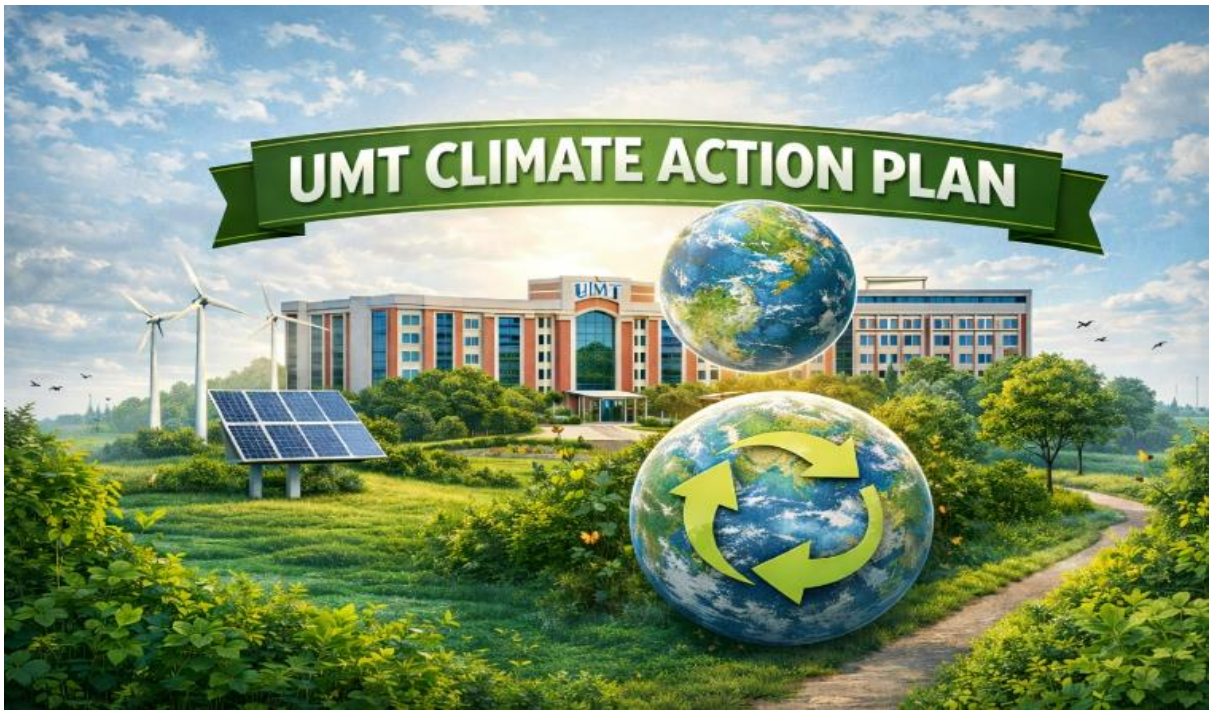
UMT

Climate Action Plan

(2026-2030)



UMT Climate Action Plan
(2026-2030)

Message from the President…….. 3
Message from the Rector ……..4
Executive Summary ……..5
UMT Climate Goals & Initiatives 2030……..6
Energy Conservation & GHG Emissions……7
Water managementand Climate Adaptation……..9
Transportation……..12
Waste Management……14
Environmental Education……...15
Green Infra Structure……..18
Collaboration……19
Looking forward……20

Message from the President

Pakistan is among the countries most vulnerable to climate change. In recent years, we have witnessed alarming signs, including rising temperatures, severe heatwaves, unpredictable rainfall, prolonged droughts, rapid glacier melting, and devastating floods. These challenges are affecting our agriculture, water resources, public health, economy, and the overall stability of our communities. Climate change has become one of the greatest national concerns of our time, demanding urgent attention and collective action.

