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AKHANJOREC

ENERGY AUDIT REPORT

(Session - 2018 to 2023)

Submitted by Miss. Pragya Kashyap (Guest Lecturer) **Dept.of Physics**

Govt. Veer Gend Singh College Pakhanjore, Dist. U.B.Kanker(C.G)

Submitted to Principal Govt. Veer Gend Singh College Pakhanjore, Dist. U.B.Kanker(C.G)



Preface

Data collection for energy audit of the Govt. Veer Gend Singh College, Pakhnjore campus was conceded by team for the period of 01 july 2018 to 30 june 2023. This audit was over sighted to inquire about convenience to progress the energy competence of the campus to drop of energy utilization while cultivate or humanizing comfort, health and safety were of prime anxiety this audit required to recognize the mainly energy proficient appliances. Besides several each day processes concerning common appliances have been provided which facilitate sinking the energy expenditure the "Energy Audit Survey" was completed by Department of Physics. All data collected from each classroom, laboratory, every room. The work is completed by considering how much tubelights, fan, electronic instruments etc. in each room, how much was participation of each component in total electricity consumption.



Energy Audit Report Of Govt. Veer Gend Singh College Pakhanjore.

Introduction

A Nation is training to advance in quantity and quality to the spread of education among the common India and development of their intelligence. In India the entire field of education and other fields of intelligent activities had been monopolized by a handful of men before independence, but today we are marching towards the desirable status of a developed nation with fast strides, but the development should be a sustained one. For achieving such an interminable development energy management is essential as far as concerning electricity crisis, we are facing lack of electricity during office work. So institutional management is taking design regarding production of electricity and saving electricity for eco-social aspect.

Energy requirement of India is growing and incomplete domestic fossil fuel treasury. The country has motivated strategy to enlarge its renewable energy resources and policy to establish the nuclear power plants. India increases the involve of nuclear power to largely electrical energy development facility from 4.2% to 9%. India's industrial demand accounted for 35% of electrical power requirement, domestic household use accounted for 28%, agriculture 21%, commercial 9%, and public lighting and other miscellaneous applications accounted for the rest energy conservation means reduction in energy consumotion without making any sacrifice of quantity or quality. Successful energy management program begins with energy conservation; it will lead to adequate rating of equipment's using high efficiency equipment and change of habits which causes enormous wastages of energy, by observing all these study lack of electricity and huge electricity demands. It is necessary to plan to being self-sufficient in electricity requirement.

In the present study, a college electricity, audit has been done. in this study considering pratical laboratory, instruments, fans, computers, etc. are considered in this study, we have studied the total budget of the college, the total economics investment of the college on electricity, and the total generated electricity from the solar wind hybrid electricity generation unit. Also we have studied the total saving of electricity, money and the requirement of energy, also it is studied that exact contribution of a bulb ,fans, computers, instruments, etc in the total requirement of electricity, we studied all these mentioned things by collecting exact data from the survey.



Acknowledgement

The Head of department Chemistry and Botany Govt. Veer Gend Singh College Pakhanjore is very much thankful to Principal D.L. Badhai, IQAC coordinator NAAC for motivating us for **Green Audit** and **Energy Audit**.



