CLIMATE ACTION PLAN

Introduction

A long-term alteration in the average weather patterns is referred to as climate change. The primary cause of these changes, which have a wide range of severe effects that have been observed globally, is human activity. Specifically, burning fossil fuels from both stationary and mobile sources raises the atmospheric concentrations of heat-trapping greenhouse gases (GHGs), which raises the average global surface temperature. Global warming is the term typically used to describe these temperature rises caused by humans. Common greenhouse gases including carbon dioxide, methane, and nitrous oxide are typically the causes for greenhouse effect. To lessen the risks and effects of our changing climate, people, organizations, and governments must act immediately and effectively at all levels.

The Sustainable Development Goals (SDGs) of the United Nations should be the focus of higher education institutions' governance, research, teaching and learning, partnerships, and community engagement. The goal of UMT's Climate Action Plan is to lower greenhouse gas (GHG) emissions through a coordinated effort involving the stakeholders of UMT.

The goal of UMT as an educational institution is to become a world-class university that has the power to profoundly alter society. The university needs to set an example in the fight against climate change by including the community in its research, teaching, and activities. Environment, Social, and Governance (ESG): When making managerial decisions, consideration of ESG factors is crucial. Measured under the environmental component are an organization's sustainability and its impact on the environment. The following aspects are covered by reporting: future environmental goals, efficiency, sustainability practices, waste management, resource management, and carbon footprint. Taking steps to mitigate climate change can lower the price of utilities, such as water and energy. In addition, teaching and research across all faculties and departments of the university can support chances for creative research as well as in the reduction of the GHG gases. In general, the source of ghg emission sources can be divided into the following categories based on their scope:

Scope 1: Direct emissions from sources that the UMT owns or controls; this includes emissions from the stationary and mobile combustion of fossil fuels.

Scope 2: Indirect emissions from the production of power that UMT purchases and uses.

Scope 3: Indirect emissions (other) refers to other emissions that result from UMT's operations but come from non-UMT owned or controlled sources. Examples of these include water consumption (emissions from UMT's water supply purchases), solid waste (emissions from landfills or incinerators), and transportation (emissions from

students' and staff's regular trips to and from UMT, air travel (including the emissions from that journey, which are covered under UMT), paper, and purchases.

Thus, the following GHG emission sources are subject to UMT's monitoring and reporting, such as the usage of electricity; water usage; university transportation; student transportation; staff transportation; air and ground transportation and solid waste.

In order to manage greenhouse gas risks and find possibilities for reduction, a greenhouse gas inventory (GHG inventory) is a list of emission sources and the associated emissions quantified using established methodologies (US EPA: GHG Inventory Development Process and Guidance). By March 1, 2024, the UMT GHG Inventory must be finished in order to determine the main sources of emissions. Our decarbonisation targets are aligned with a 1.5 degree climate scenario, as such our targets are to: 1. Reduce scope 1 and 2 absolute emissions by 50% before year 2030 from a 2024 baseline. We will achieve net zero emissions covering Scope 1, 2 and 3 emissions by 2050.

Strategies for Reducing Greenhouse Gas Emissions

Digitalisation of Campus

Using cutting-edge technology and digital solutions to minimize the use of physical resources, streamline operations, and cut down on paper usage. To lessen the demand for real resources, online platforms can be used for virtual meetings, e-commerce transactions, and digital documentation.

Increasing Energy Efficiency

At the UMT Kuala Nerus campus, energy and campus-wide lighting audits must be finished by January 2023 in order to find significant opportunities for energy savings. These may include retrofitting lighting; installing motion sensors and timers for lighting; improving building facility to green building.

To prevent a long-term increase in total greenhouse gas emissions, UMT will make sure newly constructed buildings meet green building certification standards. In order to ensure that all buildings meet strict energy efficiency standards and minimize the use of other resources, UMT will work to certify existing buildings as green buildings. It will also install energy management systems to maximize energy utilization and minimize energy waste.

A cheap method of conserving energy and lowering greenhouse gas emissions is to modify one's routines and behavior related to energy use. Examples of these include shutting off lights and air conditioning when not in use, regulating the temperature inside, and shutting windows and doors. Other potential campaigns and initiatives for behavior adjustment include encourage energy conservation on campus by organizing events; educating staff and students on a regular basis; recognizing and rewarding faculty, department, and individual energy-saving accomplishments. Install separate energy meters for each building to track energy use; promote energy-efficient lifestyle choices to further mitigate climate change, such as unplugging chargers when not in use and so on.

