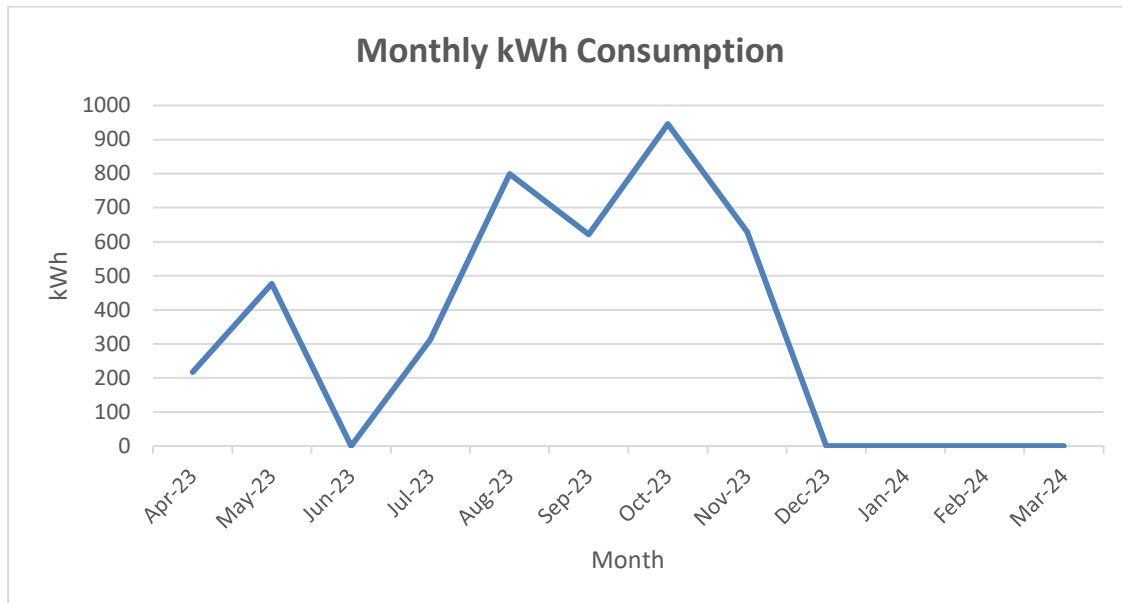


Figure 5 Monthly kWh Consumption

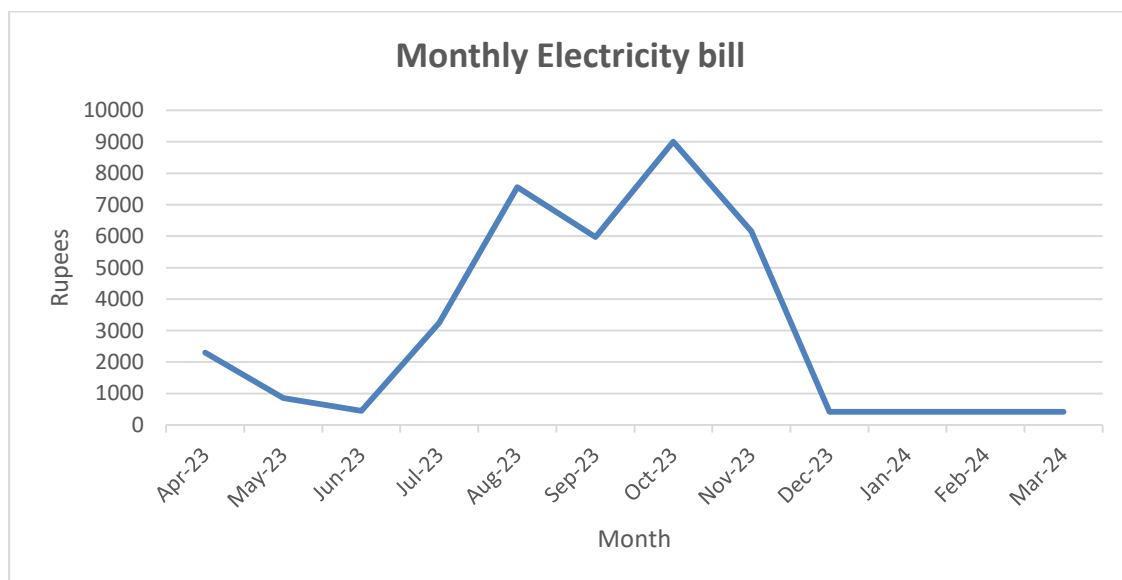


Figure 6 Monthly Electricity Bill

Comments:

1. Average monthly units consumed is **333 kWh** equivalent to **Rs. 3,102/-**
2. Average electricity charges works out to be **Rs. 6 /-**



Consumption Details

Table 6 Billing Data

2023-24		
MONTH	UNITS	AMOUNT
Apr-23	0	350
May-23	191	2234.98
Jun-23	880	14319.5
Jul-23	1218	20973.17
Aug-23	700	10820.69
Sep-23	580	7666.7
Oct-23	598	9542.44
Nov-23	590	9193.56
Dec-23	591	8816.1
Jan-24	0	389
Feb-24	0	390
Mar-24	390	390
Avg	478	7091
Max	1218	20973
Min	0	350
Sum	5738	85086

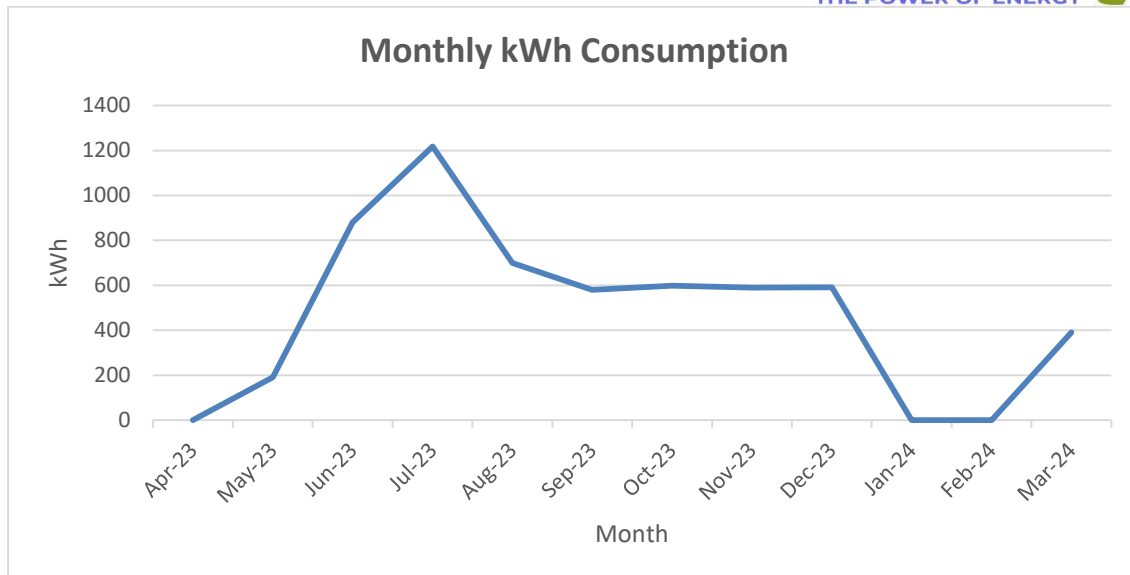


Figure 7 Monthly kWh Consumption

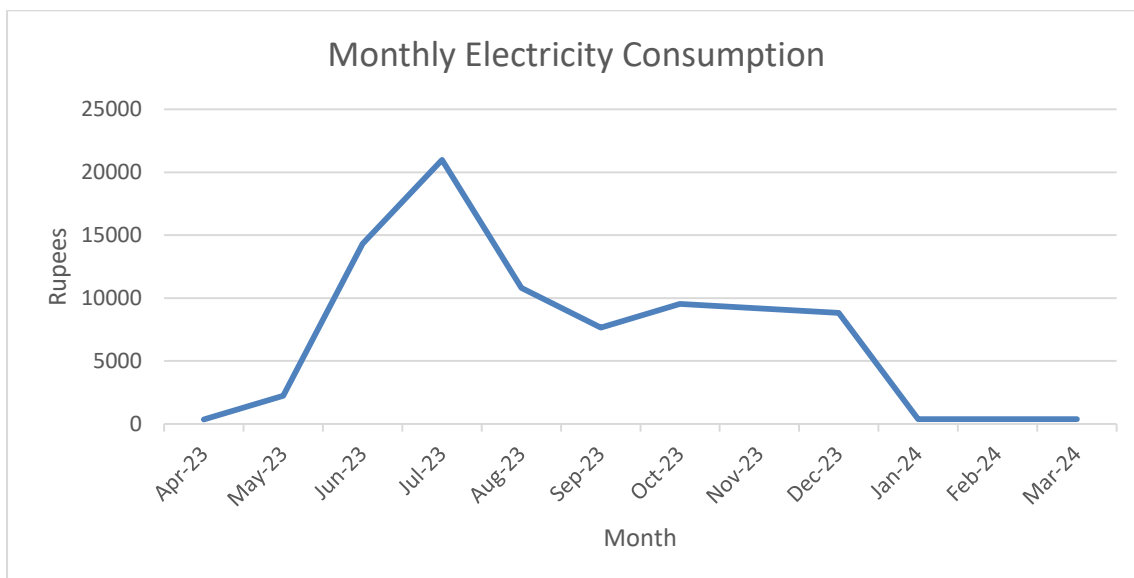


Figure 8 Monthly Electricity Bill

Comments:

1. Average monthly units consumed is 478 **kVAh** equivalent to **Rs. 7,091/-**
2. Average electricity charges works out to be **Rs. 6 /-**



Connected Load Details

Table 4 Connected Load of Facility

Fixtures	Wattage	Ground Floor	First Floor	Second Floor	Total Qty	Total Connected Load in KW
Ceiling Fan	75	131	145	160	436	32.70
T-8 Tube light	40	284	186	171	641	25.64
LED Tube Light	18	185	57	211	453	8.15
LED Round Panel	12	35	0	0	35	0.42
PC's	200	45	25	207	277	55.40
Printer	150	28	14	16	58	8.70
Projector	150	3	6	11	20	3.00
Exhaust Fan	55	22	7	5	34	1.87
LED Screen	60	2	0	0	2	0.12
LED Bulb	20	1	1	1	3	0.06
RO Water cooler	800	4	1	3	8	6.40
Xerox Machine	800	5	3	0	8	6.40
LED Flood Light	150	0	0	6	6	0.90
Refrigerator	800	4	3	0	7	5.60
Submersible	5520	3	0	0	3	16.56
Split A/c 3 *	2250	7	0	15	22	49.50
CFL	18	2	1	18	21	0.38
Total					2034	221.80

