

# **Khwaja Moinuddin Chishti Language University**

**Lucknow, U.P.**

## **Energy Audit Report**

**2019 - 2020**

*Date: 14 JULY 2020*

**AUDITED BY**

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KHWAJA MOINUDDIN CHISHTI  
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# Energy Audit

## 1. Energy Audit

Energy stands as a cornerstone for driving economic progress across nations. The focal point of energy management lies in its ability to facilitate the efficient production of goods and services, all while curbing costs and environmental impacts. At its core, energy management is about orchestrating energy usage in a manner that optimizes output while simultaneously reducing consumption per unit of production. This strategic endeavor involves the implementation of systematic processes and procedures aimed at achieving this delicate balance.

An essential tool in the arsenal of energy management is energy audit. These audits serve as structured assessments, meticulously analyzing and aligning all energy inputs and outputs within a facility. By scrutinizing energy flows and pinpointing areas of inefficiency, energy audits pave the way for informed decision-making and targeted improvements.

Presently, the Government of India has taken on the ambitious task of realizing Net Zero emissions. This comprehensive objective necessitates unwavering dedication and meticulous planning from all stakeholders involved. In this pursuit, energy management emerges as a critical avenue for driving sustainable progress, aligning economic growth with environmental stewardship.

### 1.1 Resource of Energy Audit

Energy resources utilized by all the departments, support services, and the administrative buildings of KMC Language University, include Electricity, and Diesel Generators installed on the campus.

### 1.2 Energy Audit Objective

#### I. Primary Objective:

- Acquire and analyze data to understand consumption patterns across the university campus.
- Calculate energy wastage based on the findings from the initial data analysis.
- Implement feasible and cost-effective solutions to optimize energy usage and reduce wastage.

#### II. Secondary Objectives:

- Provide the university with valuable experience in energy management, serving as an initial exposure to this field.
- Enable the university to identify energy distribution patterns within its infrastructure.
- Foster technical and managerial skills necessary for future energy projects and initiatives.
- Contribute to ongoing follow-up projects, enhancing the university's overall technical and management exposure.
- Facilitate significant reductions in energy consumption, thereby contributing to the university's sustainability goals and overall achievements.

### 1.3 Benefits of Energy Audit

Energy audits offer numerous benefits to KMC Language University, supporting its commitment to sustainability, cost-effectiveness, and environmental responsibility:

- 1. Cost Savings:** Energy audits identify areas of energy waste and inefficiency, allowing the university to implement cost-effective solutions to reduce energy consumption. By optimizing energy usage, KMC Language University can lower its utility bills and operating expenses, resulting in significant cost savings over time.
- 2. Environmental Impact:** Implementing energy-efficient measures identified through audits helps to reduce the university's carbon footprint and overall environmental impact. By conserving energy and reducing greenhouse gas emissions, KMC Language University demonstrates its commitment to environmental stewardship and sustainability.
- 3. Enhanced Operational Efficiency:** Energy audits provide valuable insights into the university's energy consumption patterns and inefficiencies. By addressing these issues, KMC Language University can improve operational efficiency and optimize the performance of its facilities, leading to smoother operations and better resource management.
- 4. Regulatory Compliance:** Energy audits ensure that KMC Language University complies with relevant energy efficiency regulations and standards. By staying up-to-date with regulatory requirements, the university avoids potential fines and penalties while demonstrating its commitment to legal and regulatory compliance.
- 5. Improved Indoor Comfort:** Energy audits may identify opportunities to improve indoor comfort levels within university buildings. By addressing issues such as inadequate insulation, inefficient HVAC systems, or poor building design, KMC Language University can create a more comfortable and productive environment for students, faculty, and staff.
- 6. Long-term Planning:** Energy audits provide valuable data and recommendations that can inform long-term planning and decision-making processes. By understanding current energy usage patterns and forecasting future needs, KMC Language University can develop strategic initiatives to achieve its energy efficiency and sustainability goals.
- 7. Educational Opportunities:** Energy audits offer educational opportunities for students, faculty, and staff to learn about energy conservation, efficiency, and sustainability practices. By involving the university community in energy audit initiatives, KMC Language University can raise awareness about environmental issues and empower individuals to take action towards a more sustainable future.

#### 1.4 Approach

The Energy Efficiency Review employed a multi-faceted approach, combining data analysis, on-site inspections, stakeholder interviews, and university best practices. By examining energy consumption patterns across diverse university facilities, from academic buildings to residential quarters, we gained valuable insights into areas ripe for improvement.

#### 1.5 Key Findings:

##### a) Energy Consumption Trends:

- The review unveiled trends of escalating energy consumption throughout the fiscal year, highlighting the need for proactive measures to curb usage and optimize efficiency.
- Identifying peak consumption periods provided valuable insights into demand-side management strategies and load balancing initiatives.