Although the scale of this crisis is immense, by adopting certain measures, such as reducing emissions through clean energy, sustainable transport, and responsible industrial practices, we can mitigate the consequences of climate change. At the same time, we should strengthen our resilience by improving water conservation, climate-smart agriculture, early warning systems, disaster preparedness, and urban planning that can withstand extreme weather events. Public awareness and community participation will be equally vital, as meaningful change begins with informed and responsible citizens.

Universities have a special responsibility in this national mission. As centres of knowledge, innovation, and leadership development, universities must generate research-based solutions, support policy through scientific evidence, and train young minds to become climate-conscious professionals. By promoting interdisciplinary research, green campuses, student-led climate initiatives, and partnerships with government and industry, universities can play a decisive role in shaping a safer and more sustainable future for Pakistan. The climate challenge is real, but so is our capacity to respond. Let us act with urgency, unity, and vision, so that future generations inherit a country that is resilient and thriving.

(President)

Message from the Rector

Climate change is no longer an abstract global issue; it is a reality that Pakistan is experiencing firsthand. From extreme heat and smog to water shortages, droughts, and destructive floods, the impacts are becoming more frequent and more severe. These challenges threaten our health, our economy, our food and water security, and the wellbeing of future generations. As members of an academic community, we cannot remain observers. We must become part of the solution. Each of us has a role to play in reducing the causes of climate change and adapting for its consequences. Simple but consistent actions including conserving electricity and water, reducing waste, limiting plastic use, promoting recycling, planting trees, and choosing sustainable transport can create a meaningful collective impact. More importantly, we must adopt a mindset of responsibility, discipline, and environmental awareness in our daily lives, both on campus and beyond.

As a university, we are determined to face this challenge with seriousness and commitment. UMT's Strategic Development Plan (StratPlan35) sets out a clear ambition focusing on mitigation of carbon emission, conservation of energy and water and effective waste management in all the university campuses. We will strengthen our efforts toward a greener campus through energy-efficient practices, improved waste management, water conservation, and expanded plantation drives. At the academic level, we will encourage research, innovation, and student-led initiatives that contribute to climate solutions. Climate change is a test of our time, and it demands not only awareness, but action.

I call upon all students, faculty, and staff to join this mission with unity and determination. Let us stand together, take practical steps, and demonstrate that UMT is ready to lead by setting an example for a safer, cleaner, and more resilient Pakistan.

(Rector)

Executive Summary

The Climate Action Plan of the University of Management and Technology (UMT) provides a structured framework to reflect the University's response to climate change through measurable actions, institutional commitment, and community participation. In view of Pakistan's high vulnerability to climate-related risks, UMT is committed to reducing greenhouse gas emissions, strengthening climate resilience, and embedding sustainability into its academic and operational systems. UMT has already initiated a number of practical measures to reduce its environmental footprint and to promote awareness among students, faculty, and staff. Building on this progress, the University is expanding its efforts through a more comprehensive, implementable and focused plan. The Climate Action Plan of UMT integrates sustainability into education, research, campus management, and community engagement. The plan is aligned with national priorities and supports UMT's long-term vision of responsible growth, environmental stewardship, and climate leadership. UMT's Climate Action Plan is organized into the following key areas:

1. Energy efficiency and renewable energy adoption
2. Climate-resilient infrastructure and green campus development
3. Sustainable transportation and mobility solutions
4. Waste reduction, recycling, and safe disposal
5. Water conservation and sustainable water management
6. Green landscaping, plantation, and biodiversity initiatives
7. Sustainability in curriculum, awareness, and capacity-building
8. Research, innovation, and interdisciplinary climate solutions
9. Climate risk preparedness, health, and safety measures
10. Partnerships with government, industry, and communities

Through this plan, UMT reaffirms its commitment to becoming a climate-responsible institution and a leading contributor to Pakistan's sustainable and resilient future.