Power Consumption Of Electricity Board

2018-	2019	20	19-20	20	2020-20)21	2021-20	22	2022-20	23
Months	Unite	Mont	18	Unite	Months	Unite	Months	Unite	Months	Unite
				425	T. 1	140	July	61	July	80
July	248	July		437	July	114	August	113	August	112
August	312	Augus		437	August	133	September	175	September	100
Septembe		Septer		101	September	121	October	40	October	288
October	280	Octob		400	October	45	November	4	Novemmber	150
Novembe	er 110	Nove	NGA COSTUME	237	November	115	December	101	December	98
Decembe	r 400	Decer	000000000000000000000000000000000000000	129	December	33	January	31	January	34
January	0	Janua		173	January	1		128	Febuary	176
Febuary	0	Febua	ıry	256	Febuary	65	Febuary	176	Marc	1435
March	246	Marc	n	0	March	88	March	200	April	939
April	525	April		0	April	0	April	181	May	100
May	515	May		0	May	0	May	95	June	1022
June	295	June		731	June	180	June	93	June	1022
Total	2931	Tota	Ĺ	2901	Total	1034	Total	1305	Total	4434
SN	Year	1	Tota	al cons	ımption un	ite (y)		consum	ption unite	(m)
1	2018-20	19	293				244.25			
2	2019-20		290	1			241.75			
3	2020-20		1034				86.16			
	2021-20		130				108.75			
4			443				369.5			
5	2022-20	23	443	7			307.3			
Total			126	05			1050.41			



Experimental and data collection:

All required data is collected by Departments of Physics. In building, in every room, how much fans, tubelights, computer, instruments etc will these is measured. According to surely following data is collected.

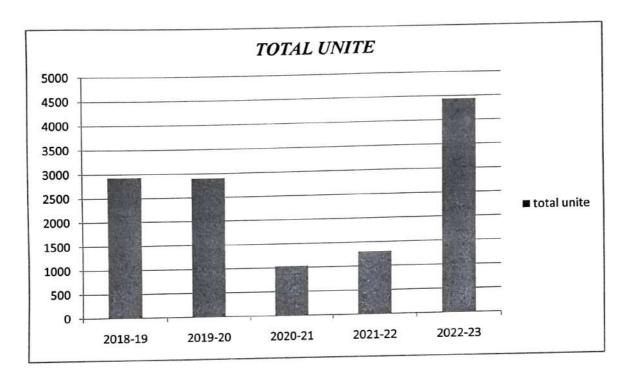
Total power requirement of various equipment

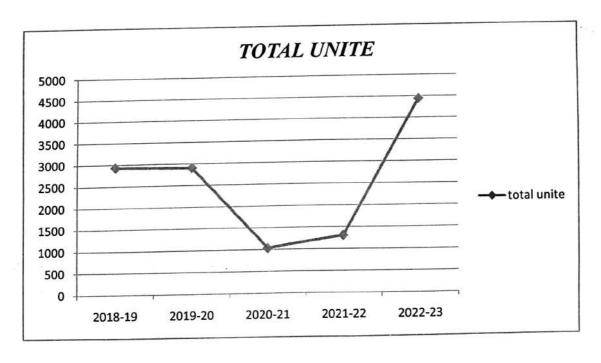
Dept./inst.	Fan	Tubelight	LED Bulb	Computers	Printer	Projector	Borewell	Other
								04
Principal Offi.	03	04	04	01	01			
Office 1	02	01	05	02	02			
Office 2	02	04	04	02	02			
Class Room	46	26	51					02
Chem.Lab/Dept	04	03	05					02
Zoology Lab./Dept	04	04	04					03
Botany Lab.Dept	04	02	06					- 05
Igac Room	02	02	02		02	01		02
Exam Control Room/Smart	04	04	04	03	03	01		01
Room/Comp Lab Geography	02	01	03					
Dept/Lab Physics Lab/Dept/Maths Dept	04	03	05					26
Staff Room	02	04				01		+
Seminar Room	10					0.5001		
Library	04				01			
NSS Room	01							
SPORTS Room	02						<u> </u>	
Wash Room	04					_		
Solar Room	01						1	
Girls Comm. Room			02	!				1 02
Lobby		04	39)			0	1 02
Outside	 		- 07	7				
Store Room		03	3			- 0	2	1
Total Quantity	103			5 0	7 0	7 03	2	1
Total Quantity Total Power Consumption In Month (Kwh/Month)	1297.8			25	2 31	5 0	6 12	155.

