



CLIMATE ACTION PLAN — 2026 —



Misr University for Science & Technology
Center for Sustainability, Climate and Energy

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**MISR UNIVERSITY
FOR SCIENCE & TECHNOLOGY**

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Message from the University Leadership

Universities have a critical responsibility in addressing climate change and supporting the transition toward sustainable development. As a leading academic institution in Egypt, Misr University for Science and Technology (MUST) recognizes its role in advancing environmental sustainability and reducing greenhouse gas emissions.

This Climate Action Plan outlines the university's commitment to achieving a low-carbon campus through energy efficiency, renewable energy deployment, and sustainable campus operations.

By integrating sustainability into teaching, research, and campus **infrastructure**, MUST aims to become a *regional leader* in climate action and environmental stewardship.

Our long-term objective is to **transition toward a Net-Zero Campus by 2050**, in alignment with global climate targets and Egypt's national sustainability strategies.



Prof. Hala El Monoufi
President
Misr University for Science
and Technology

Message from the University Leadership

Universities today play a vital role in addressing environmental challenges and promoting sustainable development within society. As part of its commitment to environmental responsibility, Misr University for Science and Technology (MUST) continues to strengthen its efforts toward building a more sustainable and environmentally conscious campus.

Through strategic initiatives in energy efficiency, environmental protection, and community engagement, the university aims to contribute meaningfully to national and global sustainability goals. These initiatives focus on reducing environmental impacts, promoting responsible resource management, and encouraging innovation in sustainable practices across education, research, and campus operations.

As Vice President for Community Development and Environmental Affairs, I strongly believe that universities should act as catalysts for positive environmental change. By integrating sustainability into academic programs, research activities, and community partnerships, we can empower students and researchers to become leaders in shaping a greener and more resilient future.

Our vision is to foster a culture of environmental awareness within the university community while supporting practical solutions that address real-world sustainability challenges. Through collaboration, innovation, and responsible leadership, MUST seeks to strengthen its role as a model institution for the region.



Prof. Emad Khalil

Vice President for Community
Development and
Environmental Affairs

Misr University for Science
and Technology

Message from the University Leadership

Misr University for Science and Technology (MUST) is fully committed to leading by example in sustainability within higher education in Egypt. Our Sustainability Center is dedicated to overseeing and advancing our campus sustainability initiatives.

We are conducting detailed assessments of our carbon footprint, analyzing energy use, waste, water consumption, transportation, and overall campus operations to identify opportunities to reduce our environmental impact.

We are implementing strategies for energy efficiency, expanding renewable energy sources like solar power, enhancing recycling programs, and promoting sustainable transportation options.

In addition, we are integrating **sustainability** principles into our curriculum, research projects, and student activities to foster a culture of environmental responsibility among the university community.

Our vision is to create a model sustainable campus that inspires and educates the next generation of leaders who are equipped to address the complex challenges of climate change and sustainability in Egypt and beyond.

We are determined to make a positive impact and work towards a net-zero future for our campus.



Prof. Maged Ezzat Georgy

Dean, College of Engineering
General Supervisor, Sustainability Center
Misr University for Science and Technology

Message from the University Leadership

Sustainability is at the heart of our mission at Misr University for Science and Technology (**MUST**). As global challenges grow more complex, our responsibility as an academic institution is to lead with innovation, responsibility, and impactful action.

At the Sustainability Center, we are committed to integrating sustainability into every aspect of the university—education, research, operations, and community engagement.

We work to develop solutions that reduce our environmental footprint, promote resource efficiency, and inspire a culture of environmental stewardship among students, faculty, and partners.

By advancing sustainable practices and fostering collaboration across disciplines, we aim to position MUST as a regional leader in sustainability and a **model for responsible innovation**.

Together, we are building a **greener, smarter, and more resilient future**.



Dr. Wael Bahloul

Executive Director
Sustainability Center

Misr University for Science
and Technology



About MUST & Sustainability Vision

Misr University for Science & Technology (MUST) is one of Egypt's leading private universities committed to academic excellence, innovation, and sustainable development. Since its establishment, the University has played a vital role in advancing higher education, scientific research, and community engagement while fostering an environment that prepares students to address modern global challenges.

Located in 6th of October City, the university offers a wide range of undergraduate and postgraduate programs across multiple disciplines, including engineering, medicine, pharmacy, dentistry, information, technology, business administration, and media. Through its diverse academic portfolio and modern campus facilities, MUST provides a dynamic learning environment that integrates theoretical knowledge with practical experience. Through the implementation of a Climate Action Plan 2026, MUST seeks to become a regional model for sustainable universities and a contributor to Egypt's national climate and

MUST Strategic Sustainability Roadmap

Carbon Reduction & Climate Action

Implementing the university's **Climate Action Plan** to reduce greenhouse gas emissions and improve campus sustainability performance.