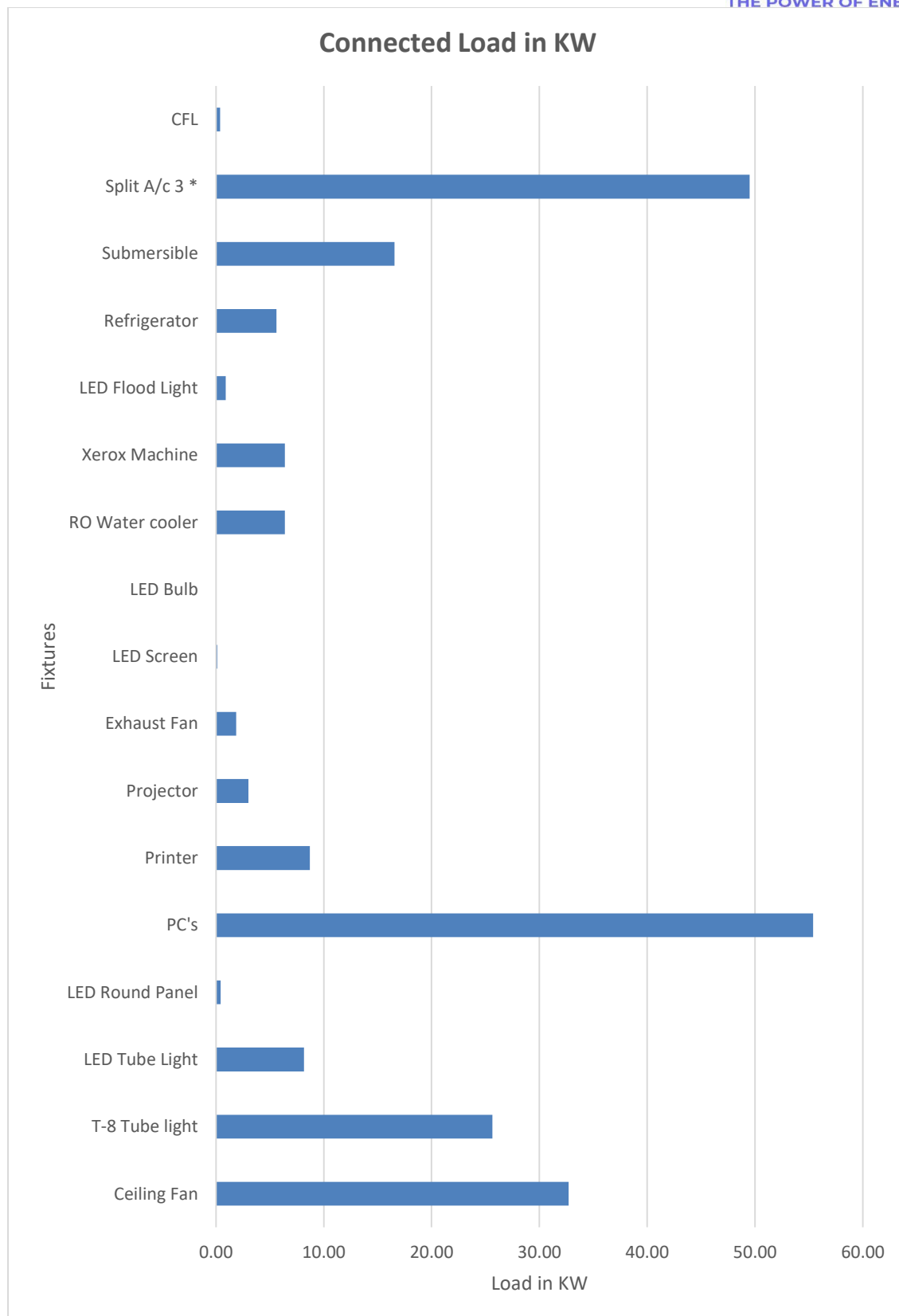


Figure 9 Distribution of Connected Load

5. ENERGY CONSERVATION MEASURES

ECM 1: Replacement of Tube Lights with More Efficient Lights

ECM No.	Energy efficiency improvement measures	Investment Rs. In Lakh	Estimated Saving		Estimated Savings Rs. In Lacs	Estimated Payback Years
			Electricity	Carbon credit		
			kWh	(Tons of CO ₂)		
1	Replacement of conventional lights with suitable LEDs	2.23	4800.00	4.08	0.29	6.89



Figure 10 Tube Light

Observations:

Facility has installed Tube Lights of 28W, 36 W and 40 W in their premises.

Recommendations:

During energy audit, it is observed that facility has installed Tube Lights of 28W, 36W and 40W at some of the places in the facility. Also, the energy team at the facility has already replaced some of the CFLs with LEDs. The operating hours for these lightings are around 6 hours. Tube Lights of 28W, 36W and 40W with equivalent LED fixture thereby achieving significant reduction in energy consumption. The LEDs could be replaced in such a manner that it has the same fixture so there will not be retrofitting cost attached to the replacement. The replacement could be done in a phased manner. LED lights have better efficacy as well as better lifetime than conventional lights.

Type of Existing Fitting	CSR NO	Price - Rs/Unit	Dismantling cost	Investment Rs Lakh	GST 12%	Total Investment
Tube Light	2-1-22	926	15	1.99	0.24	2.23
TOTAL				1.99	0.24	2.23

CSR no	Description	Material	Labour	Total	Dismantling cost	Quantity	Total Cost
2-1-23	Supplying & erecting LED 20W tube light fitting (4 feet) with aluminum housing, heat sink, integrated HF electronic driver complete.	881	45	926	15	200	199090
	Total						1.99
	12% GST on total Investment cost						0.24
	Total cost						2.23

ECM 2: Replacement of Old Fan with Energy Efficient Super Fan

ECM No.	Energy efficiency improvement measures	Investment Rs. In Lakh	Estimated Saving		Estimated Savings Rs. In Lacs	Estimated Payback Years
			Electricity	Carbon credit		
			kWh	(Tons of CO ₂)		
2	Replacement of existing fans with energy efficient Super fans	3.34	2940.00	2.50	0.17	19.11



Figure 11 Fan

Observations:

During energy audit, it is observed that facility has old 75 watts fan and its energy consumption is on higher side.

Recommendations:

During energy audit it is observed that facility has installed non star rated fan of 75 watts so we recommend to replace energy consuming fan with energy efficient super fan

Energy Saving Calculations:

Particular	Unit	Value
Existing energy consumption of Fan	kWh/year	7875
Wattage of Energy Efficient Super Fan	Watt	35
Energy consumption after replacing with Energy Efficient Super Fan	kWh/year	3675
Operating hrs/day	Hrs/day	4
No. of working days in a year	Days	300
Diversity factor	%	70%
Annual Saving	kWh/year	2940
Unit rate	Rs/kWh	6.00
Annual Saving	Rs. In Lacs	0.17

Investment Details:

30



ECM 3: Optimization of Set Temperature of ACs

Sl. No.	Energy efficiency improvement measures	Investment Rs. In Lacs	Estimated Saving		Savings Rs. In Lacs	Payback Year
			Electricity kWh	Carbon credit (Tons of Co2)		
3	Optimize the temperature setting to 23-25 degree Celsius	0.00	289.58	0.25	0.03	0.00



Figure 12 Air Conditioner

Observations:

Facility has installed Split AC of 1.5 ton 3* in their premises

Recommendations:

During assessment, it is observed that Split AC of 1.5 ton 3* set point was 22⁰ C. Hence, it is recommended to increase set temperature setting to 23⁰ C as well as improve maintenance of AC frequency.

It is known that, a 1°C raise in evaporator temperature can help to save almost 3% on power consumption (this also can be verified from BEE guideline: Chapter 4. HVAC and Refrigeration System).

The TR capacity of the same refrigeration will also increase with increase in the evaporator temperature, as given in table below:

Effect of variation in Evaporator Temperature on Compressor Power Consumption			
Evaporator Temperature (°C)	Refrigeration Capacity* (tons)	Specific Power Consumption	Increase in kW/ton (%)
5	67.58	0.81	-
0	56.07	0.94	16
-5	45.98	1.08	33
-10	37.2	1.25	54
-20	23.12	1.67	106

* Condenser temperature 40°C


Energy Saving Calculations:

Particular	Unit	Value
Estimated Annual Consumption of ACs	kWh/hr	9652.5
Estimated Saving	%	3%
Operating Hrs per day	hrs/day	3
Operating days per year	Days/year	65
Estimated Saving	kWh/year	290
Unit Rate	Rs/kWh	9.5
Annual Saving	Rs Lakh/year	2750.96

	Model	Star Rating	W
Split AC	1.0 Ton	5 Star	984
	1.5 Ton		1490
	2 Ton		1732
	0.8 Ton	3 Star	812
	1.0 Ton		1092
	1.5 Ton		1566
	2.0 Ton		1938
	1.0 Ton	2 Star	1154
	1.5 Ton		1709
	2.0 Ton		2210
	1.0 Ton	No star	1600
	1.5 Ton		2500
Window AC	2.0 Ton		3000
	1.0 Ton	3 Star	1157
	1.5 Ton		1676
	2.0 Ton		2266
	1.0 Ton	2 Star	1250
	1.5 Ton		1745
	2.0 Ton		2396
	1.0 Ton	No star	1600
	1.5 Ton		2500
	2.0 Ton		3280



6. List of Instruments

POWER ANALYSER



Picture 1 ALM 20 Power Analyzer

ALM 20 Power Analyzer is designed for Measuring power network parameters

TECHNICAL SPECIFICATIONS

Number of channels	3U/3I
Voltage (TRMS AC + DC)	100V to 2000V ph-ph / 50V to 1000V ph-N
Voltage ratio	Up to 650 kV
Current (TRMS AC + DC)	5mA to 10,000 Aac / 50 mA to 5,000 Adc (depending on Clamp)
Current ratio	Up to 25 kA
Frequency	42.5 - 69 Hz, 340 - 460Hz
Power values	W, VA, VAR, VAD, PF, DPF, $\cos \phi$, $\tan \phi$
Energy values	Wh, VAh, VARh
Harmonics, THD	on V, U, I & In up to 50th order
Electrical safety	IEC 61010, 1000V CAT III / 600V CAT IV
Protection	IP54



DIGITAL CLAMP METER



Picture 2 MECO 3150 DIGITAL CLAMP METER

Power Clamp meter is a Portable Digital multi-functional measuring instrument. Designed for Measuring selected power network parameters, AC/DC Voltage, AC/DC current, Resistance, Continuity, Diode and Frequency.

TECHNICAL SPECIFICATIONS

DC VOLTAGE (Auto Ranging)	
Ranges	4V, 40V, 400V, 1000V
Overload Protection	1200V DC/800V AC
AC VOLTAGE (Auto Ranging) 40-500Hz	
Range	4V, 40V, 400V, 750V
Overload Protection	1200V DC/800V AC
RESISTANCE (Auto Ranging)	
Range	400Ω, 4KΩ, 40KΩ, 400KΩ, 4MΩ, 40MΩ
Test Current	0.7mA on 400Ω, 0.1mA on 4KΩ
Diode Test	
Measurement Current	1.0 ± 0.6 mA Approx
Open Circuit Voltage	0.4V Approx
Overload Protection	500V DC / AC
Frequency (Auto Ranging)	
Range	10.00Hz, 50.00Hz, 500.0Hz, 5.000kHz, 50.00kHz, 500.0kHz
Sensitivity	3V
Overvoltage Protection	200V DC or AC peak

DIGITAL CLAMP METER



Picture 3 RISH POWER CLAMP 1000 A/400 A AC-DC

Power Clamp meter is a Portable Digital multi-functional measuring instrument. Designed for Measuring selected power network parameters, AC/DC Voltage, AC/DC current, Resistance, Continuity, Diode and Frequency.

