


Energy Audit Report (2020-2021)



AMRITSAR GROUP OF COLLEGES

Autonomous status conferred by UGC under UGC act-1956, (2f), NAAC-A Grade,
(Formerly Known as Amritsar College of Engineering & Technology | Amritsar Pharmacy College)


Principal,
Amritsar Group of Colleges,
AMRITSAR.

Preface

The Energy Audit Report of Amritsar Group Of Colleges was conceded for the period of 1 April 2020 to 31 March 2021. This audit was done mainly to improve the energy profile in the campus. The main focus during this audit is to recognize energy proficient appliances and how we improve energy profile in the campus. The energy audit survey was completed by Dept. Of Electrical Engineering. All data collected from campus at distinguish load terminals i.e. classroom, laboratory, hostel, etc. The work is completed by considering, how much load is connected in the campus and corresponding up to what extent the energy saving is possible without disturbing the quality and quantity of voltage profile.

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Energy Audit Report of Amritsar Group Of Colleges, Amritsar

Introduction

The world is focusing on development of new technologies in each area to improve profile. In the country, entire activities had been performed by the human being for better future. Today we are emerging towards the desirable status of a developed nation with fast strides. For achieving optimum platform energy management is necessary. As we are aware about electricity crisis and its blackouts, we are facing lack of electricity in the country during current scenario. So, College management is taking an initiative regarding production of electricity and its saving.

Energy conservation means reduction in energy consumption without making any sacrifice of quantity or quality. It will result to use energy efficient equipment properly and change basic fundamental of life for energy wastage. By observing all key points of electricity and its demand, it is necessary to plan a life style in well manner for energy saving and its consumption.

In the present study, college electricity audit has been done. In the study, practical laboratories, instrument, Fans, Air conditioners, Computers, each small to large appliances are considered. During this, total economic investment of college on the electricity and total generation of electricity from the solar has been studied. We have done all these mentioned things by collecting exact data from survey.

1.1 Energy Consumption and Saving of Year 2020-2021

The annual energy consumption of Amritsar Group Of Colleges is as follows:

Year	Energy Consumption (KWH)	Energy Saving (KWH)	%age saving
2020-2021	237	36	15.2

Further, the following efforts has been done for energy saving and to improve its profile in the campus.

1. Replace 3 star rated equipment with 5 star rated equipment in the remaining portion of campus.
2. Installation of solar lightening in the campus
3. Rewinding of few machines according to requirement.

1.2 Graphically Representation of Energy Consumption and Saving:-

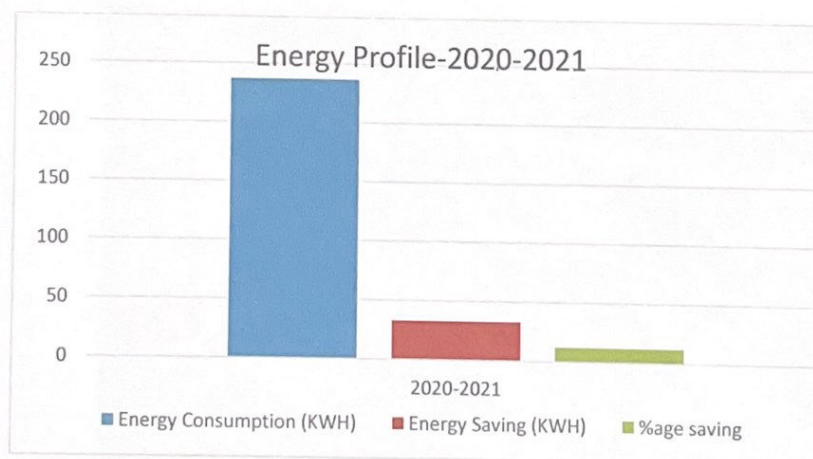


Fig- Energy Consumption and its saving in KWH and percentage

1.3 Detail of electricity production by using Renewable Energy Source

In the campus, solar plant was installed in the year 2019. The following power requirements has been fulfilled and as follows-