Total power requirement of all instrument =3415.5 KW in month



TOTAL UNITE







Conclusion:

In conclusion, data generated in energy audits are useful for understanding the Energy distribution and utilization of college, The college needs maximum of 3415.5 kwh/month of electricity. In other words, college needs a 284.62 units/month.

Recommendation:

- 1) Replace all CFL tube lights using an LED bulb, to save more power.
- 2) We instruct the students to switch off lights and fan after the class. In this manner we save sufficient electricity.

<u>Note:</u> In Academic Sessions 2021-22 to 2022-23 our electricity consumption increases because we supply our electricity to newly constructed hostel building in college campus.

<u>Achievment:</u> In our institution we have solar power which we use as a renewable source of energy regularly to save the electricity.

Results and discussion:

As far as the energy audit, the electricity audit is the main concern regarding the educational institutions. We have collected data by considering the tubelight, fan, computer, printer and instruments. The total required energy is 3415.5kw.

Verified by

प्राचीयाय Govt. Veer <u>Gend Singh College Pakhanjore</u> स. वीर गुंद सिंह महाविद्यालय प्रवासूर

जिला - उ.ब. कांकेर (छ.गे.)

GOVT. VEER GEND SINGH COLLEGE PAKHANJORE, DISTT.- U.B. KANKER (C.G.)



GREEN AUDIT IN COLLEGE CAMPUS

(JANUARY 2018 TO JUNE 2023)

Auditing Agency (रशिन कुमार) विभागाध्यक्ष Departmention Botany शासकीय बीर गेंद्र सिंह मुन्निक्ला बिला Govt . V श्रितीजूर, जिला - उ. व स्कांकर Pakhanjore, Distt.-U.B.Kanker (C.G.)

Submitted to

Principal
Govt. Veer Gend Singh College
Pakhanjore, Dist. U.B.Kanker(C.G)

PLANTS IN COLLEGE CAMPUS

S/N Common nam		Botanical name	Family	No. of plant	
L	Mango tree	Mangifera indica	Anacardiaceae	10	
2	False ashoka	Polyalthiya longifolia	Annonaceae	13	
3	Neem	Azadirachta indica	Meliaceae	11	
4	Seetaphal	Annona squamosa	Annonaceae	15	
* 5	Peepal	Ficus religiosa	Moraceae	05	
<u> </u>	Tendu	Diospyros melanoxylon	Ebnaceae	36	
7	Ber	Ziziphus mauritiana	Rhamnaceae	07	
8 8	Jamun	Syzygium cumini	Myrtaceae	05	
9	Kaju	Anacardium occidentale	Anacardiaceae	17	
10	Kadamb	Neolamarckia cadamba	Rubiaceae	12	
11	Karanj	Pongamia pinnata	Fabaceae	35	
12	Palash	Butea monosperma	fabaceae	22	
13	Kattha	Acacia catechu	Mimosaceae	01	
14	Gulmohar	Delonix regia	Fabaceae	13	
15	Croton	Codiaeum variegatum	Euphorbiaceae	19	
16	Oleander	Nerium Oleander	Apocynaceae	12	
17	Satavari	Asparagus recemosus	Asparagaceae	05	
18	Crape jasmin	Tebernaemontana divaricata	Apocynaceae	08	
19	Sadabahar	Catharanthus roseus	Apocynaceae	26	
20	Biota plant	Platycladus orientalis	Cupressaceae	13	
21	Rose	Rosa canino	Rosaeae	16	
22	Kunth	Argenia indica	Liliaceae	03	
23	Aok	Calotropis procera	Asclepiadaceae	15	
24	Datura	Solanum nigram	Solenaceae	17	
25	Harra	Terminelia chebula	Combretaceae	05	
26	Khajur	Phoenix dectylifera	Arecaceae	07	
27	Sago palm	Cycus revoluta	Cycadaceae	10	
28	Mahua tree	Madhuca longifolia	Sapotaceae	05	
29	Taad	Borassus flabellifera	Palmaceae	03	
30	Sagon tree	Tectona grandis	Lamiaceae	09	

Different

Govt. Veer Gend Singh College Pakhanjore

Distt- U.B. Kanker (C.G.)