TECHNICAL SPECIFICATIONS

Measuring function	Measuring range
kWh	9.999 kWh
	99.99 kWh
	999.9 kWh
	9999 kWh
Ahr	999.9 Ahr
Phase angle	0.0°....360.0°
Power Factor	-1...0...1
Harmonics (RMS & %)	1...13
	14...49
THD	0...99.9%
Crest Factor	1.0...2.9
	3.0...5.0
Power Clamp 1000A peak	1400 A/ 1400 V
Power Clamp 400A peak	100 A
	560 A/ 1000 V
Power Clamp 1000A INRUSH	999.9 A
Power Clamp 400A INRUSH	99.99 A
	400 A
Resistance	9999 Ohm
Continuity	Below 40 Ohm

THERMAL IMAGER



Picture 4 FLIR TG 167 Thermal imager

FLIR TG 167 Thermal imager is designed to easily find unseen hot and cold spots in electrical cabinets or switch boxes, giving you quality image detail on even small connectors and wires.

TECHNICAL SPECIFICATIONS

Accuracy	±1.5% or 1.5°C (2.7°F)
Detector Type	Focal plane array (FPA), uncooled micro bolometer
IR Resolution	80 × 60 pixels
Laser	Dual diverging lasers indicate the temperature measurement area, activated by pulling the trigger
Memory Type	Micro SD card
Object Temperature Range	-25°C to 380°C (-13°F to 716°F)
Thermal Sensitivity/NETD	<150 mK
Display	2.0 in TFT LCD

INFRARED THERMOMETER



Picture 5 HTC IRX 64 Infrared thermometer

HTC IRX 64 infrared thermometer is useful instrument to measure the surface temperature. Infrared thermometers are ideal for taking temperatures need to be tested from a distance. They provide accurate temperatures without ever having to touch the object you're measuring (and even if your subject is in motion).

TECHNICAL SPECIFICATIONS

Specification	Range
IR	-50°C~1050 °C
Contact	-50°C~1370 °C
IR Temp. Resolution	0.1°C
Basic Accuracy	+/- 1.5% of reading
Emissivity	Adjustable 0.10 ~ 1.0
Optical resolution	30 : 1

LUX METER



Picture 6 Nishant NE 1010 Lux meter

Nishant NE 1010 Lux meter is used to measure the lux levels.

TECHNICAL SPECIFICATIONS

Measuring range	0 Lux ~200, 000 Lux/0 Fc~185, 806 Fc
Accuracy	± 3% rdg ± 0.5% f.s.(<10,000 Lux)
	± 4% rdg ± 10% f.s.(>10,000 Lux)
Digital Updates	2 times/s
Photometric sensor	Silicon diode
Battery life	18 hours (continuous operation)
Operating temperature and humidity	0°C ~ 40°C, 10% RH ~ 90% RH
Storage temperature and humidity	-20°C ~ 50°C, 10% RH ~ 90% RH
Power	9V battery
Unit Size	52.5 x 52.5 x 166 mm
Auto power off	After 5 minutes

For PPS Energy Solutions Pvt. Ltd.

Dr. Ravi G. Deshmukh
Energy Auditor Class - A
MEDA/ECN/2021-22/EA-11

Solar PV System

DETAILS OF SOLAR NET METER INSTALLED IN THE COLLEGE

Sr. No.	Location	Meter Number	Load
1.	Main Building	413890028651	30 KW
2.	Dr. Babasaheb Ambedkar Bhavan	413890069153	10 KW
3.	Science Building	413890068220	10 KW
4.	Principal Bungalow	413890035577	5 KW
TOTAL			55 KW

J. M. Patel College, Bhandara has installed grid tied Solar PV System of 30 kWp Solar Rooftop Power Plant for Main Building, 10 kWp Solar Rooftop plant for Dr. Babasaheb Ambedkar Bhavan, 10 kWp solar Rooftop plant for Science Building and 5 kWp Solar Rooftop plant for Principal Bungalow. Originally, the Main Building had an installed capacity of 20 kWp in which another 10 kWp was added in 2023-24. Thus, J. M. Patel College, Bhandara has increased its installed grid tied Solar PV system from a total of 45 kWp to 55 kWp. Thus, J. M. Patel College, Bhandara has installed grid tied Solar PV System of total 55 kWp Solar Rooftop Power Plant for generating Green Energy.



Rooftop Solar Power plant - Main Building



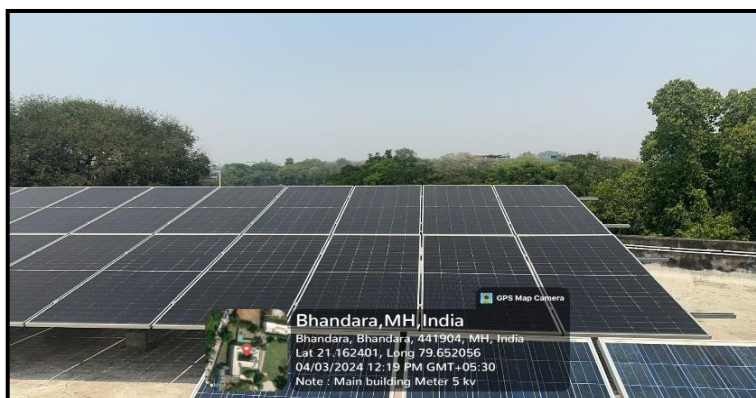
Rooftop Solar Power plant – Ambedkar Bhawan



Rooftop Solar Power plant - Science Building



Rooftop Solar Power plant–Principal Bungalow



Roof Top Solar Power plant - Main Building

Energy Saving Calculations:

Facility is getting the benefit of energy saving after installation of Solar PV system of 55 kW in the premises. The calculation for energy saved is given below. We have assumed solar generation of 4.5 kWh per kWw per day for the calculation purpose.

Calculation to Fulfill Building Total Load Requirement			
Sr. No.	Details	Value	Unit
1	Units generated per day per KWp	6	KWh/KWp/day
2	Units generated per Year per KWp (330 days / Year)	1320	KWh/KWp/Year
3	Total capacity of Solar PV system installed	55	KWp
4	Total Units generated by 55 kWp Solar PV plant per Year (330 days / Year)	72600	KWh/KWp/Year
5	Unit rate	6	Rs./KWh
	Total Monitory saving achieved	435600	Rs./year

For PPS Energy Solutions Pvt. Ltd.

Dr. Ravi G. Deshmukh
Energy Auditor Class - A
MEDA/ECN/2023-24/EA-14

**GONDIA EDUCATION SOCIETY'S
J. M. PATEL ARTS, COMMERCE & SCIENCE
COLLEGE, BHANDARA-441904
MAHARASHTRA (NAAC 'B' grade- CGPA-
2.46, 2018)**

GREEN AUDIT REPORT: -2023-24



CONDUCTED BY :

ENVINZOA, NAGPUR

301, AQUA HABITAT, PLOT- 15, DURUGKAR LAYOUT, BELTHRODI ROAD, NAGPUR, 440027

E mail id- envinzoa@gmail.com, contact # 9372308382, 07020144956

AUDIT PROCESS REPORT

CERTIFICATION Green Audit 2023-2024

★ ISO 14001 : 2015 certified



This is to certify that

J M Patel Arts Commerce & Science College
Bhandara 441904, Maharashtra, India

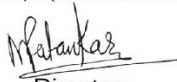
has conducted detailed
GREEN AUDIT (2023-2024)
of their college campus and provided necessary data and
right credentials for **SCRUTINY**.

The relevant activities and appropriate measures
carried out by college on the basis of submitted responses of
questionnaire and presented report
have been **CHECKED & REVIEWED** and found to be
SATISFACTORY.

The initiatives taken by faculty and students towards
a better **UNDERSTANDING** of environment and
a sensitive awareness towards its
CONSERVATION & SUSTAINABILITY
are highly acknowledged & commendable.

This subsequent audit process is completed with reference to the recommendations of earlier report
and certification is done on **May 22, 2024**
Certificate # **EIZ/GRN/2024/08/08**
and is valid through till next proposed audit on/before **Mar 31, 2025**.




Director
ENVINZOA
Nagpur



(Certificate issued on May 22, 2024 at Nagpur)

Note : The whole process includes annual audits and certificates for five years span.
The validity of these certificates is determined by the organization's compliance with Green
Audit recommendations as well as system's maintenance and interim surveillance audit(s).

envinzoa
environmentalists | entomologists | consultants

aqua habitat, durugkar layout, beltarodi road, nagpur 440027, india
dr.nitisha@gmail.com; director@envinzoa.com; +91 93723 08382; +91 70201 44956
www.envinzoa.com

DISCLAIMER

It is with great pleasure that we present the second Green Audit Report of J. M. Patel Arts, Commerce & Science College. This report marks a significant milestone in the journey towards sustainability and environmental responsibility.

The first Green Audit, conducted (2022-23), laid the foundation for a comprehensive evaluation of the institution's environmental impact. It provided the institute with valuable insights and a set of recommendations aimed at reducing their ecological footprint.

Over the past (2023-24), the institution has been actively working on implementing these recommendations. This report is a testament to the collective commitment to fostering an eco-friendly campus and adopting sustainable practices. The initiatives undertaken during this period reflect their dedication to environmental stewardship, from energy conservation and waste management to biodiversity enhancement and awareness programs.

Our audit team had monitored and hence reported that many of the recommendations from the previous audit have been successfully fulfilled. Notable achievements include [maintenance of the water pipelines throughout the college campus, display of maintenance date on water filters, refilling of the fire extinguishers, de-nailing the plants for naming it, management of the solid waste, decrease in the amount of the paper used, the installation of new solar panels, the introduction of a comprehensive waste segregation system, activation of vermicomposting unit, and the expansion of green cover on campus, etc.

These efforts have not only contributed to a healthier environment but have also instilled a culture of sustainability within our community. The findings of this second audit provide a clear indication of the progress institute have made and the areas

AUDIT PROCESS REPORT

where further improvements are necessary.

The institute is committed to continually advancing their environmental initiatives and setting new benchmarks in sustainability. The journey towards a greener future is ongoing, and they are looking forward to build the foundation laid by this report. The audit team appreciate the dedication and support they have instrumented in achieving the goals set forth in the previous audit. As we present this report, we see the commitment of institute towards environmental responsibility and look forward to continue their efforts in making J. M. Patel Arts, Commerce & Science College a model of sustainability for years to come.

The Green Audit Team generated this report for J. M. Patel Arts, Commerce & Science College (NAAC 'B' grade 2018), Rajagopalachari Ward, Bhandara - 441 904, Maharashtra based on information provided by the College's representatives and the expert team's best judgment.

While every possible, precaution was taken in its preparation. The information contained in this report was compiled in good faith based on the information available.

It is also stated that the recommendations were based on best judgments, and that no express or implied representation, warranty, or undertaking is made, and that Audit Team accepts no responsibility for any direct or consequential loss resulting from the use of the information, statements, or forecasts in the report.

The college should make the respective efforts to take action on the remaining recommendations at the earliest.

