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Energy-Efficient Renovation & Building Policy

1. Purpose

Set clear, practical requirements so all new construction, major renovation and lifecycle upgrades at the university deliver measurable energy savings, improved occupant comfort, lower operating costs and reduced carbon emissions.

2. Executive summary

This policy makes the university's building works consistent with national codes and international best practice. Major renovation projects will target performance well above baseline building code requirements, smaller projects will follow a staged improvement approach, and all projects will include monitoring, verification and occupant engagement to lock in savings.

3. Objectives

1. Achieve at least 20 percent better whole-building energy performance than the applicable ECBC baseline for major renovations and new buildings, where feasible.
2. Reduce embodied carbon in major projects by a minimum of 20 percent compared with conventional practice, where lifecycle data are available.
3. Move campus building stock toward net-zero operational emissions over a defined timeline (phased, campus-specific targets).
4. Ensure all projects incorporate measurement and verification so claimed savings are proven and maintained.

4. Scope

Applies to:

4.1 All new university buildings funded or managed by Adichunchanagiri University.

4.2 All major renovations, defined as projects with a construction value greater than INR 10 lakh or those that change more than 30 percent of a building's floor area or energy systems.

4.3 Minor renovations will follow a simplified energy improvement pathway (see Implementation).

4.4 Existing building operations and maintenance practices related to energy performance.

5. Standards and targets (what to meet)

5.1 Compliance floor: Projects must meet applicable national standards including the Energy Conservation Building Code (ECBC, and ECSBC where applicable).

5.2 Major renovations / new buildings: Aim to outperform the ECBC baseline by at least 20 percent on whole-building energy use intensity. For high-energy building types such as laboratories, healthcare, or data centers, set higher targets up to 30 percent where feasible. This mirrors strong university practice internationally.

5.3 Embodied carbon: For capital projects with a lifecycle assessment, require a minimum 20 percent reduction in embodied carbon from material and construction choices versus a conventional baseline, where credible data exist.

5.4 Certification / assurance: Projects should seek third-party verification appropriate to scope: Indian green building rating systems, GRIHA, or international standards such as LEED / Living Building Core/Equivalent. Require modelled and post-occupancy verification.

6. Implementation: project lifecycle requirements

6.1 Integrated design process

From project inception, require an integrated design team: architect, MEP engineer, energy modeller, facilities operations and an energy champion from campus. Use iterative energy modelling to set targets.

6.2 Minimum package for every project

6.2.1 Envelope improvements first: insulation, glazing, shading, air-tightness.

6.2.2 Efficient HVAC and controls sized from reduced loads.

6.2.3 LED lighting plus daylighting controls and occupancy sensors.

6.2.4 Metering and BAS (Building Automation System) for real time control and data logging.

6.3 Retrofit prioritization

Create a ranked retrofit list for campus using simple payback, energy savings potential and occupant impact, with higher priority to buildings with oldest systems and highest energy intensity. Use data collection, walkdowns and simple metering to inform prioritization.

6.4 Measurement & verification (M&V)

6.4.1 Baseline energy use must be established and documented. Implement M&V to IPMVP best practice, with at least 12 months of post-occupancy data for major projects. Meter energy at building and major system level.

6.4.2 Operations handover

Provide operations staff with system manuals, control sequences, training and a tuning period. Commissioning and seasonal re-commissioning are mandatory for major projects.

6.4.3 Procurement and materials

Include energy performance and lifecycle impact in procurement evaluation. Preference to low-embodied carbon materials, locally sourced where possible.

7 Governance and responsibilities

7.1 Sustainability Steering Committee: Approves campus targets, reviews major projects and receives annual progress reports.

7.2 Project Sponsor (Capital Works): Ensures project funds include energy measures and M&V.

7.3 Design & Construction Team: Responsible for meeting performance targets and third-party verification.

7.4 Facilities & Energy Manager: Oversees metering, M&V, preventive maintenance and occupant engagement.

7.5 Procurement: Incorporates energy and lifecycle criteria into RFPs and vendor evaluation.

8 Financing and incentives

8.1 Create an Energy Performance Fund seeded from capital budgets and a small percentage of annual energy savings to finance projects with longer paybacks. Consider third-party financing or Performance Contracting (ESCO) for large retrofits.

8.2 Offer small grants to departments for low-cost occupant-level improvements and behavioral programs.

9 **Monitoring, reporting and continuous improvement**

9.1 Publish an annual campus energy and emissions report. Include verified savings from projects and progress against targets.

9.2 Maintain a centralized energy dashboard for facilities staff and periodic high-level dashboards for senior leadership.

9.3 After two years, review campus targets and raise ambition where feasible.

10 Training and occupant engagement

10.1 Mandatory operations training for maintenance teams after project completion.

10.2 Regular awareness programs for students and staff that cover energy-smart use, reporting faults and simple conservation actions. Evidence shows these programs improve realized savings and occupant comfort.

11 KPIs

- Whole-building energy use intensity reduction (kWh/m²/year) vs baseline.
- Percentage of major projects achieving target >20% improvement.
- Metering coverage: percent of buildings with submeters.
- Verified reduction in operational carbon (tCO_2e/year).
- Number and value of projects funded via Energy Performance Fund.

12. Quick implementation checklist for the first 12 months

12.1 Approve policy and set numeric thresholds (minor vs major renovation).

12.2 Run campus energy audit and install submeters on top 10 energy users.

12.3 Create the Energy Performance Fund and define finance rules.

12.4 Pilot one major renovation to the new standard and publish a verification report.

13. Notes on legal and code alignment

This policy is designed to be additive to India's ECBC and ECSBC requirements. Where ECBC/ECSBC or local building rules set minimum standards, this policy requires projects to go beyond those minima to deliver deeper savings.

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