-: Green Audit :-

Govt. Veer Gend Singh College is situated in district Kanker, Pakhanjore near the Maharashtra State. In the college campus sufficient amount of different plant species are growing in the form of trees, shrubs, climber, and herbs. Plants like Anacardium, Mango, Rose, Oleander, Ashoka etc, are present in the campus of the college.

In the total area of the college out of 30% area are covered by plants. Many students get enough shade for sitting and studying and discussion. The abundance of plant in this campus, pure air flows in the environment of college and students get pure air everywhere in the college.

In our college campus all the plants have been identified. Due to proper maintenance of plants, the college campus looks beautiful and clean respectively. The study rooms of college adequate numbers of window and doors have been stalled. Thereby no constant need to light the electric bulb and run the fan, there are solar panel installed for excessive saving power consumption. There are various and different varieties of ornamental, medicinal, flowering and pure oxygen producing plants have been planted in the department of the botany and NSS unit of the college. Shade of the plants has been point of view of the college which control temperature and provide coolness. Various type of plants planted in the college have been attract to different species of birds, butterfly, and beetles get there shelterand foods.

Different types of plants in our college campus are as follows:

Mango Tree

Common Name Mango Tree **Botanical Name** Mangifera indica Anacardiaceae **Family**

There are 10 Mango tree in our college campus. Mango tree grow slowly but eventually reach over 30 ft in height. Mango tree has long been used its fruit as a food sources and also useful for traditional medicine system.

2. False Ashoka

Common Name **Botanical Name**

False Ashoka Polyalthiya longifolia

Family

Annonaceae



There are 13 Ashoka tree in our college campus. It is growing over 25 ft in height and is commonly planted as a ornamental plant and its effectiveness for noise poisoning. It exhibits symmetrical pyramidal growth with pendulous branches and long long narrow lanceolate leaves with undulate margins.

3. Neem

Common Name

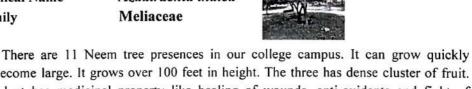
Neem

Botanical Name

Azadirachta indica

Family

Meliaceae



and become large. It grows over 100 feet in height. The three has dense cluster of fruit. The plant has medicinal property like healing of wounds, anti-oxidants and fight of diseases.

Seetaphal

Common Name

Seetaphal

Botanical Name

Annona squamosa

Family

Annonaceae

In our college campus 15 Seetaphal tree occur. It is growing over 15-20 ft in height. The tree has produced sweet edible fruits. It is rich in carbohydrates and protein. It helps in keeping the heart healthy. It is rich in phytochemicals and fight against diseases

Peepal

Common Name

Botanical Name

Family

Peepal

Ficus religiosa

Moraceae

There are 05 peepal trees in our college campus. It is large, tall and branched tree; they are growing fairly quickly over 120ft height and become large. It is inspirable part of Indian culture and holy and folklore.

6. Tendu

Common Name

Tendu

Botanical Name

Diospyros melanoxylon

Family

Ebnaceae

In our college campus about 36 tendu tree are present. It is grow fairly quickly and grow over 15 to 20 meter in height. Fruit of the tree are sweet and edible and rich of carbohydrates and protein.

7. Ber

Common Name

Ber

Botanical Name

Ziziphus mauritiana

Family

Rhamnaceae

There is 07 ber plant in our college campus. It is growing over 5 to 7 m in height and fruit of the plants are sweet and flasy. Fruits are good source of vitamin C, carbohydrates and proteins. They are also has a medicinal property.

Jamun

Common Name

Jamun

Botanical Name

Syzygium cumini

Family

Myrtaceae

There are 05 Jamun tee present in our college campus. It is large woody tree over 60 to 80 feet in height and grows quickly. They are commercial useful plant and fruit of the plants has edible and medicinal valuable plants. It is rich of Phytochemicals and Antioxidant activity.