Using renewable energy and energy storage systems

Energy produced from quickly replenishing resources, such as sunshine, water, wind, geothermal energy, and biomass, is referred to as renewable energy. Batteries in an energy storage system allow the institution to lower its maximum demand, postponing the need for new power plants and network upgrades. Solar energy is a fantastic sustainable and green energy option, much like any other form of renewable energy. It lowers greenhouse gas emissions, enhances air quality, and conserves resources. For the purpose of installing an on-site rooftop solar system at UMT Kuala Nerus buildings, UMT and NEM signed a rooftop solar Power Purchase Agreement starting from year 2024. The system will be able to produce clean energy during its lifetime, allowing UMT to avoid emitting tons of CO_2. The UMT campus buildings in Kuala Nerus will benefit from the clean energy generated without any capital investment and acquire the energy at a lower rate from the usual TNB tariff thanks to NEM program. It may be possible to investigate more initiatives of a similar nature to lessen the UMT campus's reliance on burning fossil fuels to generate electricity. In order to lower UMT's maximum demands and, consequently, the university's maximum demand fees, two energy storage systems have been constructed on the university campus.

Furthermore, by delaying the expansion of network and generating capacity, energy storage technologies can prevent the country's greenhouse gas emissions from rising any further.

Improving Accessible Transportation

One of the university's main sources of GHGs is transportation. The commutes of faculty and staff, university vehicles, and air and ground travel are the main sources of greenhouse gas emissions from the transportation sector. Every year, a survey will be examined to learn more about staff and student commute patterns.

Enhancing the effectiveness and coverage of bus service; offering incentives and chances for biking or walking to campus; offering opportunities and incentives for carpooling to and from campus; improving parking management; researching and installing electric vehicle (EV) charging station(s) or charges. Alternatively, switch out the fleet's automobiles for more fuel-efficient models; switch out part of the fleet's cars for electric or hybrid vehicles; implement anti-idling laws and policies into effect.

To promote alternatives to air and ground travel, UMT encourage activities such as doing virtual meetings and visits via web platforms land Microsoft Teams. UMT will minimize air and ground travel by determining whether it is necessary.

Waste Stream Reduction and Recycling

Since natural resources, such as water, are finite and can have irreversible negative effects on the environment if overused or if waste is not adequately handled, UMT values these restricted resources. According to life cycle analysis (LCA), energy and power are needed for raw material extraction and processing, manufacture, distribution, usage, recycling, and disposal at the end. Without a question, effective waste management—both liquid and solid—becomes essential to lowering carbon emissions. UMT will therefore implement activities, such as through campaigns and instruction, encourage staff and students to practice responsible consumption and to remember the 5 R's: refuse, reduce, reuse, repurpose/repair, and recycle. In addition, UMT will put in place a waste and water management system to keep an eye on and control how much is used and wasted.

The UMT will also carry out campaign on compost food waste and biomass, such as leaves. Along with this, UMT will implement green purchasing policies and procedures.

Finally, UMT is aspirated to promote sustainability in the workplace to minimize waste and hazardous material production, as well as to encourage resource reduction and reuse.

Creation of Cutting-Edge Environmental Education and Research on Climate Change

UMT understands the value of funding the advancement of cutting-edge instruction and research to lower carbon emissions and fight climate change by involving staff and students in interdisciplinary research on climate change concerns; include sustainability and climate change in academic curricula and use the campus as a climate change and sustainability learning laboratory; foster collaboration between staff and students on the green campus projects.

Water Conservation

Rainwater harvesting programme will be implemented to promote responsible water usage to conserve this resource. Academic building or hostels will be installed with this efficient fixtures to create awareness about water conservation among stakeholders at UMT, and adopt water reuse systems for landscaping, toilet flushing or cleaning purposes.

Task Force on Carbon Monitoring

A Carbon Monitoring Task Force will be established to oversee the creation and execution of a thorough plan to reduce carbon emissions and track advancements made in implementing the Climate Action Plan. The task force's membership consists Pro-Naib Canselor (Strategic and Performance), the director of strategic, transformation and risk, head of the sustainable management centre, heads of the centre of property management, director of students 'affair, head of science officer, director of centre of academic management, JCKK member and student representatives.

Sustainable Supply Chain

UMT will be working together with suppliers to guarantee sustainable sourcing procedures, support sustainable materials, and lessen environmental effects. Service providers have the option to give precedence to collaborating with suppliers who adhere to ethical and social norms, utilize environmentally friendly products, and adopt sustainable production methodologies.