Power requirement met	Total Power Requirement	Renewable energy source	Renewable energy generated and used
410 KW	525000 unit	Solar Photovoltaic	Generated- 319000 unit

1.4 Photograph of Renewable Energy Sources-

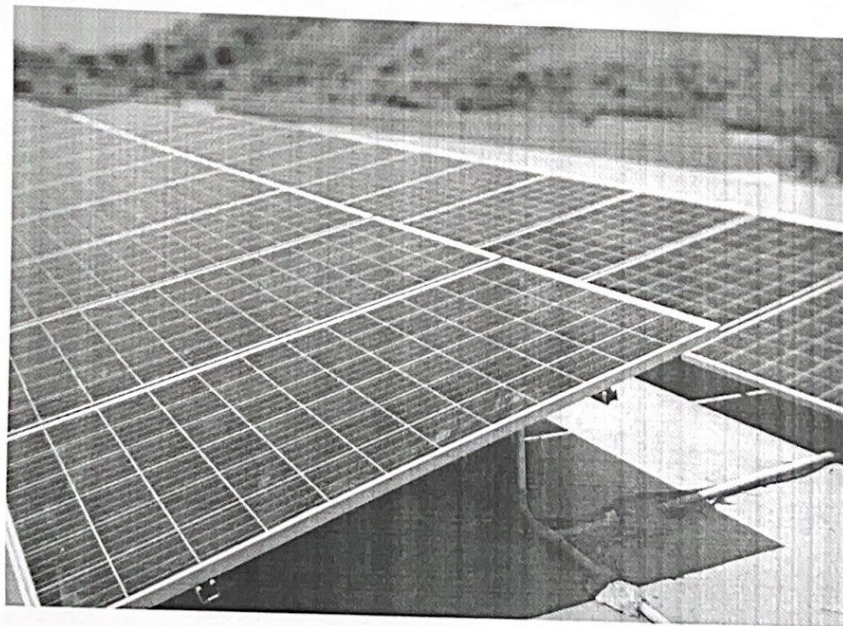


Fig- Solar Energy Generation System

Conclusion

It is concluded that the data obtained during energy saving is useful for energy saving and its analysis for improvement voltage profile in the college. The college needs maximum 525000 units of electricity annually in the current scenario. Further, apart of energy is consumed and remaining has been supplied to the grid by renewable energy source. The power met by solar plant installed in the campus is 410 KW. Also, the percentage saving profile for energy consumption was 36 KWH and percentage saving of 15.2 % from the year 2020-2021.

Report Certified and Verified By

Internal Members

Er. Gurjeet Singh (Head Department of EE)

Er. Ajaypal Singh (Assistant Professor of EE)

Sh. Anil Wadhwa (Admin Officer)

External Member

Er. Harinder Singh (Retd. SDO Majitha 1)

Principal,
Amritsar Group of Colleges.
AMRITSAR,

Energy Audit Report (2019-2020)



AMRITSAR COLLEGE OF ENGG. & TECHNOLOGY

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A handwritten signature in green ink, likely of the Principal, is positioned above the official stamp.

Principal
Amritsar College of Engg. & Tech.
AMRITSAR

Preface

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Energy Audit Report of Amritsar College Of Engg. & Technology, Amritsar

Introduction

The world is focusing on development of new technologies in each area to improve profile. In the country, entire activities had been performed by the human being for better future. Today we are emerging towards the desirable status of a developed nation with fast strides. For achieving optimum platform energy management is necessary. As we aware about electricity crisis and its blackouts, we are facing lack of electricity in the country during current scenario. So, College management is taking an initiate regarding production of electricity and its saving.

Energy conservation means reduction in energy consumption without making any sacrifice of quantity or quality. it will result to use energy efficient equipment properly and change basic fundamental of life for energy wastage. By observing all key points of electricity and its demand, it is necessary to plan a life style in well manner for energy saving and its consumption.