9. Kaju

Common Name

Kaju

Botanical Name

Anacardium occidentale

Family

Anacardiaceae



In over college campus 17 kaju plants occur. They are grow up to 5 to 10 meter in height. The plants has commercial useful and fruit and nuts of the plants are edible. They are medicinal plant and presence of phytochemicals has usful for treatment of diseases.

10. Kadamb

Common Name

Kadamb

Botanical Name

Neolamarckia cadamba

Family

Rubiaceae

There are at least 12 kadamb trees present in our college campus. They are fairly quickly growing tree over 50 to 70 feet in hight. The fruit of plants are also edible. They are containing phytochemicals and antioxidants property of plants.

11. Karanj

Common Name

Karanj

Botanical Name

Pongamia pinnata

Family

Fabaceae

In our college campus 35 karaj plants present. The plant body has grow over 6 to 8 meter in height. They are fairly growing deciduous and branched plant. It filters air pollutants and toxins furthermore improve the air quality.

12. Palash

Common Name

Palash

Botanical Name

Butea monosperma

Family

Fabaceae

There are 22 palash plants in our college campus. It can grow up to 5 to 8 meter in height and beautiful red color petal in flower. Its leaves are broad, margins and reticulate venation. The flower contain color are useful for staining industry

13. Kattha

Common Name

Kattha

Botanical Name

Acacia catechu

Family

Mimosaceae

There 1 kattha plants in our college campus. They can grow up to 20 to 30 feet in height. Its leaves are small and branched woody tree and produce red color flower with bean shaped fruit.

14. Gulmohar

Common Name **Botanical Name** Family

Gulmohar Delonix regia Fabaceae



There are 13 gulmohar trees present in our college campus. It can grow up to 30 to 50 feet in height. It is deciduous evergreen plant. Leaves of plants small and branched tree nestled boat shaped bracts.

15. Croton

Common Name

Croton

Botanical Name Family

Codiaeum variegatum

Euphorbiaceae

In our campus of the college have 19 croton plants present. They are growing up to 3 to 10 feet in hight. They are ornamental plants and the leaves of plants are variegated and reticulated.

16. Oleander

Common Name **Botanical Name**

Oleander Nerium Oleander

Family

Apocynaceae

There are 12 oleander plant occur in our college campus. They are fairly growing plant and grow up to 3 to 5 feet in height. The plants has purple color flower and they are also ornamental plants.

17. Satavari

Common Name

Satavar

Botanical Name

Asparagus racemosus

Family

Apocynaceae

There are in college campus 05 satavari plants present. They are growing up to 1 to 3 feet in height. It is used as a medicinal plant because they contain substances that useful for treatment of diseases and they maintain blood and sugar level in our body.

18. Crape jasmine

Common Name

Crape jasmine

Botanical Name

Tebernaemontana divaricata

Family

Apocynaceae



There is 8 crape jasmine plant in our college campus. The plants are growing up to 4 to 8 feet in height and woody perennial plant. They have beautiful white flower used to spiritual and Indian aspect as a god.

19. Sadabahar

Common Name Sadabahar

Botanical Name Catharanthus roseus

Family Apocynaceae

In our college campus 26 sadabahar plants are present. They are growing up to 1 to 3 feet in height. It is a beautiful purple flower producing herbaceous perennial plant also known as purple wrinkle. The plants have rich alkaloids that are useful for fight of cancer and diabetic.

20. Biota plant

Common Name Biota plant

Botanical Name Platycladus orientalis

Family Cupressaceae

The campus of the college has 13 biota plant. They are growing up to 3 to 5 meter in height. It is a beautiful small leaves and woody perennial ornamental plant. They have been commercial plant used to decoration of campus or gardens.