Prepared by:
Nitisha V Patankar, Ph D
ENVINZOA, Nagpur



**AUDIT PROCESS
REPORT**

Green Audit Committee of college



Principal
Dr. Vikas Prabhakar Rao Dhomne

Name of the Members	Signature
Dr. Vikas Prabhakar Rao Dhomne Principal	
Dr. Karthik Panicker IQAC Co-ordinator	
Dr. Aparna Yadav Green Audit Coordinator	
Green Audit Members	
1. Dr. Girdharilal Tiwari 2. Dr. Samina Tadavi 3. Dr. Jitendra Kirsan 4. Shri. Palash Feddewar 5. Smt. Priyanka Sharma	6. Dr. Pratap Patle 7. Shri. Khomesh Lanjewar 8. Shri. Piyush Sangatsaheb 9. Dr. Naina Sonwane 10. Shri. Suraj Nakhate
Green Audit Research Assistant (MSc. Final year-Botany)	
1. Ku. Rucha R. Balpande	2. Ku. Semeshwari D. Gaware

AUDIT PROCESS REPORT

ABOUT COLLEGE IN BRIEF

1. Name of the Institute: J. M. Patel College Bhandara
2. No. of Branches: 04
3. No. of Students: Intake UG- 2211, PG- 430 , Total: 2641
4. No. of Faculty Members (including CHBs): 67
5. No. of Non-Teaching members: 38
6. No. of Buildings- 03
8. Total campus area: 5.3100 acer (21488.81 sq meter)
9. College building Spread Area: 9940.6 sq meter

Build Up Area of the Institute	9940.6 Sq. meter
Area of Plantation	13656.747 Sq. metre
Total Area	21488.81 Sq. meter

	No. of Students 2641	No. of Teachers 67	Non-teaching staff 38
Gents	817	40	35
Ladies	1824	27	03

- a) Girls common room: 01
- b) Garbage collection bins: Green- 12, Blue-6 and Yellow-4.
- c) Labs: 21
- d) Class rooms: 39
- e) Boys common room: 01
- f) First aid/Sick room: 01
- g) Drinking water coolers: 08

**AUDIT PROCESS
REPORT**

***Recommendations of the previous report (2022-23) and action taken
report in the year 2023-24.***

Sr.no.	Recommendations	Action taken
	<i>Land use Recommendations</i>	
1.	Environment Club and Nature club should be formed with students playing an important role in it .	Yes
2.	The committee should monitor the Ambient Air Quality as per the guidelines of "Air (Prevention and Control of Pollution) Act 1981, and Water Quality as per IS 10500.	Yes
3.	Use of bicycle in campus to be promoted.	Yes
4.	Promote sharing of vehicles among the students and faculty members.	Yes
	<i>Noise Recommendations</i>	
5.	Noise levels must be monitored in accordance with the "Noise Pollution (Regulation and Control) Rules 2000."	Yes
6.	According to the Central Motor Vehicle Act of 1988, vehicle exhausts must be evaluated on a regular basis in the college.	-
7.	Display No honking board or Sound Limit Board outside the gate.	Yes
	<i>Water Recommendations</i>	
8.	To establish and implement the Water Conservation and Management Plan as per Environment Protection Act 1986.	Yes
9.	Water analysis should be done regularly following the standards of CPCB.	-

AUDIT PROCESS REPORT

10.	The water Conservation Awareness Program to be conducted on World Water Day on 22 nd March every year.	Yes
11.	Display boards for switching off the taps to be put on at appropriate place.	Yes
12.	To eliminate the spillage and over usage of water in wash basins, urinals and toilet push taps are highly recommended.	Yes
13.	Need of monitoring, controlling overflow is essential and periodically supervision drills should be arranged. Automatic Leak detection systems and sensors for conservation of water.	Yes
14.	Water meters to be installed on Well water - extraction system as per the guideline of Central Ground Water Authority (CGWA).	Yes
15.	Ensure RO filtration equipment used for such usage, are regularly serviced and the next service date is displayed	Yes
16.	Ensure that all cleaning products used by college staff have a minimal detrimental impact on the environment, i.e. are biodegradable and non-toxic, even where this exceeds the Control of Substances Hazardous to Health (COSHH) regulations.	-
Soil Recommendations		
17.	Review periodically the list of trees planted in the garden. Allot numbers to the trees and keep records. Give scientific names to all the trees using a method that will not hurt the plants. Nailing of plants should be strictly avoided.	yes
18.	Promote environmental awareness as a part of course work in various curricular areas, independent research	Yes

AUDIT PROCESS REPORT

	projects and community service.	
19.	Create awareness of environmental sustainability and take actions to ensure environmental sustainability	Yes
20.	Establish a College Environmental Committee that will hold responsibility for the enactment, enforcement and review of the Environmental Policy. The Environmental Committee shall be the source of advice and guidance to staff and students on how to implement this Policy.	Yes
21.	Ensure that an audit is conducted annually and action is taken on the basis of audit report, recommendation and findings.	Yes
22.	Plantation of plants which are best for absorbing carbon dioxide (CO ₂) and reducing carbon footprint (Aloe vera, Areca palm, Neem, Gerbera, Tulsi, Peepal, etc.) should be initiated.	Yes
23.	Unlike trees, grasslands sequester most of their carbon underground. When they burn, the carbon stays fixed in the roots and soil instead of in leaves and woody biomass. Forests have the ability to store more carbon, but in unstable conditions due to climate change, grasslands stand more resilient ¹ . So it is recommended that the grassland area should be maintained and taken care of as before in the college premises.	Yes
	<i>Solid waste recommendation</i>	
24.	The vermicomposting units are suggested to make functional technically to get compost which could be used within college for the plants.	Yes
25.	Create an awareness-programme event for local farmers and offer advice on how to set up a vermicomposting unit	In progress

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	on their property as part of an extension activity.	
26.	The waste should be segregated at source by providing separate dustbins for Bio-degradable and Non Bio-degradable waste.	Yes
27.	The vermicompost produced in the college vermicomposting unit could be sold in reasonable rates to the required farmers, nurseries or houses under ISO: 9001-2015 for self-fund generation in college.	In progress
28.	Reduce the absolute amount of waste that is produced from college staff offices. Set a goal for reducing the amount of trash generated each week	Yes
29.	Make full use of all recycling facilities provided by Municipal Council and private suppliers, including glass, cans, white coloured and brown paper, plastic bottles, batteries, print cartridges, cardboard and furniture.	In progress
30.	Recycle or safely dispose of computers and electrical appliances.	Yes
31.	Shred or compost untreated wood and leaf wastes into chips and use them as mulch on garden beds to prevent weed growth, retain moisture, regulate soil temperature, and add nutrients back to the soil.	Yes
32.	Raise the cutting height of your lawn mower during the hot summer months to keep grass roots shaded and cooler. This reduces weed growth, browning, and the need for watering. When you mow, leave grass clippings on your lawn instead of bagging them or use a mulching mower. The clippings will return nutrients to the soil instead of taking up space in landfills.	Yes
33.	Check with local repair shops to see if they can use your	Yes

AUDIT PROCESS REPORT

	old appliances for spare parts.	
34.	Use food scraps, yard trimmings, and other organic waste to create a compost pile that can help increase water retention, decrease erosion, and replace chemical fertilizers.	Yes
35.	Recycle hazardous waste during periodic hazardous waste collection programs	Yes
	Energy consumption recommendation	
36.	Management of College may encourage the staff and students, to use Common or public Vehicle instead individual vehicle to conserve fossil fuel. Give preference to the most energy efficient and environmentally sound appliances available.	Yes
37.	Monitor and understand the importance of different sources of college energy consumption, and set appropriate and measurable targets for a reduction certain areas of consumption and/or in the overall consumption of energy.	Yes
38.	Centralized controls of lighting, Common Hall etc. to avoid any miss-use of electricity.	-
39.	Increase Installation of Solar panels for future convenience.	Yes
40.	Shift to paperless regime wherever not required, example attendance muster replaced by biometrics, DG logbook replaced by computerized logbook, daily reports converted from paper to paper less, HOD meetings converted to paperless formats, etc.	In progress
	Recommendations for how to reduce carbon footprint or emission	

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41.	For short distances, one should either walk or ride bicycle to avoid carbon emissions completely. Similarly, Carpooling and public transportation should be encouraged to reduce CO2 emissions.	Yes
42.	Energy efficient appliances should be used to reduce CO2 emissions. For instance, CO2 emissions from traditional incandescent bulb is 8 times more than that of LED bulb. Similarly, refrigerators and ACs with better 'Star Ratings' can help bring down the emissions.	Yes
43.	Forests are called the lungs of our planet for a reason. A tree absorbs 22 kilos of CO2 from environment every year. More and more plantation drives should be carried out.	Yes
44.	3R's principle of Reduce, Reuse and Recycle should be followed. Our emissions can be significantly reduced by reducing the need for new product purchases, encouraging the reuse of current ones, and recycling the used ones. For example, recycling one tonne of glass bottles reduces the emission of more than 300 kilogrammes of CO2.	Yes
45.	Cleaner fuels such as CNG, LPG, hydrogen fuels, and electric cars can significantly reduce CO2 emissions from transportation.	-
46.	Products with a lot of needless plastic packaging should be discouraged since the waste they produce pollutes the environment and fills landfills.	Yes
47.	Going solar, as recommended by the government's recent policy, will significantly reduce CO2 emissions.	Yes
48.	Lastly, switching off lights and other appliances when not	Yes

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	required is the least we can do to contribute towards environment.	
	<i>Carbon sequestration recommendations</i>	
49.	Numbering each plant is recommended to help ground staff manage better and to keep a track of sapling's species. It can also be helpful in the replacement of plants in case of mortality. It can be done by physically tagging the trees with permanent tags.	Yes
50.	The height, width of the plants should be kept in record for future calculation of the carbon sequestration.	Yes
51.	The plantation of invasive species should be avoided. Invasive species are dominant in nature and hinder the growth of the native species around them. Also, they are less supportive of the local fauna such as bees and butterflies, compared to the native plants' species which create an overall habitat for many birds, animals, and insects.	Yes
52.	The plantation sites should be selected by studying soil type, topography, nearby flora, water availability, site accessibility, etc. The sites with issues like waterlogging, encroachments, waste dumping, bad soil quality, etc, should be avoided. Fencing can be done if possible at the site.	Yes
53.	During plantation, the selection of plant species and their compatibility with each other should be studied and plantation should be done accordingly, to improve and ensure a good survival rate.	Yes
54.	Plantations should also incorporate herbs, shrubs, sub-trees in a designed scientific stratification that provides enough resources to improve the survival rate.	Yes

AUDIT PROCESS REPORT

55.	Plantation of bamboo should be avoided, as Bamboo has a high growth rate, and eventually, they take over the nearby plant species resulting in mortality in the plantation. The surrounding small trees get covered by a Bamboo patch and due to lack of sunlight and insufficient space for roots to spread, the plants die.	Yes
56.	It is recommended to ensure that all plants have a support stick to avoid any damage in the initial stage of the plantation. Lack of support can lead to damage and even mortality in young planted saplings.	Yes
	OVERALL RECOMMENDATIONS	
57.	Prepare one medicinal Garden and try to plant rear and endangered plant species.	Yes
58.	Display of Use Dustbin boards in college premises.	Yes
59.	Display the servicing and refilling date of the water purifier given by the servicing center near water purifier.	Yes
60.	Ensure that the nailing on the stem of the tree is not practiced to display any of the instructions.	Yes
61.	Update No smoking and No tobacco boards.	Yes
62.	Maximize the proportion of waste that recycle & minimize the quantity of non- recyclable refuse.	In progress
63.	Ensure stable public transport.	Yes
64.	Promotion of Non-Motorized Transport (NMT): Usage of bicycles. Promote use of electric vehicles.	Yes
65.	More efficient chemical waste management for all the laboratories is necessary.	Yes
66.	Perform various drills for fire, earthquake and terrorist or naxalites in the college for the awareness and display the	-