Renewable Energy Transition

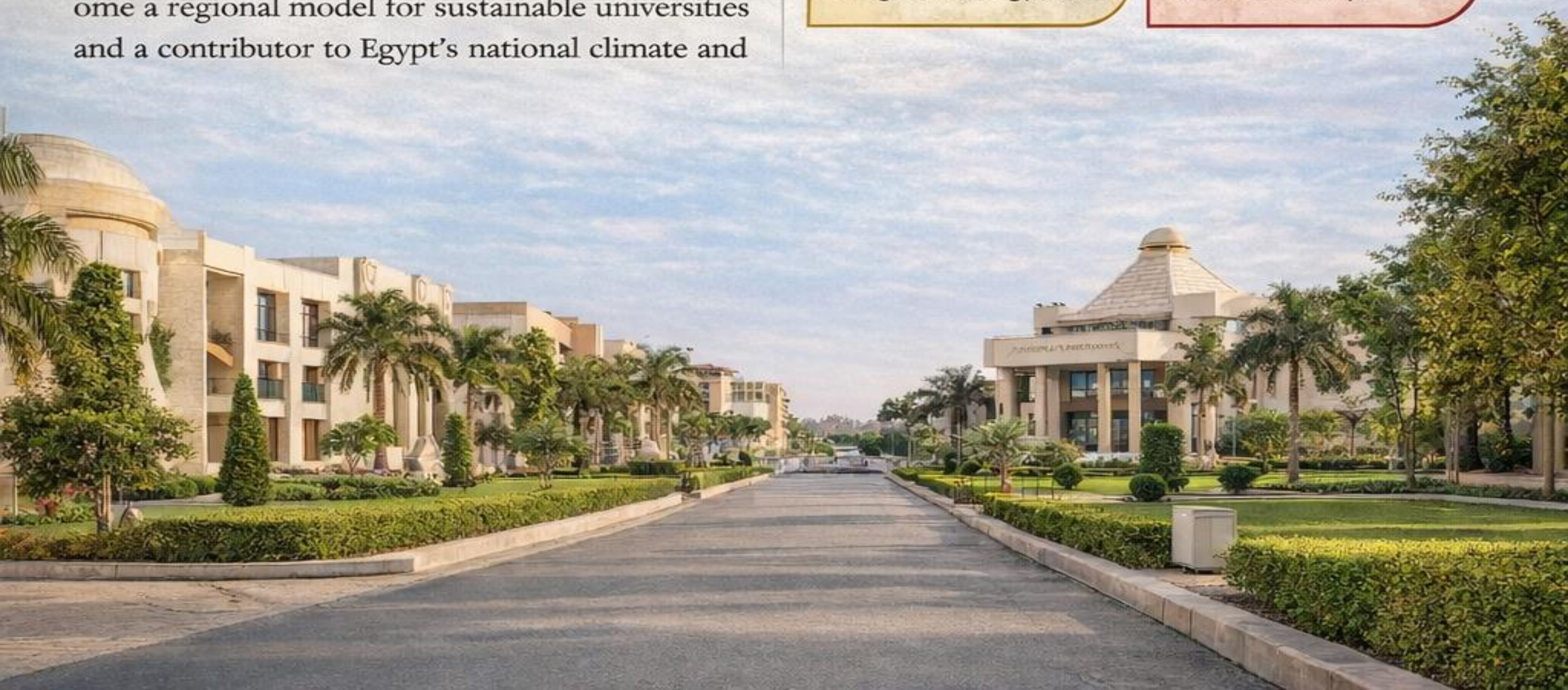
Expanding solar energy systems and clean energy technologies to increase the share of renewable energy across campus facilities.

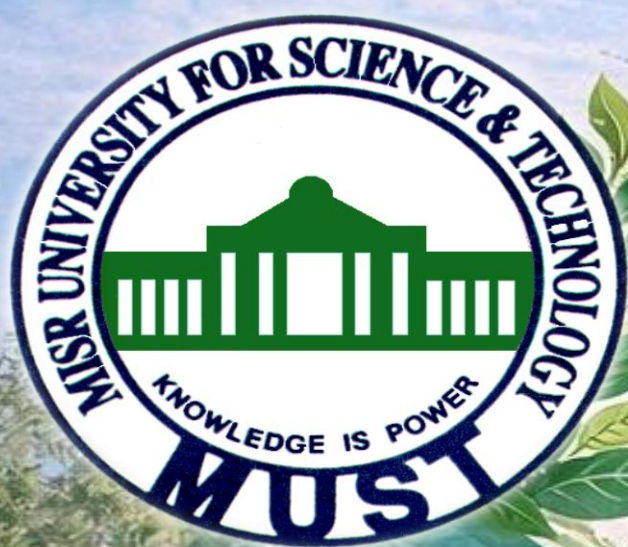
Sustainable Campus Operations

Improving energy efficiency, water management, and waste reduction through smart infrastructure and green building practices