In the present study, college electricity audit has been done. In the study, practical laboratories, instrument, Fans, Air conditioners, Computers, each small to large appliances are considered. During this, total economic investment of college on the electricity and total generation of electricity from the solar has been studied. We done all these mentioned thinks by collecting exact data form survey.

1.1 Energy Consumption and Saving of Year 2019-2020

The annual energy consumption of Amritsar College of Engineering & Technology is as follows:

Year	Energy Consumption (KWH)	Energy Saving (KWH)	%age saving
2019-2020	870	138	13.7

Further, the following efforts has been done for energy saving and to improve its profile in the campus.

1. Installation of additional capacitor banks.
2. For class Rooms – Set temperature at 26 Deg. C
For Server Rooms – Temp. must be around 28-30 Deg. C
3. Office UPS must be switched off and also plug out from socket.
4. Installations of small size capacitors in AC motors.
5. Rewinding of machines (if required) and also note down the new value of current.
6. Replace CFL and VTL in boys hostel 2 with LED bulbs
7. Replace 3 star rated equipment with 5 star rated equipment's in applied Sciences Block.
8. Installation of solar water heater in the campus

1.2 Graphically Representation of Energy Consumption and Saving:-

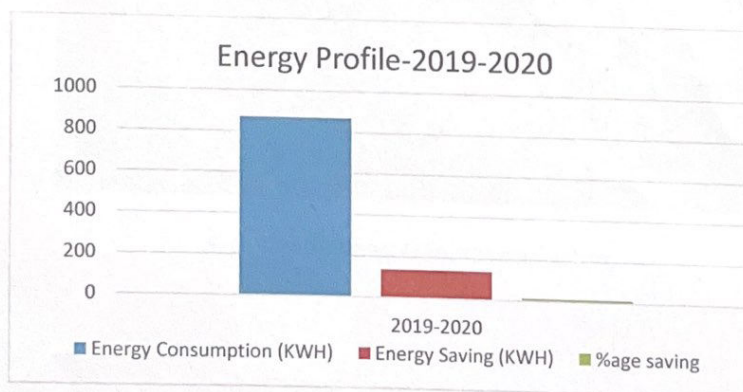


Fig- Representation of Energy Consumption and its saving in KWH and percentage

1.3 Detail of electricity production by using Renewable Energy Source

In the campus, solar plant was installed in the year 2019. The following power requirements has been fulfilled and as follows-

Power requirement met	Total Power Requirement	Renewable energy source	Renewable energy generated and used	Energy supplied to grid
430 KW	525000 unit	Solar Photovoltaic	Generated- 325000 unit	45000 unit
			Used- 280000 unit	