UMT Climate Goals 2030

Major Climate Goals to be Achieved by 2030

1. **Reduction of greenhouse gas (GHG) emissions** through measurable targets and campus-wide monitoring.
2. **Energy conservation and transition to renewable energy** across campus operations.
3. **Water conservation and sustainable water management** to reduce wastage and strengthen water security.
4. **Integrated waste management** (solid, liquid, hazardous, and e-waste) with segregation, recycling, and safe disposal.
5. **Plantation and green campus development** to improve tree cover, biodiversity, and heat resilience.
6. **Collaboration with national and international agencies** to support climate research, training, and policy engagement.
7. **Environmental education and public awareness** through curriculum integration, outreach, and student engagement.

A Few Initiatives also to be taken by 2030

In addition to the above major goals, we intend to take the following key initiatives at UMT:

- To strive for achieving **13th Sustainable Development Goals** i.e. Climate Action.
- To setup **UMT Centre for Climate Resilience and Sustainability** for creating awareness among the stakeholders and society about climate change.
- To carry out **research** on climate resilience.
- To introduce **Climate change/environment courses.**

1. Energy Conservation and reduction in GHG emissions:

UMT has initiated sustainability actions that contribute to greenhouse gas (GHG) emission reduction through energy-saving practices and awareness-based initiatives. The university is strengthening its institutional systems for sustainability planning and implementation through the Climate Action Plan Committee. UMT will develop a campus-wide GHG inventory, establish a baseline, and implement phased emission-reduction targets through measures such as energy efficiency, renewable energy adoption, sustainable transport, and waste minimization.

1.1. Greenhouse gasses (GHG) inventory:

A high-priority target for UMT is to develop and maintain a comprehensive greenhouse gas (GHG) emissions inventory and to conduct an annual audit of reported emissions. This initiative will enable the University to systematically identify GHG-related risks and opportunities, establish an evidence-based baseline, and formulate effective emission-reduction strategies and measurable targets.

1.2. Renewable Energy (RE) Transition:

At present, UMT fulfills **46%** of its total electricity needs through on-site renewable energy sources, mainly solar power, and therefore pays for only the remaining **54%** of the electricity used on campus. During peak periods, the University's electricity demand reaches about **4.3 MW**, while the installed solar power capacity is approximately **3.3 MW**. This reflects a significant step toward energy conservation, reduced reliance on conventional power sources, and a meaningful decrease in greenhouse gas emissions.

The solarization of the campus is being actively expanded. Solar panels have been installed on the rooftops of major university buildings, and additional solar structures have been set up in parking areas to make better use of available space and increase clean energy generation. Moreover, innovative **Solar Trees** are being installed at suitable locations across the campus to further enhance renewable energy capacity. Looking ahead, UMT aims to substantially increase

its on-site renewable energy production and meet at least **70%** of its total energy requirements from renewable sources by **2030**. To achieve this target, an estimated solar generation capacity of around **6.0 MW** will be required.

