



AKHANJOREIC

COVERN GEND SINCH

(Session - 2018 to 2023)

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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.



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<u>Acknowledgement</u>

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	2019-2020 2020-2021			2021-2022		2022-2023		
Months	1	Unite	Month	IS	Unite	Months	Unite	Months	Unite	Months	Unite
							140	Iuly	61	July	80
July		248	July		437	July	140	August	113	August	112
August		312	Augus	t	437	August	114	September	175	September	100
Septemb	ber	0	Septen	nber	101	September	133	October	40	October	288
October		280	Octobe	er	400	October	121	November	4	Novemmber	150
Novemb	ber	110	Noven	nber	237	November	43	December	101	December	98
Decemb	ber	400	Decen	nber	129	December	115	December	31	Ianuary	34
January		0	Januar	У	173	January	33	January	128	Febuary	176
Febuary	/	0	Febua	ry	256	Febuary	65	Febuary	120	Marc	1435
March		246	March	1	0	March	88	March	200	April	939
April		525	April		0	April	0	April	101	May	0
May		515	May		0	May	0	May	181	Iviay	1022
June		295	June		731	June	180	June	95	Julie	1022
Total		2931	Total		2901	Total	1034	Total	1305	Total	4434
SN	Ye	ar	1	Tota	al consu	umption un	ite (y)	Average	consum	ption unite	(m)
1	20	2018-2019 2931						244.25			
2	2019-2020 290						241.75				
2	2020-2021 103			1			86.16				
5	$\frac{5}{4}$ 2020-2021 10		1304	1305			108.75				
4	+ 2021-2022 15		1/2	1	369.5						
2	5 2022-2023 4		4434	1			507.5				
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.

Dept./inst.	Fan	Tubelight	LED Bulb	Computers	Printer	Projector	Boreweil	Other
								04
Principal Offi.	03	04	04	01	01			
Office 1	02	01	05	01	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					02
		02	06					03
Botany Lab.Dept	04	02	00					
Iqac Room	02	02	02	03	03	01		02
Exam Control	04	04	04					
Room/Smart								
Room/Comp Lab	00	01	03					01
Geography	02	01	05					
Dept/Lab	04	03	05					26
Physics	04	05						
Lab/Dept/Maths								
Dept	02	04	02					
Staff Room	10	06	06			01		
Seminar Room	04	04	05	01	01			-
Library	01	02	02					-
NSS Room	07	02	02					_
SPORTS Room	04	15	02					
Wash Room	01	04	02					
Solar Room	01	02	02					
Girls Comm. Room	02							
	-	04	1 39)			0	01 02
Lobby			- 07	7				_
Outside		03	3					
Store Room	103	100	15	5 0	7 0	7 0	2 (<u></u>
Total Quantity	103	100				1.02		155
Total Power Consumption In Month (Kwh/Month)	1297.8	3 990	279	9 25	31	5 0	12	20 155.7
								1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

Total power requirement of various equipment

Othon

Total power requirement of all instrument =3415.5 KW in month







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 hanjore. जिला - उ.ब. कॉकेर (छ.ग

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



GREEN AUDIT IN COLLEGE CAMPUS

(JANUARY 2018 TO JUNE 2023)

Auditing Agency (राशन कुमार) विभागाध्यक्ष Departmention Hotany शासकीय वीर गेंद्र सिंह महाविद्याला हु Govt . V क्यांजर, जिला-उ. व. काकर 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 name	Botanical name	Family	No. of
1-				plant
	Mango tree	Mangifera indica	Anacardiaceae	10
)	False ashoka	Polvalthiya longifolia	Annonaceae	13
	Neem	Azadirachta indica	Meliaceae	11
	Seetanhal	Annona sauamosa	Annonaceae	15
	Peenal	Ficus reliaiosa	Moraceae	05
	Tendu	Diospyros melanoxylon	Ebnaceae	36
	Ber	Zizinhus mauritiana	Rhamnaceae	07
	lamun	Syzyaium cumini	Myrtaceae	05
-	Kaiu	Angcardium occidentale	Anacardiaceae	17
0	Kadamh	Neolamarckia cadamba	Rubiaceae	12
1	Karani	Pongamia pinnata	Fabaceae	35
2	Palash	Butea monosperma	fabaceae	22
2	Kattha	Acacia catechu	Mimosaceae	01
	Gulmohar	Delonix regia	Fabaceae	13
	Croton	Codiagum varigaatum	Euphorbiaceae	19
16	Oloandor	Nerium Oleander	Anocynaceae	12
10	Satavari	Asparagus recemosus	Asparagaceae	05
10	Crano jasmin	Teherngemontang	Anocynaceae	08
10	ci ape jasinin	divaricata	pooj	
19	Sadahahar	Catharanthus roseus	Apocynaceae	26
20	Biota nlant	Platycladus orientalis	Cupressaceae	13
20	Rose	Rosa canino	Rosaeae	16
22	Kunth	Araenia 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

Govt. Veer Gend Singh College Pakhanjore

Different

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 shelter and foods.

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

1. Mango Tree

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



There are 10 Mango tree in our college campus. Mango tree grow slowly but can 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 Family False Ashoka *Polyalthiya longifolia* 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



There are 11 Neem tree presences in our college campus. It can grow quickly 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.

4. Seetaphal

Common Name	
Botanical Name	
Family	

Seetaphal Annona squamosa 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

5. Peepal

Common Name Botanical Name Family Peepal *Ficus religiosa* Moraceae



There are 05 peepal trees in our college campus. It is large, tall and woody 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 NameTenduBotanical NameDiospyros melanoxylonFamilyEbnaceae



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 Botanical Name Family Ber Ziziphus mauritiana 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.

8. 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 Botanical Name Family Kaju *Anacardium occidentale* 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 Botanical Name Family Kadamb *Neolamarckia cadamba* 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 Botanical Name Family Palash *Butea monosperma* 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 Botanical Name Family *Kattha* Acacia catechu 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 Botanical Name Family

ame Croton ame *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 Family Oleander *Nerium Oleander* 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 NameSatavarBotanical NameAsparagus racemosusFamilyApocynaceae

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 Botanical Name Family Crape jasmine Tebernaemontana divaricata 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 Botanical Name Family Sadabahar Catharanthus roseus 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 Botanical Name Family Aok Calotropis procera 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 Botanical Name Family Datura *Solanum nigram* 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 Botanical Name Family Harra *Terminelia chebula* 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 Botanical Name Family Khajur *Phoenix dectylifera* 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 Family Sago palm Cycus revoluta 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	Sagon tree		
Botanical Name	Tectona grandis		
Family	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 Botanical Name Family Chhui Mui (Touch me not) *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

Bahera

Botanical Name Family

Common Name

Terminelia chebula 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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