1.4 Photograph of Renewable Energy Sources-

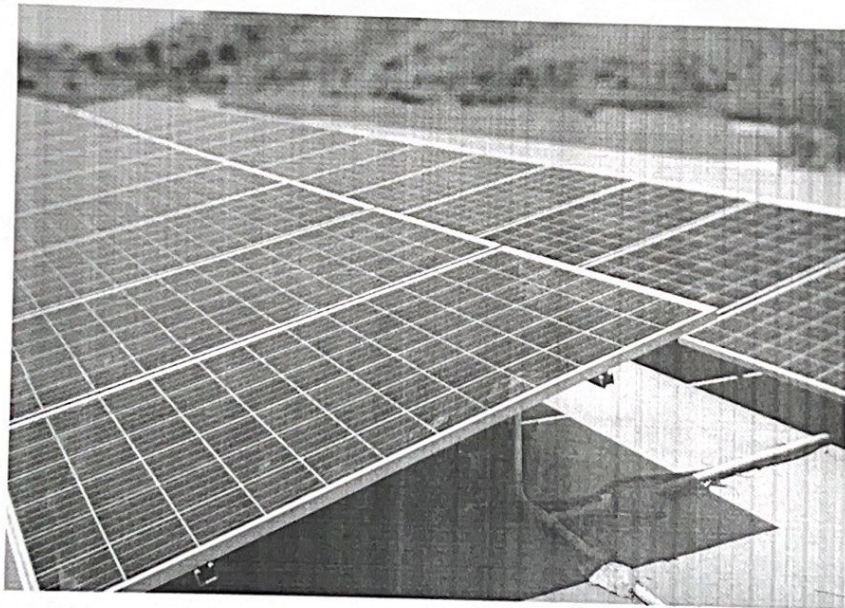


Fig- Solar Energy Generation System

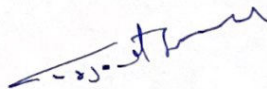
Conclusion

It is concluded that the data obtained during energy saving is useful for energy saving and its analysis for improvement voltage profile in the college. The college needs maximum 525000 units of electricity annually in the current scenario. Further, apart of energy is consumed and remaining has been supplied to the grid by renewable energy source. The power met by solar plant installed in the campus is 430 KW. Also, the percentage saving profile for energy consumption was 13.7 % from the year 2019-2020.

Report Certified and Verified By

Internal Members

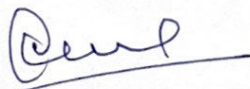
Er. Gurjeet Singh (Head Department of EE)



Er. Ajaypal Singh (Assistant Professor of EE)

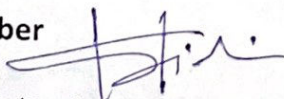


Sh. Anil Wadhwa (Admin Officer)



External Member

Er. Harinder Singh (Retd. SDO Majitha 1)



Principal
Amritsar College of Engg. & Tech.
AMNITSAT

Energy Audit Report (2018-2019)



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A handwritten signature in green ink, likely of the Principal, is written over the printed name.

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Amritsar College of Engg. & Tech.
Amritsar

Preface

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Introduction

Energy conservation means reduction in energy consumption without making any sacrifice of quantity or quality. it will result to use energy efficient equipment properly and change basic fundamental of life for energy wastage. By observing all key points of electricity and its demand, it is necessary to plan a life style in well manner for energy saving and its consumption. The world is focusing on development of new technologies in each area to improve profile. In the country, entire activities had been performed by the human being for better future. Today we are emerging towards the desirable status of a developed nation with fast strides. For achieving optimum platform energy management is necessary. As we aware about electricity crisis and its blackouts, we are facing lack of electricity in the country during current scenario. So, College management is taking an initiate regarding production of electricity and its saving.

In the present study, college electricity audit has been done. In the study, practical laboratories, instrument, Fans, Air conditioners, Computers, each small to large appliances are considered. During this, total economic investment of college on the electricity and total generation of electricity from the solar has been studied. We done all these mentioned thinks by collecting exact data form survey.

1.1 Energy Consumption and Saving of Year 2018-2019

The annual energy consumption of Amritsar College of Engineering and Technology is as follows:

Year	Energy Consumption (KWH)	Energy Saving (KWH)	%age saving
2018-2019	1068	117	9.8

Further, the following efforts has been done for energy saving and to improve its profile in the campus.

1. Unnecessary material must be taken out from electrical panels.
2. Remove old equipment's from the campus (if not required)
3. Installation of capacitor bank in the laboratories
4. Replace VTL with LED bulb in laboratories.
5. Arrest unnecessary lightening in the campus.