Solarization at UMT

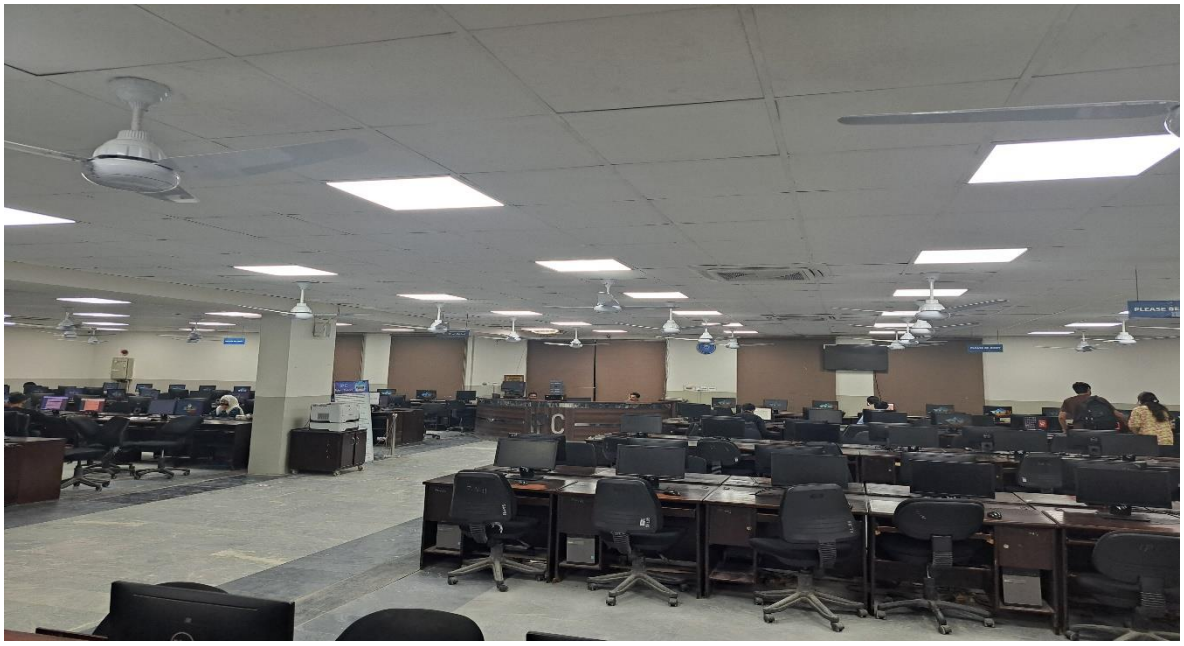
1.3. Energy Efficiency and GHG Emission Reduction

The University of Management & Technology (UMT) has successfully upgraded its indoor and outdoor lighting to high-efficiency LED and SMD fixtures. The University's energy efficiency policy ensures that space heating and cooling systems follow high energy-efficiency standards, in line with the guidelines of the National Energy Efficiency & Conservation Authority (NEECA) or the European Commission (EC).

As part of these efforts, **98%** of air conditioners, including HVAC units, have been upgraded to **DC inverter technology**, leading to a **40%** reduction in electricity consumption for air conditioning. In addition, **2,400** ceiling fans have been replaced with inverter models, each using only **30 Watts** compared to **100 Watts** for the older units. As a result, total power use from ceiling fans has dropped from **240 kW** to **72 kW**, giving a net reduction of **168 kW**, which equals a **70%** decrease in electricity use for fan operation.

Energy conservation is further supported through strict monitoring to ensure that all electrical appliances are switched off in empty rooms and offices after working hours. Despite these achievements, there is still strong potential to improve energy efficiency through building upgrades, such as better insulation, adoption of Green Building standards, installation of appliance timers where needed, and increased environmental awareness among students and staff.

Building on its ongoing work in energy efficiency and renewable energy, UMT is committed to reducing its GHG emissions per campus population by at least **50% by 2030**. To further reduce its carbon footprint, UMT also plans to shift its transport fleet to electric vehicles. In the coming years, electric buses will be purchased for student transport. At present, UMT operates a shuttle service for students and staff to reduce the use of private vehicles and promote sustainable mobility on campus. Reducing the carbon footprint by up to **30% by 2035** is a key component of UMT's Strategic Development Plan (**Strat Plan35**).



Energy Efficient Appliances

2. Water Conservation and Climate Adaptation

2.1. Drinking Water:

UMT provides free and safe drinking water across its campuses through strategically placed water dispensers, enabling students and staff to meet their

daily hydration needs while promoting the use of reusable water bottles. This initiative represents a simple yet highly effective strategy to reduce single-use plastic consumption, thereby minimizing the University's environmental footprint. The water dispensers are linked with RO plants, which are in the process of being upgraded, for each building on the campus. As multistorey buildings are under construction at the campus, it is proposed that in near future every building shall have its own RO plant to feed clean water according to the requirement of the building. By ensuring ready access to clean drinking water, UMT strengthens the resilience of its campus community against increasingly frequent urban heatwave events, contributing to both public health and sustainable campus practices.

