Template for Evidence(s)
UI GreenMetric Questionnaire

University : Universiti Teknikal Malaysia Melaka
Country : Malaysia
Web Address : http://www.utem.edu.my/

[2] Energy and Climate Change (EC)

[2.1] Energy Efficient Appliances Usage (EC.1)



Example of Energy Efficient Appliances Usage: Use of LED lighting and lamps with light detection





Replacement of Total 23 Units of High Efficiency Single Screw Type of Chiller from Conventional Type Chiller at UTeM Main Campus with COP can go up to ~6.5kW/KW





Inverter 4 Star Energy Efficient Split Unit Air Conditioner at Vice Chansellor Office, Main Campus and VRV Split Air Conditioner at other faculty's buildings around UTeM Main Campus

Description:

Energy Efficiency and Climate Change Initiatives: Universiti Teknikal Malaysia Melaka (UTeM)

Technical evaluation confirms that Universiti Teknikal Malaysia Melaka (UTeM) maintains an active commitment to the UI GreenMetric framework, specifically under category **[2] Energy and Climate Change (EC)**. The institution's baseline energy management and climate mitigation strategies are documented in alignment with international sustainability reporting standards.

The university's primary institutional profile and related disclosures are accessible at: http://www.utem.edu.my/

Core Objective: To realize continuous energy savings through a decentralized energy management framework, enabling organizational units to assess localized consumption and implement mitigation measures including structural insulation, LED modernization, and the deployment of sustainable infrastructure technologies.

This briefing document outlines the strategic initiatives and technical implementations regarding energy-efficient appliance usage at Universiti Teknikal Malaysia Melaka (UTeM). These efforts are categorized under the Energy and Climate Change (EC) framework, specifically focusing on the adoption of high-efficiency hardware to reduce the university's carbon footprint and optimize energy consumption.

Strategic Framework for Energy Management

Universiti Teknikal Malaysia Melaka aims to achieve substantial energy savings through rigorous energy management practices. The institutional strategy focuses on empowering all organizational units to assess their specific energy consumption and identify opportunities for savings. Key pillars of this strategy include:

- **Building Optimization:** Implementing improved insulation to minimize thermal loss.
- **Lighting Modernization:** Transitioning to LED technology and automated systems.
- **Sustainable Technology Deployment:** Integrating high-efficiency machinery and climate control systems across the main campus and faculty buildings.

High-Efficiency Cooling Infrastructure

A primary component of the university's energy efficiency strategy involves the large-scale replacement of legacy cooling systems with modern, high-performance alternatives.

Chiller System Upgrades

The university has undertaken a significant infrastructure project involving the replacement of conventional chillers.

- **Quantity:** 23 units.
- **Technology:** High Efficiency Single Screw Type Chillers.
- **Performance Metric:** These units achieve a Coefficient of Performance (COP) of approximately **6.5 kW/KW**.
- **Location:** UTeM Main Campus.

Air Conditioning and Climate Control

To further reduce electricity demand, the university utilizes specialized air conditioning units tailored to specific administrative and academic requirements:

- **Vice Chancellor's Office:** Equipped with Inverter 4-Star Energy Efficient Split Unit Air Conditioners.
- **Faculty Buildings:** The campus utilizes Variable Refrigerant Volume (VRV) Split Air Conditioners across various faculty locations to ensure modular and efficient cooling.

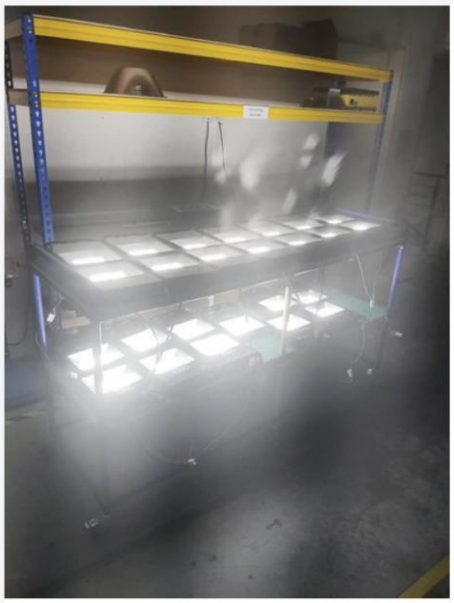
Lighting and Automation

UTeM integrates smart lighting solutions to reduce wastage in communal and academic spaces.

- **LED Transition:** Systematic replacement of traditional bulbs with LED lighting.
- **Sensory Controls:** Use of lamps equipped with light detection technology to ensure illumination is only active when environmental conditions require it.

UTeM continues to demonstrate its commitment towards effective **Energy Management and sustainability practices**through regular inspection, monitoring, and improvement of campus electrical facilities. A cooled lighting inspection visit was conducted to assess the condition, performance, and operational efficiency of the existing lighting systems.







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During the visit, the energy management team carried out observations and discussions with the relevant personnel to identify opportunities for improvement, ensure proper lighting performance, and optimize energy usage. The inspection also supports UTeM's efforts in maintaining efficient electrical systems and reducing unnecessary energy consumption.

This initiative reflects UTeM's continuous commitment to implementing energy-efficient practices, promoting responsible energy usage, and creating a more sustainable campus environment. Through systematic inspection

and maintenance activities, UTeM strives to enhance energy performance while supporting national sustainability and carbon reduction goals.

Summary of Impact

By prioritizing high COP chillers, VRV air conditioning systems, and wide-scale LED adoption, Universiti Teknikal Malaysia Melaka demonstrates a commitment to the UI GreenMetric standards. These technological deployments serve as the foundation for the university's broader goals in energy conservation and climate change mitigation.

Full technical documentation, including energy audit videos, site photography, and detailed equipment specifications, is maintained in the institutional repository: https://censei.utem.edu.my/ms/