1.2 Graphically Representation of Energy Consumption and Saving:-

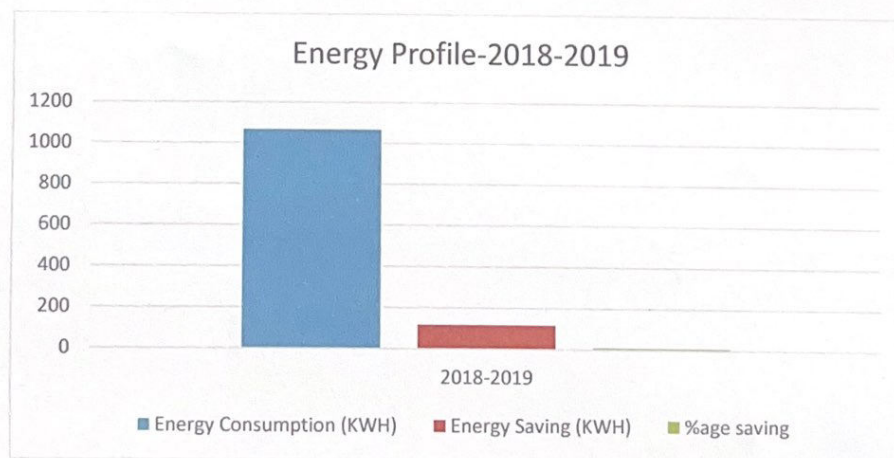


Fig- Representation of Energy Consumption and its saving in KWH and percentage

Conclusion

It is concluded that the data obtained during energy saving is useful for energy saving and its analysis for improvement voltage profile in the college. The college needs maximum 484000 units of electricity annually in the current scenario. Further, various efforts has been done to improve the voltage profile. Also, the percentage saving profile for energy consumption was 117 KWH and percentage saving of 9.8 % from the year 2018-2019.

Report Certified and Verified By

Internal Members

Er. Gurjeet Singh (HOD EE)

Er. Ajaypal Singh (AP)

Sh. Anil Wadhwa (AO)

External Member

Er. Harinder Singh (Retd. SDO)


Principal
Amritsar College of Engg. & Tech.
Amritsar

Energy Audit Report (2017-2018)



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1.1 Energy Consumption and Saving of Year 2017-2018

The annual energy consumption of Amritsar College of Engineering and Technology is as follows:

Year	Energy Consumption (KWH)	Energy Saving (KWH)	%age saving
2017-2018	1070	74	6.4

Further, the following efforts has been done for energy saving and to improve its profile in the campus.

1. Transformer wastage must be reduced to 2.5%
2. Departments must ensure that tubes and fans are switched off(when not required)
3. Amendment in the UPS load at various venues (current load of each around 30 KW)
4. Arrest electric heaters at boys and girls hostel.
5. Installation of efficient motors
6. Replace CFL and VTL in boys hostel 1 with LED bulbs
7. Replace 3 star rated equipment with 5 star rated equipments in main Block.