RO Water Plant at UMT

2.2. Water conservation and water recycling:

UMT has introduced several measures to improve sustainable water management and conservation across its campuses. Stormwater runoff from roads and parking areas is regularly collected and reused for irrigating campus green areas, which improves water efficiency and supports a healthier landscape. In addition, five groundwater recharge wells have been constructed to capture stormwater, reduce on-campus pluvial flooding, and help replenish

local groundwater resources. After evaluating the performance of these recharge wells, UMT may construct more such wells in the near future. Looking ahead, UMT plans to further strengthen its water conservation efforts based on ongoing stormwater management studies. These studies will guide upgrades to the campus stormwater drainage system and help in the design and placement of additional recharge wells. The aim is to capture runoff from grey infrastructure across the campus and redirect it to green infrastructure for irrigation and groundwater recharge, with a target to cover at least 30–50% of grey surfaces by 2030.

In addition, a water recycling project is in progress to collect ablution water from the campus mosque in a storage tank, treat it, and reuse it for irrigation. Full implementation of this project is expected by 2030.

Together, these initiatives show UMT's commitment to sustainable water use, climate resilience, and efficient resource management. Water management is also a key part of the Green Master Plan (StratPlan35), which ensures the supply of clean drinking water on campus while promoting effective water conservation and proper drainage management.

2.3. Increasing Water efficiency:

Enhancing water-use efficiency is a central objective of UMT's sustainability and climate adaptation strategy. To achieve this, the University plans to install water-efficient taps and sanitary fixtures throughout its campuses, thereby reducing water consumption while promoting responsible resource use. Feasibility in this regard is under process. In addition, measures are being developed to minimize the discharge of reject water from the Reverse Osmosis (RO) plant, with plans to repurpose this water for beneficial applications such as irrigation and other non-potable uses in the near future. These initiatives reflect UMT's commitment to optimizing water resources, advancing sustainable campus operations, and building resilience against the growing challenges of water scarcity.

Water purification Plant

3. Transportation

3.1. Electric Buses in Future and Shuttle service:

As part of its commitment to reducing the campus carbon footprint, UMT actively promotes the adoption of sustainable and low-emission modes of transportation among students and staff. The University operates a dedicated shuttle service to provide convenient and efficient mobility, thereby discouraging the use of individual motor vehicles. For those who continue to rely on personal vehicles, UMT facilitates carpooling through a purpose-built in-house mobile application, promoting shared mobility and reduced vehicle emissions. Looking ahead, the University has set a strategic target to transition its entire transport fleet to electric vehicles by 2030, further advancing sustainable campus mobility and contributing to broader greenhouse gas emission reduction goals.

Electric Shuttle at campus

3.2. Bicycle and Pedestrian friendly infrastructure & Parking Areas:

UMT is committed to building a safe, accessible, and environmentally responsible campus through its Bicycle and Pedestrian-Friendly Policy. This policy explains how the University will give priority to pedestrians and cyclists across the campus. Its main goal is to promote sustainable, healthy, and inclusive ways of moving around. By encouraging walking and cycling, UMT aims to reduce the use of motor vehicles, cut greenhouse gas emissions, reduce traffic congestion, and improve air quality on and around the campus.

By 2030, UMT plans to reduce surface parking areas for vehicles and convert them into green infrastructure and pedestrian-friendly spaces. Under this plan, the University intends to shift all vehicle parking underground and connect all campus buildings through a well-planned network of bicycle lanes, pedestrian tracks, and properly maintained sidewalks. Moving 100% of parking underground will create more space for trees, green lawns, and plantation.

In addition, UMT is improving supporting facilities by ensuring secure and sufficient bicycle parking at key locations across the campus. This initiative reflects UMT's long-term vision of a climate-smart campus where mobility is safe, convenient, and strongly linked with sustainability and public well-being.

