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### Energy Efficiency Plan (2020–2024)

**Effective Date:** February 3, 2020

**Approved By:** Board of Trustees / Lebanese French University

#### I. Plan Statement and Purpose

The Lebanese French University (LFU) is committed to managing energy responsibly across all academic, administrative, and support operations.

This Energy Efficiency Plan provides a structured, measurable framework for reducing overall energy consumption and increasing the use of renewable energy sources during the period 2020–2024.

The plan supports LFU's long-term sustainability vision and complements the Energy Efficiency Policy for Renovations and New Buildings and the Upgrading Existing Buildings Report. It defines annual objectives, monitoring methods, and departmental responsibilities for achieving continuous improvement in energy performance.

#### II. Strategic Objectives

1. **Reduce total campus energy use** by 20 percent by 2024 compared with the 2019 baseline.
2. **Increase renewable energy contribution** to at least 15 percent of total electricity consumption through solar installations and other clean sources.
3. **Implement efficient building operations** via smart control systems, energy-saving HVAC scheduling, and optimized lighting.
4. **Integrate energy efficiency into procurement**, ensuring all purchased equipment meets or exceeds international energy ratings.
5. **Establish an annual performance-tracking system** with monthly consumption reports for each building.
6. **Promote awareness and training programs** to embed a culture of conservation among students and staff.

#### III. Implementation Framework

The plan is executed through three main pillars:

- **Operational Efficiency:** LFU will introduce smart meters and centralized monitoring software to track real-time consumption and detect inefficiencies.
- **Infrastructure Investment:** Energy-saving retrofits, solar rooftops, and LED street-lighting projects will be prioritized in capital-budget planning.

- **Behavioral Change:** Awareness campaigns (“Save Energy at LFU”) and incentive programs will encourage departments to meet annual reduction targets.

Each faculty and administrative unit is assigned an Energy Coordinator responsible for implementing local actions and submitting quarterly progress updates to the Sustainability Committee.

#### IV. Monitoring and Evaluation

1. **Plan:** Set annual energy targets and allocate resources.
2. **Do:** Implement actions such as maintenance, upgrades, or behavioral initiatives.
3. **Check:** Measure and verify results using consumption data.
4. **Act:** Adjust strategies, address gaps, and set new targets.

The **Engineering Department** and **Sustainability Committee** will prepare an **Annual Energy Performance Report** summarizing usage trends, cost savings, and carbon-emission reductions.

#### V. Achievements and Progress (as of 2024)

- Installation of smart meters in 8 main buildings, allowing automated energy tracking.
- Replacement of 90 percent of interior lighting with LED fixtures.
- Implementation of air-conditioning zoning systems that reduced electricity use by 12 percent.
- Pilot deployment of a solar energy system on the Engineering Building roof producing around 22 MWh annually.

These milestones have resulted in an estimated 16 percent overall energy reduction since 2020.

#### VI. Review and Continuous Improvement

The plan will be reviewed annually by the Sustainability Committee to evaluate achievements and identify emerging opportunities. Updates will incorporate new technologies, research findings, and university expansion projects.

#### VII. Approval and Endorsement

**Approved By:** Board of Trustees / Lebanese French University

**Implemented By:** University Administration and Engineering Department

**Effective Period:** February 2020 – December 2024

**Next Review:** December 2024



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