1.2 Graphically Representation of Energy Consumption and Saving:-

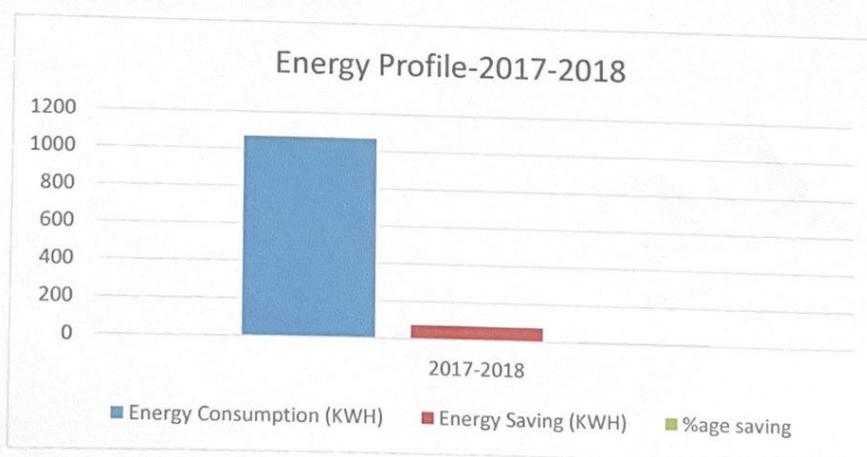



Fig- Representation of Energy Consumption and its saving in KWH and percentage


Conclusion

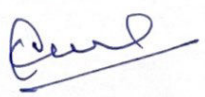
It is concluded that the data obtained during energy saving is useful for energy saving and its analysis for improvement voltage profile in the college. The college needs maximum 478000 units of electricity annually in the current scenario. Further, various efforts has been done to improve the voltage profile. Also, the percentage saving profile for energy consumption was 74 KWH and percentage saving of 6.4 % from the year 2017-2018.

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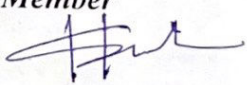
Internal Members

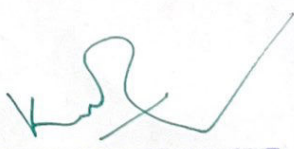

Er. Gurjeet Singh (Assistant Professor of ECE)


Er. Ajaypal Singh (Assistant Professor of EE)


Sh. Anil Wadhwa (Admin Officer)

External Member


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Energy Audit Report (2016-2017)



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In the present study, college electricity audit has been done. In the study, *practical laboratories, instrument, Fans, Air conditioners, Computers*, each small to large appliances are considered. During this, total economic investment of college on the electricity and total generation of electricity from the solar has been studied. We done all these mentioned things by collecting exact data from survey.

1.1 Energy Consumption and Saving of Year 2016-2017

The annual energy consumption of Amritsar College of Engineering and Technology is as follows:

Year	Energy Consumption (KWH)	Energy Saving (KWH)	%age saving
2016-2017	1035	65	5.9

Further, the following efforts has been done for energy saving and to improve its profile in the campus.

1. Arrest leakage of water waste.
2. Reduces fluctuations in electrical supply.
3. Remove old equipment's (if not required)
4. Arrest loose connections.
5. Installation of energy efficient motors.

1.2 Graphically Representation of Energy Consumption and Saving:-

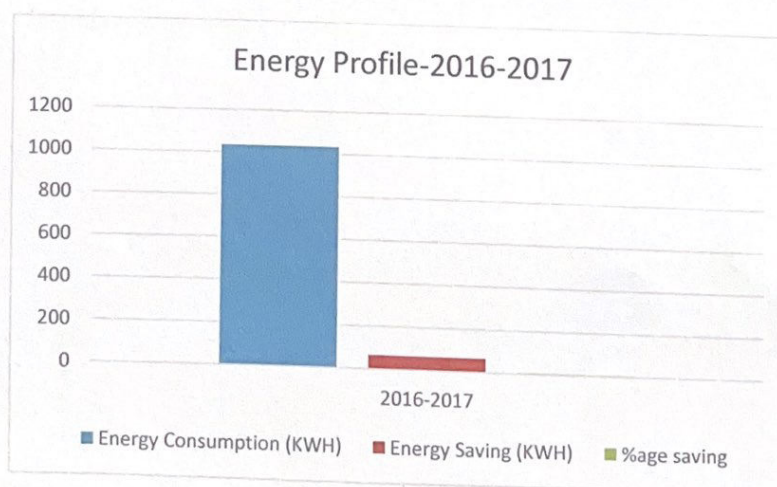


Fig- Representation of Energy Consumption and its saving in KWH and percentage

Conclusion

It is concluded that the data obtained during energy saving is useful for energy saving and its analysis for improvement voltage profile in the college. The college needs maximum 468000 units of electricity annually in the current scenario. Further, various efforts has been done to improve the voltage profile. Also, the percentage saving profile for energy consumption was 65 KWH and percentage saving of 5.9 % from the year 2016-2017.

Report Certified and Verified By

Internal Members



Er. Gurjeet Singh (AP of ECE)

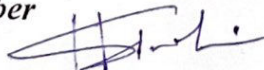


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