3.3. Scheme for Electric vehicles for UMT staff:

UMT remains strongly committed to the welfare and facilitation of its faculty and administrative staff by continuously improving the services and support systems available to them. As part of its forward-looking sustainability agenda, the University is planning to introduce a dedicated scheme in the near future to enable staff members to purchase electric vehicles (EVs) through easy and affordable instalment plans. This initiative will not only enhance staff convenience and mobility but will also contribute directly to UMT's climate responsibility by reducing dependence on fossil-fuel vehicles. By encouraging the shift toward cleaner transportation, UMT aims to lower greenhouse gas emissions, improve local air quality, and support broader efforts to reduce carbon emissions **by 2030** both on campus and across the city.

4.Waste Management

4.1. Waste Disposal:

UMT is committed to implementing a comprehensive, campus-wide waste reduction and recycling policy aimed at minimizing landfill disposal and promoting responsible resource use. Across the campus, waste collection is already being carried out through segregation at source to ensure that recyclable materials are properly recovered and diverted into recycling streams. This system is being strengthened further through awareness, improved collection practices, and enhanced recycling coordination. In addition, UMT recognizes that chemical and laboratory waste requires the highest level of environmental and safety compliance. Presently toxic waste is collected in labelled drums and wasted according to the nature of the waste. In future, all chemical waste—including hazardous and toxic laboratory waste—will be handled, treated, and disposed of safely through approved procedures, ensuring full compliance with national laws as well as relevant international standards and best practices **by 2030**.

4.2. Paperless work environment:

UMT has made significant progress toward creating a modern, efficient, and paperless administrative culture by shifting key office and management operations to digital platforms. Through the adoption of an Enterprise Resource Planning (ERP) system and CRM software modules, many administrative processes have been streamlined, digitized, and automated, leading to a substantial reduction in routine paper usage. This transition has also extended to academic operations, where the use of paper has been reduced considerably through the integration of Learning Management Systems (LMS) developed by UMT-Connected. These digital systems support online course management, learning resources, assignments, assessments, and communication—strengthening institutional efficiency while contributing directly to environmental sustainability through reduced paper consumption.

5.Environmental Education & Public Awareness

5.1. Course Content:

UMT has taken decisive steps to embed climate change and environmental issues into its educational programs. A substantial number of courses across various disciplines now include significant content on climate change and environmental sustainability. For instance, the Chemistry Department offers an Environmental Chemistry course at the BS level, while the MS (Chemistry) curriculum incorporates a dedicated Climate Change & Environment module.

Seminar arranged by School of Governance & Society

5.2. Awareness Measures:

Beyond formal coursework, the university regularly hosts lectures and seminars on environmental topics delivered by both local and guest experts. Moreover, MS and Ph.D. students across multiple departments are actively engaged in research projects that generate critical data on environmental challenges especially of coming years. Other than that, to improve public awareness regarding Climate Change and environmental issues, experienced faculty of UMT visits to local colleges and deliver lectures on topics like global warming and threats due to Climate Change.

Mdm. Maryam Aurangzeb, Senior Minister receiving shield from President and Rector UMT

5.3. In Future:

UMT's Strategic Development Plan (StratPlan35) sets a clear ambition: to position the University among the top 200 universities in Asia (QS Asia) and within the top 100 of the Impact Rankings by 2035. To achieve this vision, the plan advances six interdependent strategic themes: Academic & Faculty Excellence; Research, Innovation & Knowledge Impact; 360° Student Success; Institutional Governance, Quality & Sustainability; Global Engagement & Partnerships; and Societal Relevance & Impact. Each theme is supported by focused objectives, priority initiatives, and measurable Key Performance Indicators (KPIs) to track progress through 2035.

