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Energy Efficiency Improvement Report and Policy on Upgrading Existing Buildings (2021–2024)
Effective Date: January 13, 2021
Approved By: Board of Trustees / Lebanese French University

I. Policy Statement and Purpose

The Lebanese French University (LFU) is committed to improving the energy performance of all existing facilities by implementing structured renovation and retrofitting programs between 2021 and 2024. This policy and report outline LFU's strategic approach to upgrading aging infrastructure to align with international energy efficiency standards and environmental responsibility.

The policy applies to all academic buildings, administrative offices, student facilities, and service areas that were constructed before 2021. All maintenance, engineering, and procurement departments share responsibility for executing this framework under the supervision of the University Administration and Sustainability Committee.

II. Objectives of Building Upgrades (2021–2024)

LFU will carry out progressive upgrades to enhance the energy performance and operational sustainability of existing structures. The key objectives are:

a) Reduce annual electricity consumption across existing buildings by at least 20 percent by 2024.
b) Replace inefficient lighting systems with LED technology in 100 percent of campus buildings.
c) Improve thermal insulation in walls and roofs to reduce heat loss and minimize air-conditioning load.
d) Upgrade mechanical and electrical systems (HVAC, pumps, motors) to energy-saving models compliant with international efficiency ratings.
e) Install automated controls and energy meters for real-time monitoring and energy consumption tracking.
f) Conduct annual energy audits to identify further improvement opportunities and track progress toward targets.

III. Implementation Strategy

Implementation of this policy is divided into phased actions:

1. **Assessment Phase (2021–2021):** A baseline energy audit was performed on all university buildings to measure existing performance and identify inefficiencies in lighting, HVAC, and insulation.
2. **Planning Phase (2021–2022):** Based on the audit results, a five-year upgrade plan was developed prioritizing high-consumption facilities. Engineering designs and budget allocations were reviewed and approved by the University Board.
3. **Implementation Phase (2022–2024):** Upgrading of selected buildings was executed in stages to minimize academic disruption. Projects included LED retrofits, roof insulation, HVAC replacement, and solar panel installations.

4. Monitoring Phase (2024–2024): Energy consumption data were analyzed to evaluate the effectiveness of the upgrades and verify compliance with efficiency goals.

IV. Roles and Responsibilities

- University Administration: Allocates funding, approves project plans, and monitors policy execution.
- Engineering Department: Conducts technical assessments, supervises contractors, and ensures design compliance.
- Procurement Office: Implements sustainable purchasing procedures favoring energy-rated equipment and materials.
- Sustainability Committee: Prepares annual reports, verifies data, and ensures continuous alignment with SDG 7 objectives.

All building projects must include a post-completion energy review and submit a **Building Efficiency Certification Form** confirming compliance with LFU's standards.

V. Progress Summary and Evidence (2021–2024)

As of the most recent review, LFU has achieved the following measurable results:

- Completed upgrades for 12 existing buildings (60 percent of total campus area).
- Installed over 2,000 LED light units, reducing lighting energy use by approximately 35 percent.
- Improved roof and wall insulation for five main buildings, leading to an average reduction of 8 percent in cooling energy demand.
- Introduced energy metering in key laboratories and administrative halls to enable real-time usage tracking.
- Reinvested annual energy savings into further campus modernization initiatives.

These achievements demonstrate LFU's commitment to progressive energy management and long-term sustainability.

VI. Future Actions

LFU will continue implementing efficiency measures by expanding the retrofit program to all remaining facilities by the end of 2024. Future initiatives include:

- Replacing outdated window glazing with low-emissivity glass.
- Upgrading campus street lighting to solar-powered fixtures.
- Integrating smart metering dashboards for administrative use.
- Launching a training series on energy efficiency for maintenance and technical staff.

VII. Review and Update

This policy and report will be reviewed annually to assess performance against targets and incorporate new technological solutions or international best practices. Revisions will be approved by the Board of Trustees and communicated to all departments and stakeholders.

VIII. Approval and Endorsement
Approved By: Board of Trustees / Lebanese French University
Implemented By: University Administration and Engineering Department
Effective Period: January 2021 – December 2024
Next Review: December 2024

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LFU
Directorate of Administration

Asst. Lect. Hawkar Anwer Hamad
Administration Manager