VINAYAKA MISSION'S
RESEARCH FOUNDATION
(Deemed to be University under section 3 of the UGC Act 1956)



Policy on Energy-Efficient Renovation and Building

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POLICY ON
ENERGY-EFFICIENT RENOVATION AND BUILDING

Drafted by	Dy. Director-Research
Verified by	Director I/c, Accreditation & Ranking
Passed by	Vice-Chancellor
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VINAYAKA MISSION'S RESEARCH FOUNDATION
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POLICY ON ENERGY-EFFICIENT RENOVATION AND BUILDING

1. Preamble

Vinayaka Mission's Research Foundation (Deemed to be University) [VMRF(DU)] recognizes that the planning, construction, operation, renovation and maintenance of buildings have a significant influence on energy consumption, operating costs, occupant comfort and environmental performance. The University seeks to improve the energy performance of its built environment through energy-efficient design, responsible selection of materials and equipment, efficient building services, renewable-energy integration where feasible, and regular monitoring.

This Policy supports the University's sustainability commitments and the United Nations Sustainable Development Goals, particularly SDG 7 (Affordable and Clean Energy), SDG 11 (Sustainable Cities and Communities), SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action). It shall be implemented in accordance with applicable laws, building regulations, fire and life-safety requirements, accessibility requirements, procurement rules and the University's approved financial and administrative procedures.

2. Short Title and Commencement

a. This policy shall be called "**Policy on Energy-Efficient Renovation and Building"** in University Operations.

b. This policy shall come into force from the date of approval of the Executive Council of the University.

3. Purpose

The purpose of this Policy is to establish a consistent framework to:

- Integrate energy-efficiency principles into new buildings, extensions, major renovations and routine refurbishment, as appropriate to the project.
- Reduce avoidable electricity and energy consumption while maintaining safe, healthy, accessible and comfortable indoor environments.
- Improve the performance of lighting, heating, ventilation and air-conditioning (HVAC), electrical systems and other energy-consuming equipment.
- Encourage the use of natural daylight, natural ventilation, passive design and suitable energy-efficient construction materials.

- Assess opportunities for renewable-energy systems and other low-carbon solutions where technically and financially feasible.
- Use energy audits, building performance data and maintenance records to identify improvement opportunities.
- Promote awareness and responsible energy-use practices among students, faculty, staff, contractors and other campus users.

4. Scope and Applicability

This Policy applies, to the extent relevant and practicable, to:

- All existing and new University buildings, including academic, administrative, laboratory, library, healthcare, hostel/residential, dining, recreational and support facilities.
- New construction, extensions, major renovations, retrofits, refurbishment, building-services upgrades and replacement of major equipment.
- Planning, design, procurement, construction, commissioning, operation and maintenance activities associated with campus buildings.
- University departments, project teams, consultants, contractors, vendors and service providers involved in covered projects.

Where a building is leased, shared, subject to third-party control or governed by specific contractual arrangements, implementation shall be pursued within the University's authority and the terms of the relevant agreement.

5. Policy Statement

VMRF(DU) shall consider energy performance as a key factor in the planning, design, approval, construction, renovation, equipment replacement and maintenance of its buildings. Energy-efficiency measures shall be selected according to building use, technical feasibility, life-cycle costs, occupant needs, applicable standards and available resources. The University shall seek continual improvement through audits, performance monitoring, maintenance and awareness activities.

- Apply relevant provisions of the National Building Code of India and applicable energy-conservation/building-energy codes, local building rules and other statutory requirements, as applicable to the project.

- Prioritize passive design measures such as daylighting, shading, appropriate orientation and natural ventilation where suitable for the building's function and climate.
- Select energy-efficient lighting, fans, HVAC equipment, pumps, motors, appliances and controls when new systems are installed or existing systems are replaced.
- Consider renewable-energy technologies, including rooftop solar photovoltaic systems and solar water heating, where technically feasible and approved.
- Protect occupant health, comfort, accessibility, fire safety and laboratory or clinical requirements when making energy-related changes.
- Promote responsible use of materials and minimize avoidable construction and demolition waste, subject to technical and regulatory requirements.

6. Objectives

a. To integrate energy-efficient principles into new buildings and renovation projects.
b. To minimize unnecessary electricity and energy use across campus buildings.
c. To enhance the efficiency of lighting, HVAC, electrical systems and equipment.
d. To promote natural lighting, ventilation, passive cooling and energy-efficient materials.
e. To assess feasible renewable-energy options, including solar power and solar water heating.
f. To identify energy-saving opportunities through audits and performance monitoring.
g. To maintain occupant health, accessibility, indoor air quality and safety.
h. To encourage responsible material use and reduce construction and demolition waste.
i. To encourage students, faculty, staff and contractors to practice energy conservation.
j. To track energy savings and ensure compliance with applicable regulations and University procedures.