A major component of this long-term strategy is the Green Master Plan (2026–2035), which outlines ambitious targets for sustainability, including the mitigation of carbon emissions, conservation of energy and water, expansion of renewable energy use, increased plantation and green cover, improved waste management, and reduction of plastic waste. In the coming years, UMT is determined to deliver these goals and translate its sustainability commitments into measurable outcomes. UMT is fully committed to the systematic integration

of sustainability and climate action within its academic and institutional frameworks to advance the United Nations Sustainable Development Goals (SDGs). **By 2030**, the university aims to ensure that at least 5% of all courses—with a particular focus on undergraduate programs—incorporate explicit sustainability and climate-related learning outcomes. In addition, UMT plans to launch specialized management degree programs emphasizing sustainability, responsible leadership, and climate resilience. These initiatives will be implemented through structured curriculum development, faculty capacity building, and rigorous monitoring mechanisms, complemented by campus-wide awareness and engagement activities, thereby embedding sustainability principles across teaching, learning, and institutional practices.

6.Green Infrastructure:

UMT is committed to significantly expanding green infrastructure across its campus to maximize environmental benefits and meaningfully reduce its carbon footprint. Recognizing the critical role of trees, vegetation, and permeable land in carbon sequestration, temperature regulation, storm-water management, biodiversity enhancement, and air-quality improvement, UMT has set an ambitious target to raise green and permeable spaces to at least **60% of the total campus area by 2030**.

At present, UMT has already reserved substantial portions of the campus as open green spaces, and periodic tree plantation drives are regularly conducted. Building on this foundation, the University plans to further strengthen its afforestation and landscaping efforts by increasing tree cover substantially. **By 2030**, UMT aims to plant **80% more trees** through well-planned and recurring plantation campaigns, organized with the active participation of students, faculty, and staff. This initiative will not only enhance the campus ecosystem but also serve as a visible, measurable contribution toward climate resilience and long-term sustainability.

Solar Panels providing shade over walkway through greens

7.Collaboration with other Organization:

UMT has already established active collaborations with a wide range of institutions, organizations, and industries in both the public and private sectors that are engaged in addressing environmental challenges. A key example is its partnership with the Environmental Protection Agency (EPA) Punjab, which reflects UMT's commitment to supporting provincial efforts for environmental monitoring, regulation, awareness, and climate resilience. UMT firmly believes that the growing and increasingly complex impacts of climate change cannot be tackled in isolation; they require strong partnerships, coordinated action, and sustained teamwork among academia, government, industry, and society.

In addition to institutional partnerships, UMT experts are also contributing directly by assisting industries across Lahore and surrounding areas in identifying environmental risks and developing practical solutions, particularly in areas such as pollution control, waste management, sustainability planning, and compliance with environmental standards. Furthermore, several faculty members are engaged in international collaborations with environmental researchers and experts abroad, enabling UMT to contribute to global-level research and innovation on climate and environmental issues.

Looking ahead, UMT aims to significantly expand these national and international linkages to strengthen research, knowledge-sharing, and joint initiatives in environmental sustainability. By **2030,** the University envisions building a strong network of collaborations with leading universities, research centres, regulatory bodies, and organizations working on diverse aspects of climate change and environmental protection—positioning UMT as a key contributor to Pakistan's climate action and sustainability goals.

8: Looking Forward

By 2030, UMT plans to significantly strengthen its sustainability agenda by expanding green and permeable spaces across campus, increasing tree plantation, and enhancing biodiversity to reduce its carbon footprint. The University also aims to gradually shift electricity supply toward renewable energy sources, while introducing strong measures for water conservation, rainwater harvesting, and wastewater recycling for campus use. To promote clean mobility, UMT will encourage electric vehicles through staff-friendly schemes and improve bicycle- and pedestrian-friendly infrastructure. In addition, UMT will minimize garbage waste through segregation, recycling, safe disposal of hazardous waste, and a transition toward a paperless environment. To support these efforts through science and innovation, UMT also plans to establish a dedicated Centre for Environmental Research to lead research, partnerships, and practical solutions for climate and environmental challenges.