**b) Infrastructure Assessment:**

- Evaluation of infrastructure revealed opportunities for improving the performance of Heating, Ventilation, and Air Conditioning (HVAC) systems, including addressing insulation deficiencies and upgrading outdated equipment.
- Lighting assessments underscored the potential for significant energy savings through the adoption of modern, energy-efficient technologies and the implementation of smart lighting controls.

**c) Building Performance:**

- Analysis of building envelopes identified areas for improvement in thermal efficiency and air tightness, suggesting retrofitting measures to enhance occupant comfort and reduce energy losses.
- Behavioral observations highlighted the importance of fostering a culture of energy conservation and the adoption of sustainable practices among students, faculty, and staff.

## 1.6 Total Energy Consumption of KMC Language University

**Total Energy Consumption of KMC Language University, Lucknow**  
**From 1<sup>st</sup> April 2019 to 31<sup>st</sup> March 2020**

Sr. No.	Months	Total Consumption in kWh
1.	April 2019	45650
2.	May 2019	62500
3.	June 2019	126550
4.	July 2019	106750
5.	August 2019	117700
6.	September 2019	12500
7.	October 2019	78700
8.	November 2019	86550
9.	December 2019	101700
10.	January 2020	27650
11.	February 2020	103600
12.	March 2020	36750
<b>Total</b>		<b>1019100</b>

Annual electricity consumption report for KMC Language University covering the period from April

1<sup>st</sup>, 2019, to March 31<sup>st</sup>, 2020. During this timeframe, our institution consumed a total of 1,019,100 units of electricity.

This report serves as a comprehensive overview of our electricity usage, reflecting our commitment to transparency, accountability, and sustainable practices. It provides valuable insights into our energy consumption patterns, facilitating informed decision-making and strategic planning moving forward.

**Key highlights from the report include:**

- 1. Total Electricity Consumption:** The total electricity consumption for the specified period amounted to 1,019,100 units, reflecting the energy requirements of our campus facilities, academic buildings, administrative offices, and other operational areas.
- 2. Usage Analysis:** Detailed analysis of electricity usage across different departments and facilities allows us to identify areas of high energy consumption and potential opportunities for optimization and efficiency improvement.
- 3. Sustainability Initiatives:** As part of our commitment to sustainability, we continuously strive to implement energy-efficient practices and technologies to reduce our environmental footprint. This includes initiatives such as LED lighting upgrades, energy-efficient HVAC systems, and awareness campaigns promoting energy conservation among students, faculty, and staff.
- 4. Future Strategies:** The insights gleaned from this report will inform our future strategies and initiatives aimed at further reducing energy consumption, enhancing operational efficiency, and advancing our sustainability goals. By leveraging data-driven insights, we aim to continuously improve our energy management practices and minimize our impact on the environment.

We remain dedicated to promoting a culture of energy conservation and sustainability within our university community. Through collective efforts and proactive measures, we can achieve meaningful progress towards a more sustainable and environmentally responsible future.

## **1.7 Recommendations:**

### **a) Technology Integration:**

- Embrace the integration of energy-efficient technologies, such as smart HVAC controls and LED lighting systems, to optimize energy usage and reduce operational costs.
- Explore the potential for leveraging building automation systems to enhance energy management and occupant comfort.

### **b) Educational Initiatives:**

- Develop educational programs and awareness campaigns to empower the university community with the knowledge and tools needed to adopt energy-saving behaviors.
- Foster interdisciplinary collaborations to explore innovative solutions and promote a culture of sustainability across academic disciplines.

**c) Renewable Energy Deployment:**

- Investigate opportunities for integrating renewable energy sources, such as solar photovoltaic (PV) systems, to diversify the university's energy portfolio and reduce reliance on fossil fuels.
- Pursue partnerships with renewable energy providers and government agencies to facilitate the implementation of sustainable energy initiatives.





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Khwaja Moinuddin Chishti Urdu, Arabi-Farsi University, Lucknow  
U.P. STATE GOVERNMENT UNIVERSITY

दिनांक: 10/07/2018

कार्यालय ज्ञाप

विश्वविद्यालय द्वारा माननीय कुलपति जी के आदेशानुसार विश्वविद्यालय में उर्जा लेखा परीक्षा सिमित (Energy Audit Committee) का गठन तीन वर्षों अथवा अग्रिम आदेशों तक किया जाता है जिसका विवरण निम्नवत् है—

1. प्रौद्योगिकी विभाग (व्यवसाय प्रबंधन विभाग)
2. डॉ सौबान सईद (उर्दू विभाग)
3. डॉ नलिनी मिश्रा (शिक्षाशास्त्र विभाग)
4. श्री शबीह हैदर (लेखाकार, वित्त कार्यालय)
5. श्री आशुतोष श्रीवास्तव (मंडल अभियंता, पूर्वोत्तर रेलवे बरेली)



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