AUDIT PROCESS REPORT

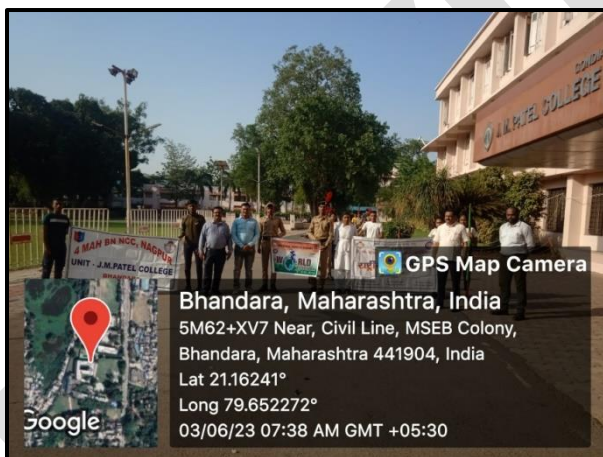
	instructions for rescue in each classroom, corridors, offices etc.	
67.	Measures for conservation of lower fauna needed.	In progress
68.	Reduce energy consumption	Yes
69.	Ensure the registration certificate, yearly maintenance certificate and instructions are displayed inside the lift.	-
70.	Increase Awareness of Environmentally Sustainable Development- Use every opportunity to raise public, government, industry, foundation, and university awareness by openly addressing the urgent need to move toward an environmentally sustainable future. Educate for Environmentally Responsible Citizenship- Establish programs to produce expertise in environmental management, sustainable economic development, population, and related field with help of environment science subject to ensure that all students are environmentally literate and have the awareness and understanding to be ecologically responsible citizens.	Yes
71.	Promote environmental awareness as a part of course work in various curricular areas, independent research projects, and community service.	In progress
72.	Do green audit regularly.	Yes

**AUDIT PROCESS
REPORT**

ENVIRONMENT CONSOUSNESS ACTIVITY 2023-24

1) World Bicycle Day organised on the occasion of "World Bicycle Day"-03.06.2023

On the occasion of World Bicycle Day, a cycle rally was jointly organised by the NSS and NCC units of J.M. Patel Arts, Commerce & Science College, Bhandara. A bicycle rally was organized to promote the use of bicycles, reduce the use of diesel/petrol and also to create public awareness about physical fitness. Cycling can increase your muscle strength, help you to lose weight and contribute in reducing pollution levels.

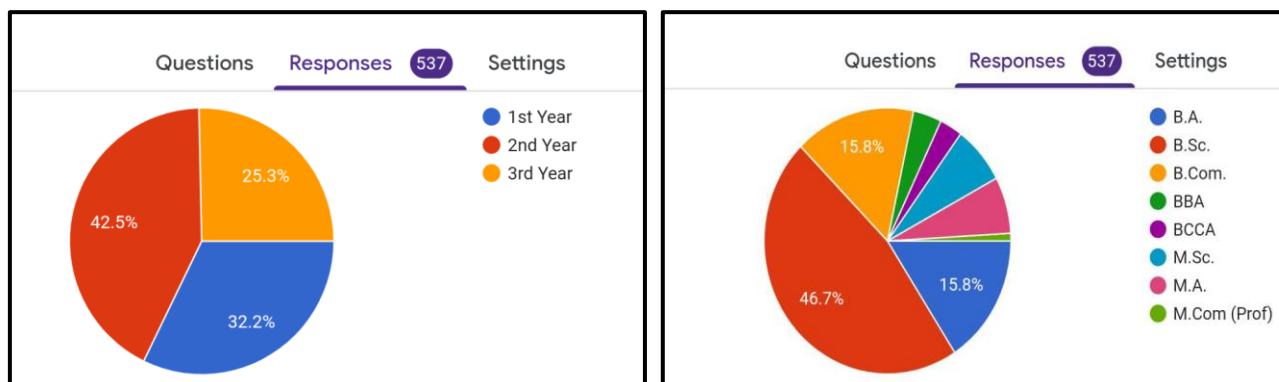


2) Online Quiz Competition on "Environmental Awareness" organised on the occasion of World Environmental Day" -05.06.2023

Online Quiz Competition on "Environmental Awareness" was organized by Department of Zoology (an IQAC supported initiative) on the occasion of World Environment Day - 2023 on Monday, 5th June 2023. A total of 537 Students has filled Goggle forms and

AUDIT PROCESS REPORT

participated in Online Quiz Competition. Certificates were issued to all participants.



3) Online Slogan-Cum-Poster Competition organised on the occasion of “World environmental Day”-05.06.2023

Online Slogan-Cum-Poster Competition organised on “World Environmental Day”- 05.06.2023 by Department of Computer Science and Electronics. World Environment Day is one of the important days of the recognition of encouraging people worldwide to save and protect our environment from different environmental challenges the world is facing today. Total 23 Students participated in this activity. On the basis of Jury judgment top three posters were selected as a winner in this competition and E-certificate were given to all participants.

Slogan-Cum-Poster Competition



AUDIT PROCESS REPORT

4) A public Awareness Campaign to 'Save Wastage of food' organized on the occasion of "World Environmental Day"-05.06.2023

On the occasion of World Environment Day, a public awareness campaign to save wastage of food was organized by the Department of Microbiology with the support of the Internal Quality Assurance Cell (IQAC) of J. M. Patel Arts, Commerce, and Science College, Bhandara. This campaign aimed at reducing the wastage of food items. The team of teachers and students of the Microbiology Department identified eateries around the College to make the people aware about this noble cause. The hotel owners and hawkers were approached and they willingly consented to be a part of the campaign. The teachers and students interacted with the customers who visited the eateries and tried to drive home the importance of not wasting food and how it would ultimately help protect our resources and environment. The team also explained to the eatery owners the importance of hygienic practices during food preparation. They were also encouraged to hand over the surplus food to needy people or distribute it to beggars instead of throwing it away. The team also explained how the food could be prevented from getting spoiled.

 Gondia Education Society's J. M. PATEL ARTS, COMMERCE & SCIENCE COLLEGE BHANDARA - 441904 (M.S.) Ph: 07184-252364, 252003, 256883, Fax: 07184-253268 Re-accredited 'B' Grade by NAAC, Awarded CPE Status (Phone II) by UGC, Awarded 'Star College Scheme' by DRT, GOI	
Public Awareness Campaign	
ON	
"SAVE FOOD"	
Organised By DEPARTMENT OF MICROBIOLOGY (AN IQAC SUPPORTED INITIATIVE) on the occasion of "WORLD ENVIRONMENT DAY" MONDAY, 5th JUNE 2023	
ORGANISING COMMITTEE Mr. Piyush Sangatsaheb (8208561060), Mr. Suraj Nakhate (88855884224)	
DR. KARTHIK PANICKER IQAC Coordinator	MR. PIYUSH SANGATSANEH Hod, Department of Microbiology
DR. VIKAS DHOMNE PRINCIPAL	



AUDIT PROCESS REPORT

5) Tree Plantation Program organised on the occasion of "World Environmental Day"-

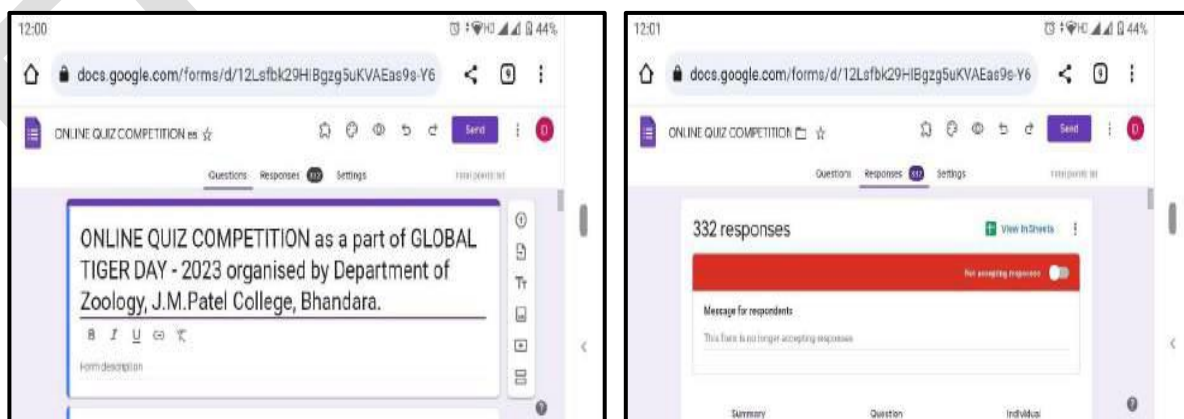
05.06.2023

On the occasion of World Environment Day, a tree plantation program and plastic-free campus activity were jointly organised by the NSS and NCC units of J.M. Patel Arts, Commerce & Science College, Bhandara. The theme of World Environment Day in 2023 is 'Solutions to Plastic Pollution'. This day was celebrated to create awareness about environmental issues. The NSS volunteers of J.M. Patel College, Bhandara, collect the plastic from the college campus. A total of 37 students participated in this program.



6) Online Quiz organised on the occasion of "Global Tiger Day"-29.07.2023

Online Quiz Competition on "Global Tiger Day" was organized by Department of Zoology (an IQAC supported initiative) on the occasion of Global Tiger Day - 2023 on Saturday, 29th July 2023. A total of 332 Students has filled Goggle forms and participated in Online Quiz Competition. Certificates were issued to all participants.



AUDIT PROCESS REPORT

7) Vrikshabandhan Program -01.09.2023

The “Vrikshabandhan Program” was organized by the NSS Unit of J. M. Patel College, Bhandara on 1 September 2023. The Vrukshabandhan program was organised to develop environmental awareness among the students and staff. NSS volunteers made 50 Rakhis from the waste material, like used papers, woollen threads etc, available at home. The principal, teachers and NSS volunteers tied Rakhis to the trees on Campus and called upon the students to save trees. 24 NSS students participated in the Vrikshabandhan program.