7. Definitions

Energy-efficient building: A building designed, operated or upgraded to reduce energy use while maintaining required functionality, indoor environmental quality, health, safety and accessibility.

Energy-efficient renovation: A planned alteration, retrofit, refurbishment or equipment upgrade intended to improve the energy performance of an existing building or its systems.

Building envelope: The physical separation between indoor and outdoor environments, including roofs, external walls, floors, windows and doors.

HVAC: Heating, ventilation and air-conditioning systems used to manage indoor temperature, air movement and related environmental conditions.

Energy audit: A systematic review of energy use and relevant building systems to identify consumption patterns, inefficiencies and potential improvements.

Building Management System (BMS): A system used to monitor and, where appropriate, control building services such as lighting, HVAC and other energy-consuming systems.

8. Guidelines for New Construction

8.1 Planning and design

- Project proposals should assess anticipated energy demand, building use, occupancy, operating hours and opportunities to reduce demand before selecting systems.
- Design teams should consider building orientation, shading, roof and wall performance, suitable glazing, efficient windows and doors, and reduction of unwanted heat gain or loss.
- Plans should maximise useful natural daylight and natural ventilation where compatible with the building's purpose, indoor air quality, safety and local conditions.
- Courtyards, open spaces, shaded areas, green belts and landscaping may be incorporated where appropriate to support passive cooling and a healthy campus environment.
- Energy-efficient lighting, HVAC, electrical distribution and control systems should be considered during design rather than added only after construction.
- Roof areas and other suitable spaces may be assessed for solar photovoltaic panels, solar water heating or other approved clean-energy systems.

8.2 Materials and construction

- Specify durable and fit-for-purpose materials that support energy performance and lifecycle value, including suitable insulation, reflective or heat-mitigating finishes and efficient glazing where appropriate.
- Where technically suitable and compliant with quality and safety requirements, consider recycled or lower-impact construction materials.
- Consultants and contractors shall follow approved drawings, technical specifications, statutory requirements and project quality procedures.
- Changes that could materially affect energy performance shall be reviewed and documented by the designated project authority.

8.3 Building services and commissioning

- Use appropriately sized and efficient lighting, fans, HVAC equipment, pumps, motors, lifts and other systems.
- Consider occupancy or motion sensors, daylight sensors, timers, automatic shut-off controls, variable-speed drives and programmable controls where justified.
- Where a BMS or other monitoring system is installed, configure it to support monitoring and efficient operation of relevant building services.
- Before handover, relevant systems should be inspected, tested and commissioned; operating manuals, warranties and maintenance instructions should be provided to the department responsible.

9. Guidelines for Existing Buildings and Renovations

- Review existing buildings and systems to identify energy losses, inefficient equipment, poor controls, maintenance defects and practical retrofit opportunities.
- Prioritise measures based on energy-saving potential, safety, urgency, lifecycle cost, operational continuity and available budget.
- Replace conventional lighting with efficient LED lighting when suitable and consider controls that avoid unnecessary operation.
- Upgrade or optimise HVAC systems, fans, pumps, motors, lifts and other equipment when replacement or refurbishment is warranted.
- Improve the building envelope, including roofs, walls, windows, doors, shading and sealing, where an assessment shows a meaningful benefit.
- Make use of natural daylight and ventilation where feasible, without compromising required lighting levels, indoor air quality, infection-control needs or laboratory and clinical standards.
- Assess the feasibility of rooftop solar, solar water heating, solar outdoor lighting and other appropriate renewable-energy options.
- Ensure that renovation proposals are evaluated before undertaking avoidable new construction, where adaptation of existing facilities can meet institutional need.
- Manage construction and demolition waste responsibly and protect existing trees, green spaces and other environmental features as far as practicable.

- After completion, check whether the intended energy-efficiency measures are functioning and identify corrective actions where performance falls short.

10. Energy Management and Operational Practices

- Conduct periodic energy audits or energy-use reviews of buildings and significant energy-consuming systems.
- Maintain available records of electricity consumption, energy bills, equipment inventories, maintenance and completed improvement works.
- Use energy-saving settings on computers, printers and other devices; where feasible, enable power-saving modes after periods of inactivity.
- Switch off lights, fans, equipment and non-essential systems when not required, subject to safety, security, clinical, laboratory and operational needs.
- Use natural daylight and task lighting wherever appropriate and avoid unnecessary decorative or external lighting.
- Maintain lighting controls, sensors, HVAC systems, electrical connections and other building services to support efficient operation.
- Consider sub-metering or digital monitoring for major buildings or systems where technically and financially feasible.
- Display clear energy-conservation guidance in suitable locations and encourage reporting of faults, waste or opportunities for improvement.