21. Rose

Common Name Rose

Botanical Name Rosa canino Family Rosaeae

There are 16 rose plants in our college campus. They are grow up to 2 to 4 meter in height. It is a woody perennial flowering shrub plant, it is also known as best flowering ornamental plant grow for specially commercial perfumery flower in the garden.

22. Kunth

Common Name Kunth

Botanical Name Argenia indica

Family Liliaceae

In our college have 03 kunth plants in the campus. They are annual herbaceous plant grow up to 1 feet in height. It is a bulbous stem under the ground and narrow parallel leaf venation. The plant has been also antimicrobial property and phytochemicals contain.

23. Aok

Common Name

Aok

Botanical Name

Calotropis procera

Family

Asclepiadaceae

There are 15 aok plants in our college campus. They grow up to 8 feet in height and perennial shrub plant. It is also known as milk weed plant with white flower. The plant has been containing latex that is use for treatment of diseases.

24. Datura

Common Name

Datura

Botanical Name

Solanum nigram

Family

Solenaceae

In our campus of the college 17 datura plats occur. They are perennial shrub like plant grows up to 6 to 8 feet in height. It is produce round shape fruit and purple white flower with long anther.

25. Harra

Common Name

Harra

Botanical Name

Terminelia chebula

Family

Combretaceae

In our college 05 harra tree occur in the campus. It is perennial woody tree grow up to 60 to 80 feet in height. They are medicinal valuable plant and seed of the plant contain phytochemicals that is useful for fight of diseases.

26. Khajur

Common Name

Khajur

Botanical Name

Phoenix dectylifera

Family

Arecaceae

There is 07 khajur tree in our college campus. They are woody perennial tree growing up to 30 to 50 feet in height. It is long needle shape leaves with sweet edible fruit producing trunk like tree.

27. Sago palm

Common Name Botanical Name Sago palm Cycus revoluta

Family

Cycadaceae



In our college campus 10 sago palm plant finds. It can grow up to 3 to 5 ft in height. In is a naked seed gymnosperms plant with large and needle shaped leaves. They can grow in arid place and ornamental plant for gardens.

28. Mahua tree

Common Name Botanical Name Family Mahua Tree *Madhuca longifolia* Sapotaceae



In our college 05 mahua tree occur in the campus. They are perennial woody tree, growing up to 90 to 100 feet in height. They are tropical deciduous branched tree with edible frits. The fruits of the tree are good source of alcohol. They are commercial alcohol producing plats. In tribes people also use as a beverages.

29. Taad

Common Name

Taad

Botanical Name

Borassus flabellifera

Family

Palmaceae

There is 03 taad tree in college campus. It is quickly growing tree grow up to 120 feet in height. They are palm like trunk plant with needle shape leaves and flashy round gel like fruits. The latex of the plants contains alcohol and good source of beverages.

30. Sagon tree

Common Name Botanical Name

Family

Sagon tree
Tectona grandis
Lamiaceae

There are 09 sagon trees in our college campus. They are fairly quickly growing tree grow up to 30 to 35 meter in height. It is perennial wood tree with branched deciduous leaves fall in spring season. They are timber yielding commercial plants.

31 Chhui Mui

Common Name

Chhui Mui (Touch me not)

Botanical Name Family Mimosa pudica Mimosaceae

In our college campus 55 chhui mui plants are presence. They are small leaves with banched herb plants grow up to 1 cm to 10 cm in hieght. They are medicinal plants uses treatments of various diseases and also found antimicrobial and anti-oxidents properties.

1. Bahera

Common Name

Bahera

Botanical Name

Terminelia chebula

Family

Combretaceae

There are 7 Bahera plants in our college campus. They are quickly growing perennial woody branched tree. It is grow up to 60 feet to 120 feet in hieghts. It is tropical evergreen plants, different parts of plants like seed, bark and leaves uses as a teatments of diseases in there local tribes. Plants contain various phytochemicals alkaloids, terpenoids, glycosoids etc.

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