8) Poster Competition organised on the occasion of “World Bamboo Day”- 18.09.2023

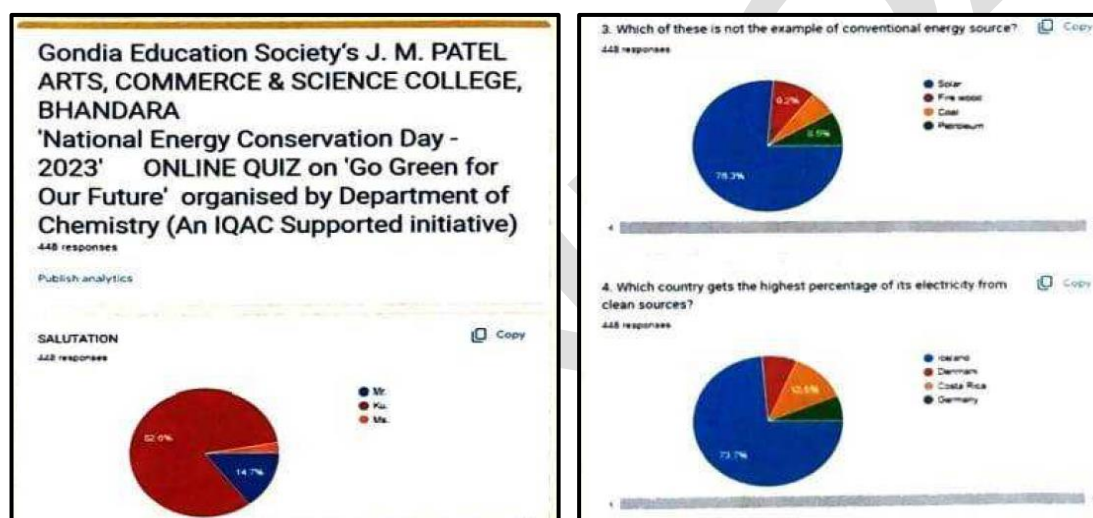
Poster making Competition on “World Bamboo Day Celebration” was organized on 18.09.2023 by the Post Graduate Department of Botany, with the support of Internal Quality Assurance Cell of our College, the theme of Poster making competition was Plant Bamboo- “Green Gold”. This day is celebrated globally to spread awareness about Bamboo conservation. Total 63 Students Participated in the competition.



AUDIT PROCESS REPORT

9) Online Quiz organised on the occasion of "National Energy Conservation Day"- 14.12.2023

An Online Quiz in the Topic 'Go Green for Our Future' was organised by the Department of Chemistry (An IQAC Supported initiative) as a part of National Energy Conservation Day- 2023 Celebrations. The Online Quiz was Multiple-Choice Questions based and framed on the basis of the literature available on renewable & non-renewable energy and energy conservation. 448 students of the college participated in the Online Quiz.



10) "E-Waste Collection Drive" organised as part of National Science Week Celebrations 28.02.2024.

The IQAC initiative supported by Department of Computer Science in collaboration with "Ecolayer E-waste recycling" organised by IT-Club "E-Waste Collection Drive" during the celebration of "Science Week". In college students, teachers and non-teaching staff members deposited e-waste on the collection box in the college premises. Outside the college students collect the e-waste from their villages. Also, as a part of awareness we visit the Bhandara Bus stop and ground to spread the knowledge about e-waste. How harmful is this? How to demolish that in a proper way. Total 35 kg of e-waste collected during the e-waste collection drive. The collected e-waste is handed over to M/s. Ecolayer E-Waste Recycling for proper destruction of e-waste in an eco-friendly manner.



MEMORANDUM OF UNDERSTANDING

Signed between

**Gondia Education Society's
J. M. PATEL ARTS, COMMERCE & SCIENCE COLLEGE
BHANDARA – 441 904 (M.S.)**

(Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur)

&

**M/s. Ecolayer E-Waste Recycling
25, Gupta Compound, MIDC Road No. 11,
Nr. Maruti High School, Andheri (E), Mumbai – 400 093 (M.S.)**

Agreement for Disposal of E waste

This MEMORANDUM OF UNDERSTANDING for disposal of E-waste is made at BHANDARA this Thursday, 16th February, 2023 between *Gondia Education Society's* J.M. Patel Arts, Commerce & Science College, Bhandara and M/s. Ecolayer E-Waste Recycling, whose registered office is at 25, Gupta Compound, MIDC Road No 11, Nr. Maruti High School, Andheri (E), Mumbai – 400 093 whose MPCB Authorization No. MPCB/RO(HO)HSMD/Autho/18/EW-14 (hereinafter referred to as 'the Vendor' which expression shall unless repugnant to the context and meaning thereof mean and include its successors and permitted assigns) of the One Part and Gondia Education Society's J.M. Patel Arts, Commerce & Science College, Bhandara an registered institute/college at Bhandara of the Other Part,

Each being a "Party" to this Agreement and together comprising the "Parties" to the Agreement.

WHEREAS-

1. The institute/college is engaged in providing various education to students and generate wastes such as Desktops, Servers, Laptops, Printers, Keyboards, Mouse etc.. while carrying out different educational and office activities (hereinafter referred to as "E-waste" and more particularly specified in Annexure-1 hereto) and intends to dispose the said E-waste generated as per guidelines of the Central Pollution Control Board Ministry of Environment & Forests.
2. The Vendor has represented that it is a certified E-waste disposal agency
3. Upon the representations of the Vendor, the institute/college has agreed to appoint the Vendor and the Vendor has agreed to take charge of the said E-waste and collect, remove and dispose the same from all the Company's office located at all over India listed in Annexure II (hereinafter referred to as the "Premises") in the manner prescribed by the concerned authorities on the following terms and conditions agreed to between the parties.

AUDIT PROCESS REPORT

NOW THEREFORE, in consideration of the foregoing the Parties hereby agree as follows:

1. Scope of Services

- a. The institute/college agrees to provide E-waste and the Vendor agrees to take charge of the E-waste.
- b. The institute/college shall, at its sole discretion, send written intimation to the Vendor either at a specified interval of time or whenever specified quantity of E- waste is generated to collect the E-waste. The said E-waste shall be collected from the institute/college premises by the Vendor within 30 working days of intimation by the institute/college or any other period as required by the Company. It will be the responsibility of the Vendor to collect the same from the Premises and have the same transported from Premises of the institute/college to the Vendor's facility at its own costs & expenses in accordance with the guidelines and procedures prescribed by applicable authorities/laws and instructions of the institute/college.
- c. The Parties hereby agree that the ownership and risk of loss of the said E-waste will transfer from institute/college to Vendor upon delivery of the same to Vendor in the institute/college Premises.
- d. The Vendor hereby agrees that it shall pick material from institute/college Premises as per shared list by institute/college without any cost and shall ensure that proper documentation of the same is done as required under the applicable laws/rules/regulations
- e. The Vendor hereby undertakes that it shall follow proper government guideline and/or any other applicable guidelines in the process of disposing the E-waste
- f. Vendor represents and warrants that its licenses pertaining to E-waste disposal are currently valid and further undertakes to maintain the said licenses (and any other licenses/permissions that may from time to time be required to perform its obligations hereunder) valid throughout the term of this Agreement.
- g. The Vendor undertakes that its representative shall inspect the said E-waste before the said E-waste is collected from the institute/college Premises in order to verify the same.
- h. The Vendor hereby undertakes that it shall be responsibility of the Vendor for safe & secured transition of the E-waste collected from the college premises to the destination of the Vendor.
- i. The Vendor further undertakes that the responsibility of safe & secured storage, segregation, recycling, extraction, destruction, disposal of the E-waste will be that of the Vendor as per the guidelines of the Central and relevant State Pollution Control Board and other authorities and Vendor shall issue a disposal certificate to the college within 45 days from the date of collection of the E-waste from the premises of the college.

2. Term

The duration of the Agreement shall be 3 years from the date hereof, unless it is terminated earlier as hereinafter provided. On the expiration of the said period, the Agreement shall stand terminated and may be renewed by the Parties with mutual consent at any time during the pendency of the agreement or even after

3. Termination

If any Party hereto commits breach of any terms of this agreement the other party will be entitled to give notice to the other party to rectify the breach within 7 days of the receipt of notice and if breach is not then the party giving notice shall be entitled to terminate this Agreement

AUDIT PROCESS REPORT

4. Confidential Information

Vendor acknowledges and agrees that all it shall throughout the term of this Agreement and even thereafter ensure any information pertaining to the institute/college which is acquired by it in the course of acquiring the E-waste which is specified by the college as Confidential information (hereinafter "Confidential Information") is not to be used or permitted to be used in any manner incompatible or inconsistent with that authorized by the institute/college. It shall use each Confidential Information only for the purpose for which it was disclosed by the institute/college and shall not use or exploit such Confidential Information for its own benefit or the benefit of another; it shall protect the Confidential information against disclosure to third parties in the same manner and with the same degree of care, but not less than a reasonable degree of care, with which it protects its confidential information of similar importance, and limit disclosure of Confidential Information received under this Agreement to persons within its organization who have a need to know such Confidential Information in the course of the performance of their duties for the purpose of this Agreement and who are bound to protect the confidentiality of such Confidential Information under a written agreement having terms similar to the terms hereof.

IN WITNESS WHEREOF, this MoU shall be executed by the Parties through a duly authorised representative and shall be effective as at the date of last signing.

For Gondia Education Society's
J.M. Patel Arts, Commerce & Science College,
Bhandara

Signed:



Name : Dr. Vikas Dhomne

Designation: Principal **Principal**
J.M. Patel Arts, Commerce
& Science College, Bhandara

Date: 16.02.2023

Witness 1 :

Signature:



Name: Dr. Pravin Ghose

Date : 16.02.2023



For M/s. Ecolayer E-Waste Recycling
Mumbai.

Signed : M. Sajid

Name : Mohd Sajid

Designation: Dy. Manager

Date : 16.02.2023



Witness 2 : Prachin Sarmathe

Signature:

Name: Prachin Sarmathe

Date : 16.02.2023

**AUDIT PROCESS
REPORT**

E-Waste Collection Drive



11) World Sparrow Day Celebrations 20.03.2024.

Department of Botany (Green Galaxy Club) celebrated "WORLD SPARROW DAY" on Wednesday 20th March 2024. On the occasion of "World Sparrow Day -2024" in order to promote environment consciousness among students. The students were installed artificial nests and bird feeders on various trees of college campus. Students took responsibility for filling it up with water. With the onset of summer season, birds likely to suffer from dehydration are taken care by installing water pots in different locations of J. M. Patel college, Bhandara premises. This initiative by Botany department is in existence since last three years and saved many birds in the campus. In addition, this year artificial bird nests are also installed on the branches of trees for birds to escape from scorching heat and

AUDIT PROCESS REPORT

allow them to adopt to the new dwelling. Whole years, staff and students take care of nests, filled pots with water and done their responsibility very well.



12) Jal Jagruti Pledge on the Occasion of 'World Water Day Celebrations' -22.03.2024

On the occasion of "World Water Day" (March 22, 2024), J. M. Patel College Green Club and Jal Vibhag Bhandara jointly organized 'Jal Pratigya'. On this occasion Teaching, Non-teaching Staff and Students participated in Jal Pratigya Pledge.



AUDIT PROCESS REPORT

13) Poster Competition organised on the Occasion of 'World Water Day Celebrations' -

22.03.2024

On the occasion of "World Water Day" (March 22, 2024), J. M. Patel College Green Club organized Poster Competition. Total 84 students participated in the competition.



14) Speech Competition organised on the Occasion of 'World Water Day Celebrations' -

22.03.2024

On the occasion of "World Water Day" (March 22, 2024), J. M. Patel College Green Club organized Speech Competition on the topic 'Wainganga River Pollution and its counter measures'.