11. Implementation and Approval Procedure

1. **Initiation:** The user department or facility manager identifies the need for a new building, renovation, retrofit or equipment replacement and provides the operational justification.
2. **Preliminary assessment:** The designated engineering, facilities or project function assesses the existing condition, energy implications, technical requirements, safety, accessibility, estimated costs and potential alternatives.
3. **Design review:** Proposed designs and specifications are reviewed for relevant energy-efficiency provisions, statutory compliance and compatibility with the building's intended use.

4. **Approval and budgeting:** The proposal is submitted to the competent authority under the University's existing financial and administrative delegation procedures. No expenditure is authorised solely by this Policy.
5. **Procurement and execution:** Consultants, vendors and contractors are selected and managed in accordance with approved procurement procedures and required technical specifications.
6. **Inspection and commissioning:** Completed works and installed systems are inspected, tested and documented before acceptance or handover, as appropriate to the project.
7. **Post-completion review:** Where feasible, energy use or system performance is compared with the expected outcome, and corrective actions are assigned and recorded.

12. Roles and Responsibilities

- **Competent approving authority:** approve projects and expenditure through existing delegations and consider significant policy or implementation issues.
- **Engineering, Estates, Facilities or designated Project Department:** coordinate technical assessment, design review, construction, renovation, commissioning, maintenance and project records.
- **Electrical/Energy Management function or designated Energy Audit Cell:** coordinate energy audits, monitor energy-use data, recommend efficiency measures and support reporting.
- **Finance and Procurement functions:** assess budget availability, lifecycle costs and procurement compliance, and maintain relevant financial records.
- **Sustainability function or designated committee:** advise on sustainability objectives, environmental considerations, indicators and institutional reporting.
- **User departments and building occupants:** use facilities responsibly, report faults and cooperate with approved energy-saving measures.
- **Consultants, contractors and vendors:** comply with approved plans, specifications, safety requirements and contractual obligations, and provide required documentation.

13. Monitoring, Records and Reporting

The designated responsible function should maintain sufficient records to monitor implementation. Where data are available and comparable, the University may use the following indicators:

- Annual electricity consumption by building or unit, where metering permits.
- Electricity consumption per unit of floor area (kWh/m²/year), where floor-area and consumption data are available.
- Number or percentage of new construction and major renovation projects that underwent documented energy-efficiency review.
- Number of energy audits or building energy-use reviews completed and recommendations addressed.
- Number or proportion of lighting and equipment upgrades completed, where records are maintained.
- Installed renewable-energy capacity and energy generated on campus, where applicable and verifiable.
- Estimated or measured energy savings from completed projects, with the calculation method and baseline recorded.
- Completion of maintenance, commissioning, staff awareness and corrective actions.

Targets should be established by the University after reviewing baseline data, building use, feasibility and available resources. Energy savings or carbon reductions should not be claimed without a documented method and supporting records.

14. Awareness and Capacity Building

VMRF(DU) may conduct awareness programmes, staff training, student engagement and information campaigns on energy-efficient buildings, equipment use, maintenance and conservation. Personnel involved in design, construction, procurement and building operations should receive information relevant to their responsibilities. Energy-saving notices may be displayed in classrooms, offices, laboratories, hostels and common areas where appropriate.

15. Resources, Procurement and Partnerships

Energy-efficiency requirements should be considered during project budgeting and procurement. Where appropriate, the University may assess lifecycle costs rather than purchase price alone and explore grants, technical assistance or partnerships that support efficient buildings and renewable-energy projects. Such initiatives remain subject to financial approval, procurement rules and applicable requirements.

16. Documentation and Records

Relevant departments shall maintain, as applicable, approved plans and specifications, energy assessments, audit reports, procurement documents, equipment details, inspection and commissioning reports, maintenance records, energy-consumption data and post-completion reviews. Records shall be retained in accordance with University procedures and applicable law.

17. Exceptions and Corrective Action

Any proposed deviation from this Policy shall be documented with its technical, operational, safety, legal or financial justification and submitted to the competent authority for approval under existing procedures. Where an energy-efficiency measure is impracticable, an alternative should be considered where feasible. Identified defects or performance gaps shall be assigned to a responsible function with an appropriate corrective-action timeline.

18. Review and Amendment

This Policy shall be reviewed at least once every three years, or earlier where required by changes in applicable standards, regulations, technologies, campus requirements or University sustainability priorities. The designated policy owner [VMRF(DU)] shall coordinate the review and submit proposed amendments to the competent authority.

19. Approval and Commencement

This Policy shall take effect on the date of approval by the competent authority of VMRF(DU). It shall be read together with the University's applicable statutes, building and safety requirements, financial and procurement rules, energy policies and other relevant institutional policies. Applicable law and the University's governing instruments shall prevail in case of inconsistency.

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