15) Water Audit carried out in the college on the Occasion of 'World Water Day Celebrations' -22.03.2024

On the occasion of "World Water Day" (March 22, 2024), J. M. Patel College Green Club organized various activities under the theme 'Water for Peace' as per the directions given

AUDIT PROCESS REPORT

by Government of Maharashtra. Under the campaign 'Saving Natural Resources and Water' the Green Club members (staff and students) conducted a survey of tap leakages in different Departments, washrooms and other locations in the college premises from March 21 to March 23, 2024. The leaky taps/pipes found in this survey were repaired and the importance of water conservation was explained to the students through this activity.



Leakages found in the Taps



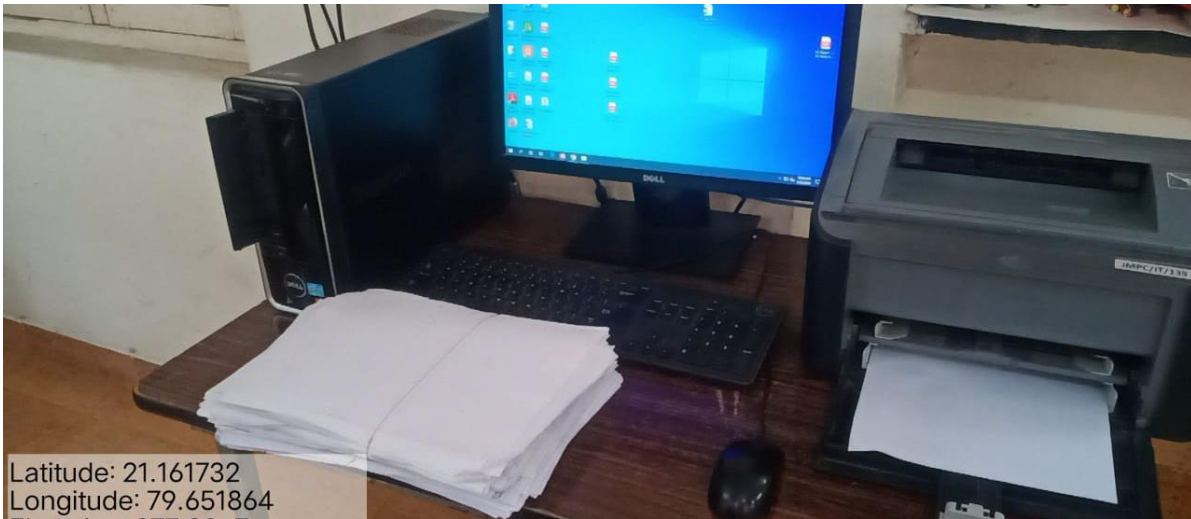
Repairing the Leakages in Taps



Display of No Honking Messages in front of the College Main Gate

AUDIT PROCESS REPORT

Reuse of one sided blank papers



LED Lights for better illumination



Environment Awareness Campaign



AUDIT PROCESS REPORT

★ ISO 14001 : 2015 certified

Environment Awareness Campaign - Save water, Save electricity, put off the lights when not in use, and Don't use plastic



Ro Maintenance Bills (2023-24)

Shubham Bature
OM SAI RO
S.B. ENTERPRISES
 Near Nutan Maharashtra Vidyalaya, Khat Road, Bhandara.
 Domestic and Commerce RO (Water Purifier & RO Parts)
 Sales & Service

No. 43 Date: 27/06/24
 M/s. J.M. Patel College Bhandara

No.	PARTICULARS	QTY.	RATE	AMOUNT
1	P.P. Cartridge	1	200	200
2	P.P. 2" Cartridge	10	250	2500
3	Service Charge			200
TOTAL				2900

For S.B. Enterprises

Shubham Bature
OM SAI RO
S.B. ENTERPRISES
 Near Nutan Maharashtra Vidyalaya, Khat Road, Bhandara.
 Domestic and Commerce RO (Water Purifier & RO Parts)
 Sales & Service

No. 45 Date: 12/07/24
 M/s. J.M. Patel College Bhandara

No.	PARTICULARS	QTY.	RATE	AMOUNT
1	Ro Membrane	2	500	1000
2	CTO Filter	1	600	600
3	GAC Filter	1	600	600
4	PP. Filter	1	200	200
5	FR-Flow	2	150	300
6	Service Charge			500
TOTAL				5800

For S.B. Enterprises

Shubham Bature
OM SAI RO
S.B. ENTERPRISES
 Near Nutan Maharashtra Vidyalaya, Khat Road, Bhandara.
 Domestic and Commerce RO (Water Purifier & RO Parts)
 Sales & Service

No. 47 Date: 24/07/24
 M/s. J.M. Patel College Bhandara

No.	PARTICULARS	QTY.	RATE	AMOUNT
1	Ro Pump	1	2500	2500
2	Service Charge			300
TOTAL				2800

For S.B. Enterprises

Nail Removed from the Tree Naming Board and Untreated Wood and Leaf Waste into and use them as Mulch on Garden Beds to Prevent Weed Growth



AUDIT PROCESS REPORT

Solar Plant



Roof Top Solar Plant 10 KW Installed in the Main Building (2023-24)



Water Meter

★ ISO 14001 : 2015 certified

AUDIT PROCESS REPORT

Biodiversity of the College Campus



AUDIT PROCESS REPORT

DIVERSITY OF ANIMALS IN J. M. PATEL COLLEGE CAMPUS		
DIVERSITY OF INVERTEBRATES (NON-CHORDATES)		
PHYLUM - ARTHROPODA		
Class	Order	Examples
Insecta	Odonata	1. <i>Burmagomphus chaukulensis</i> (Spiny Horntail)
	Orthoptera	1. <i>Oxya</i>
	Hemiptera	1. <i>Chrysocoris stollia</i> (Jewel Bug) 2. <i>Lopus decolour</i> (Plant Bug) 3. <i>Pentatoma rufipe</i> (Forest Sheild Bug)
	Lepidoptera	1. <i>Danaus plexippusi</i> (Monarch Butterfly) 2. <i>Scopula umbilicatai</i> (Swag - Lined Wave Moth) 3. <i>Spodoptera frugiperda</i> (Fall Army-Worm) 4. <i>Jononia lemonias</i>
	Diptera	1. <i>Eristalinus sepulchralis</i> (Hoverfly) 2. <i>Ochlerotatus</i>
	Hymenoptera	1. <i>Oecophylla longinoda</i> (Weaver Ant) 2. <i>Oecophylla smaragdina</i> (Asian Weaver Ant) 3. <i>Camponotus cinctellus</i> (Shiny Sugar Ant) 4. <i>Vespa orientalis</i>
	Coleoptera	1. <i>Alphitobius laevigatus</i> (Darkling Beetle) 2. <i>Brachidius</i>
PHYLUM - MOLLUSCA		
Class	Order	Example
Gastropoda	Systellommatophora	1. <i>Laevicaulis alte</i> (Brown/Black Slug)
DIVERSITY OF VERTEBRATES (CHORDATES)		
DIVERSITY OF CLASS REPTILIA, AVES (BIRDS) & MAMMALIA		
Class	Order	Examples
Reptilia	Squamata	1. <i>Bronchocela jubata</i>
Aves (Birds)	Pelecaniformes	1. <i>Bulbulcus ibis</i>
	Cuculiformes	1. <i>Eudynamys scolopaceus</i>
Mammalia	Rodentia	1. <i>Funambulus almarum</i>
	Carnivora	1. <i>Herpestes herpestes</i>

**AUDIT PROCESS
REPORT**

DIVERSITY OF PHYLUM ARTHROPODA	
CLASS INSECTA	
ORDER ODONATA	
SPIKY HORNTAIL Domain : Eukaryota Kingdom : Animalia Phylum : Arthropoda Class : Insecta Order : Odonata Infraorder : Anisoptera Family : Gomphidae Genus : <i>Burmagomphus</i> Species : <i>chaukulensis</i>	
ORDER ORTHOPTERA	
Phylum : Arthropoda Class : Insecta Order : Orthoptera Family : Acrididae Genus : <i>Oxya</i>	

**AUDIT PROCESS
REPORT**

ORDER HEMIPTERA	
JEWEL BUG Phylum : Arthropoda Class : Insecta Order : Hemiptera Family : Scutelleridae Genus : <i>Chrysocoris</i> Species : <i>stollii</i>	
PLANT BUG Phylum : Arthropoda Class : Insecta Order : Hemiptera Suborder : Heteroptera Family : Miridae Tribe : Cremnorrhinini Genus : <i>Lopus</i> Species : <i>decolor</i>	
FOREST SHIELD BUG Phylum : Arthropoda Class : Insecta Order : Hemiptera Suborder : Heteroptera Family : Pentatomidae Genus : <i>Pentatoma</i> Species : <i>rufipe</i>	 GPS Map Camera Bhandara, Maharashtra, India 5M62+QX2 Near, Civil Line, MSEB Colony, Bhandara, Maharashtra 441904, India Lat 21.161786° Long 79.652244° 16/10/23 09:39 AM GMT +05:30 Google

**AUDIT PROCESS
REPORT**

ORDER LEPIDOPTERA	
MONARCH BUTTERFLY (LARVA) Phylum : Arthropoda Class : Insecta Order : Lepidoptera Family : Nymphalidae Genus : <i>Danaus</i> Species : <i>plexippus</i>	 GPS Map Camera Bhandara, Maharashtra, India 5M62+JM6, Civil Line, MSEB Colony, Bhandara, Maharashtra 441904, India Lat 21.161397° Long 79.651778° 12/10/23 09:31 AM GMT +05:30
SWAG-LINED WAVE MOTTH Phylum : Arthropoda Class : Insecta Order : Lepidoptera Family : Geometridae Genus : <i>Scopula</i> Species : <i>umbilicata</i>	 GPS Map Camera Bhandara, Maharashtra, India Near, Civil Line, MSEB Colony, Bhandara, Maharashtra 441904, India Lat 21.161433° Long 79.652429° 16/10/23 09:40 AM GMT +05:30 Google
FALL ARMY-WORM Phylum : Arthropoda Class : Insecta Order : Lepidoptera Superfamily : Noctucidea Family : Noctuidae Genus : <i>Spodoptera</i> Species : <i>frugiperda</i>	

**AUDIT PROCESS
REPORT**

Phylum : Arthropoda
Class : Insecta
Order : Lepidoptera
Family : Nymphalidae
Genus : *Jononia*
Species : *lemonias*



ORDER DIPTERA

HOVERFLY

Phylum : Arthropoda
Class : Insecta
Order : Diptera
Family : Syrphidae
Subfamily : Eristalinae
Tribe : Eristalini
Genus : *Eristalinus*
Subgenus : *Eristalinus*
Species : *sepulchralis*



GPS Map Camera
भंडारा, महाराष्ट्र, भारत
5M73+C6H, ज. भु. पटेल महाविद्यालय मार्ग, MSEB कॉलनी,
भंडारा, महाराष्ट्र 441904, भारत
Lat 21.16362°
Long 79.653193°
12/10/23 10:19 AM GMT +05:30

AUDIT PROCESS REPORT

SHINY SUGAR ANT Phylum : Arthropoda Class : Insecta Order : Hymenoptera Family : Formicidae Subfamily : Formicinae Genus : <i>Camponotus</i> Species : <i>cinctellus</i>	
Phylum : Arthropoda Class : Insecta Order : Hymenoptera Family : Vespidae Genus : <i>Vespa</i> Species : <i>orientalis</i>	
ORDER COLEOPTERA	
DARKLING BEETLE Phylum : Arthropoda Class : Insecta Order : Coleoptera Infraorder : Cucujiformia Family : Tenebrionidae Genus : <i>Alphitobius</i> Species : <i>laevigatus</i>	 GPS Map Camera Bhandara, Maharashtra, India 5M62+JM6, Civil Line, MSEB Colony, Bhandara, Maharashtra 441904, India Lat 21.161443° Long 79.651698° 16/10/23 09:19 AM GMT +05:30

**AUDIT PROCESS
REPORT**

Phylum : Arthropoda Class : Insecta Order : Diptera Family : Culicidae Genus : <i>Ochlerotatus</i>	 Bhandara, Maharashtra, India shop no 1, near railway station, Civil Line, MSEB Colony, Bhandara, Maharashtra 441904, India Lat 21.161503° Long 79.652278° 18/10/23 09:41 AM GMT +05:30
ORDER HYMENOPTERA	
WEAVER ANT Phylum : Arthropoda Class : Insecta Order : Hymenoptera Family : Formicidae Subfamily : Formicinae Genus : <i>Oecophylla</i> Species : <i>longinoda</i>	 भंडारा, महाराष्ट्र, भारत 5M73+C6H, ज. नु. पटेल बहुविद्यालय मार्ग, IMSEB कॉलोनी, भंडारा, महाराष्ट्र 441904, भारत Lat 21.16362° Long 79.653193° 12/10/23 10:23 AM GMT +05:30
ASIAN WEAVER ANT Phylum : Arthropoda Class : Insecta Order : Hymenoptera Family : Formicidae Subfamily : Formicinae Genus : <i>Oecophylla</i> Species : <i>smaragdina</i>	 Bhandara, Maharashtra, India 5M82+JMB, Civil Line, MSEB Colony, Bhandara, Maharashtra 441904, India Lat 21.161448° Long 79.651603° 18/10/23 09:16 AM GMT +05:30

**AUDIT PROCESS
REPORT**

Phylum : Arthropoda
Class : Insecta
Order : Coleoptera
Family : Chrysomelidae
Genus : *Brachidius*



DIVERSITY OF PHYLUM MOLLUSCA

CLASS GASTROPODA

**TROPICAL LEATHERLEAF
(BROWN/BLACK SLUG)**

Domain : Eukaryota
Kingdom : Animalia
Phylum : Mollusca
Class : Gastropoda
Subclass : Heterobranchia
Order : Systellommatophora
Family : Veronicellidae
Genus : *Laevicaulis*
Species : *alte*



**AUDIT PROCESS
REPORT**

DIVERSITY OF CLASS REPTILIA, AVES (BIRDS) & MAMMALIA

DIVERSITY OF REPTILES

Domain : Eukaryota
 Kingdom : Animalia
 Phylum : Chordata
 Class : Reptilia
 Order : Squamata
 Family : Agamidae
 Genus : *Bronchocela*
 Species : *jubata*



DIVERSITY OF BIRDS

Phylum : Chordata
 Class : Aves
 Order : Pelecaniformes
 Family : Ardeidae
 Genus : *Bulbulcus*
 Species : *ibis*



Phylum : Chordata
 Class : Aves
 Order : Cuculiformes
 Family : Cuculidae
 Genus : *Eudynamys*
 Species : *scolopaceus*



**AUDIT PROCESS
REPORT**

DIVERSITY OF MAMMALS	
Phylum : Chordata Class : Mammalia Order : Rodentia Family : Sciuridae Genus : <i>Funambulus</i> Species : <i>almarum</i>	  Bhandara Maharashtra India 29°C 84°F 2023-10-01(Sun) 10:27(AM)
Phylum : Chordata Class : Mammalia Order : Carnivora Family : Herpestidae Genus : <i>Herpestes</i> Species : <i>herpestes</i>	

AUDIT PROCESS REPORT

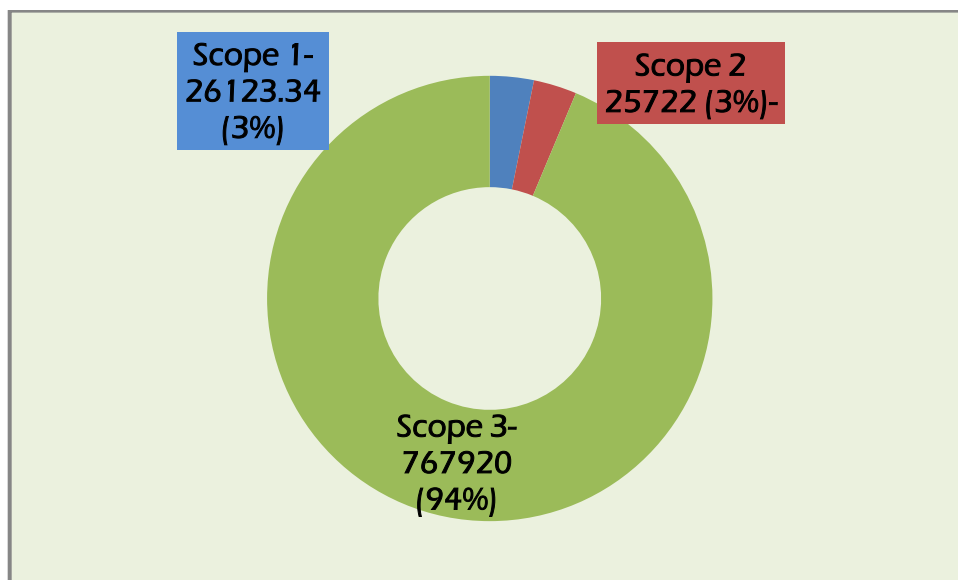
CARBON FOOT- PRINT

Criteria	Activities	Means of Greenhouse Gas Emission 2023-24	Output value in (Kg of CO ₂)
Scope 1	Consumption of fuel in Travel in in privately-owned vehicles and LPG	Four wheeler (Petrol)	9055.7
		Two wheelers (Petrol)	7084.8
		Generator (Diesel)	787.97
		Four wheeler (Diesel)	8300
		LPG	894.9
Scope 2	Electricity consumption	Electricity- (in KWh/Yr)	25777
Scope 3	Indirect emissions from goods and services used by the organisation, but not controlled by the organisation	Work-related travel using transport not controlled by the organisation, mainly air and rail.	00
		Purchase of paper	767920

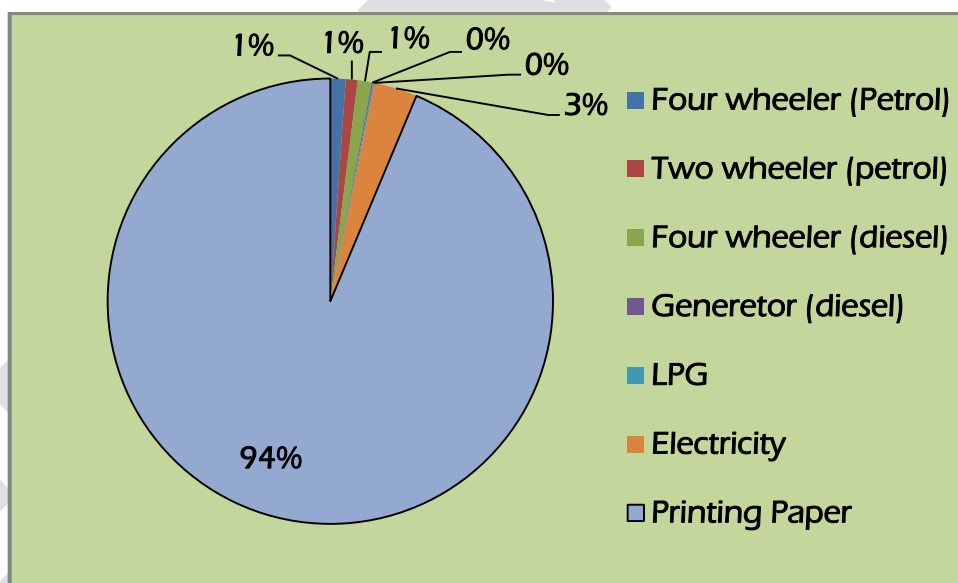
Table 1: J. M Patel College Carbon Footprint by Scope

AUDIT PROCESS REPORT

Graph 1: Carbon Footprint 2023 -24-distribution by Scope



Graph 2: Carbon Footprint 2023 -24- percentage distribution by activities



The final Carbon footprint in tons of CO₂ (tCO₂.) was calculated to be **819.77** tCO₂, which is less by **153.93** tons this year. J. M. Patel Arts, Commerce & Science College is found to take efforts to reduce carbon emission level by carrying “**living green**” practices into consideration which is creditable and highly appreciable.

AUDIT PROCESS REPORT

Overview

The Green Audit Committee's recommendations were designed to enhance environmental sustainability and operational efficiency within **J. M. Patel Arts, Commerce & Science College**. This summary outlines the completed recommendations, the actions taken, and the results achieved.

Recommendations and Actions Taken:

1. Energy Efficiency Improvements:

- **Recommendation:** Upgrade to energy-efficient lighting systems.
- **Action Taken:** Replaced all incandescent bulbs with LED lighting system. New solar panels are installed.
- **Outcome:** The positive outcome is expected in 2024-25.

2. Waste Reduction Initiatives:

- **Recommendation:** Implement a comprehensive recycling program and reduce single-use plastics.
- **Action Taken:** Introduced segregated waste bins for recycling and composting and efforts for the elimination of single-use plastic items are under progress.
- **Outcome:** Increased reusing of chargeable batteries and refilling of the print cartridges has been initiated. This has decreased the use of landfill.

3. Water Conservation Measures:

- **Recommendation:** Install water-saving fixtures and audit water usage.
- **Action Taken:** Fitted low-flow faucets and toilets and conducted a water usage audit to identify and address leaks.
- **Outcome:** Regular Maintenance of the water pipelines and taps had Reduced water consumption by 5 % and cut water-related expenses accordingly.

4. Employee Engagement and Training:

- **Recommendation:** Provide training on sustainability practices and encourage employee participation.

AUDIT PROCESS REPORT

- **Action Taken:** Conducted workshops and awareness campaigns on sustainability and established a green team for ongoing initiatives.
- **Outcome:** Enhanced employee awareness and participation in sustainability efforts, with 85 % of staff actively involved in green initiatives.

Next Steps: (For-2024-25)

- **Ongoing Monitoring:** Continue to track and evaluate the impact of implemented measures.
- **Future Goals:** Explore additional opportunities for sustainability improvements based on feedback and emerging best practices.

Conclusion: The implementation of the Green Audit Committee's recommendations has led to significant advancements in J. M. Patel Arts, Commerce & Science College's environmental performance. The implemented actions not only align with the commitment to sustainability but also contribute to long-term cost savings and operational efficiencies.

Dr. Nitisha Patankar
22.05.2024

Prepared by: Dr. Aparna Yadav
Green audit coordinator

Approved by: Dr. Nitisha Patankar
Director, ENVINZOA