Education & Community Engagement

Integrating sustainability into curricula, research initiatives, and student activities to foster environmental awareness and leadership.





Vision & Mission

Vision

Misr University for Science and Technology seeks to become a leading national and regional model for sustainable campuses in hot desert environments by developing an integrated educational and operational system managed with high environmental efficiency. The vision aims to achieve a genuine balance between academic expansion and protection of natural resources. It focuses on transforming the campus into a low carbon environment capable of adapting to present and future climate changes while ensuring sustainable use of energy, water, and materials.

The vision extends beyond operational aspects to encompass the university's educational and knowledge role in preparing generations capable of leading the transition toward a green economy and a more environmentally conscious society. The university as for every graduate to possess the knowledge and skills needed to understand contemporary climate challenges and contribute to solutions within their professional fields.

Mission

Misr University for Science and Technology is committed to implementing a comprehensive climate action approach that integrates sustainability principles across all aspects of its operations, from energy, water, and waste management to building design and operation, as well as curricula, **research**, and community service. The university aims to **reduce its carbon footprint** gradually and systematically while improving resource efficiency and minimizing waste, achieving both economic and environmental sustainability.

It also works to promote a culture of environmental responsibility among students and staff through continuous awareness programs, educational activities, and volunteer initiatives that encourage sustainable lifestyles both on and off campus. The university supports **applied** research that provides practical solutions to climate challenges, particularly those related to hot and semi-arid environments.





Key Initiatives

MUST IS COMMITTED TO MINIMIZING ITS ENVIRONMENTAL FOOTPRINT

To address the escalating challenges of climate change, Misr University for Science & Technology (MUST) is implementing an ambitious Climate Action Plan to minimize its environmental footprint and promote campus sustainability. This document highlights some of the key initiatives and objectives of our Climate Action Plan.

Improving Campus Efficiency

A significant portion of MUST's carbon emissions come from campus energy consumption. We are committed to becoming more efficient through optimizing energy use in buildings and facilities, adopting green building technologies, conserving water, and enhancing waste management practices.

Renewable Energy Transition

MUST aims to increase the share of renewable energy by expanding solar energy systems and clean energy technologies. We are also exploring innovative clean energy solutions, such as smart microgrids, to reduce reliance on conventional electricity sources.

Mobilizing for Collective Action

By involving students, faculty, and staff in sustainability programs and research, MUST fosters environmental awareness and leadership. The university is also engaging with local and international partners to advance climate resilience and drive positive change within and beyond campus.

SUMMARY OF MUST'S CLIMATE GOALS

- ✓ Reduce greenhouse gas (GHG) emissions by enhancing energy efficiency and transition to renewable energy.
- ✓ Increase the share of renewable energy to 25% of campus consumption by 2026.
- ✓ Reduce carbon emissions to achieve net-zero emissions by 2050.

ULTIMATE GOAL

CARBON NEUTRALITY BY 2050

Greenhouse Gas Inventory

WHAT WE MEASURE AND HOW WE TRACK IMPROVEMENTS

IN ALIGNMENT with MUST and the Climate Action Plan (CAP) 2026, the university has developed a GHG Inventory to measure, monitor, and reduce carbon emissions across all operations. This inventory supports the university's commitment to sustainability, energy efficiency, and achieving its climate goals toward carbon neutrality by 2050.

Emission Sources

For GHG accounting purposes, MUST's major emissions sources include:



Electricity & Fuel



Transportation



Water & Waste

Scope Definitions

- 1 Scope 1** – Direct emissions from fuel combustion (e.g., generators, vehicles).
- 2 Scope 2** – Indirect emissions from purchased electricity.
- 3 Scope 3** – Emissions from transportation, waste, water, and other campus activities.



Inventory Notes and Limitations

-  GHG Inventory developed using international (IPCC) methodology.
-  Emissions calculated using actual energy usage data from campus facilities.
-  Inventory includes direct emissions from operations.
-  Baseline data for 2020 used to track progress toward 2050 target.

ULTIMATE GOAL

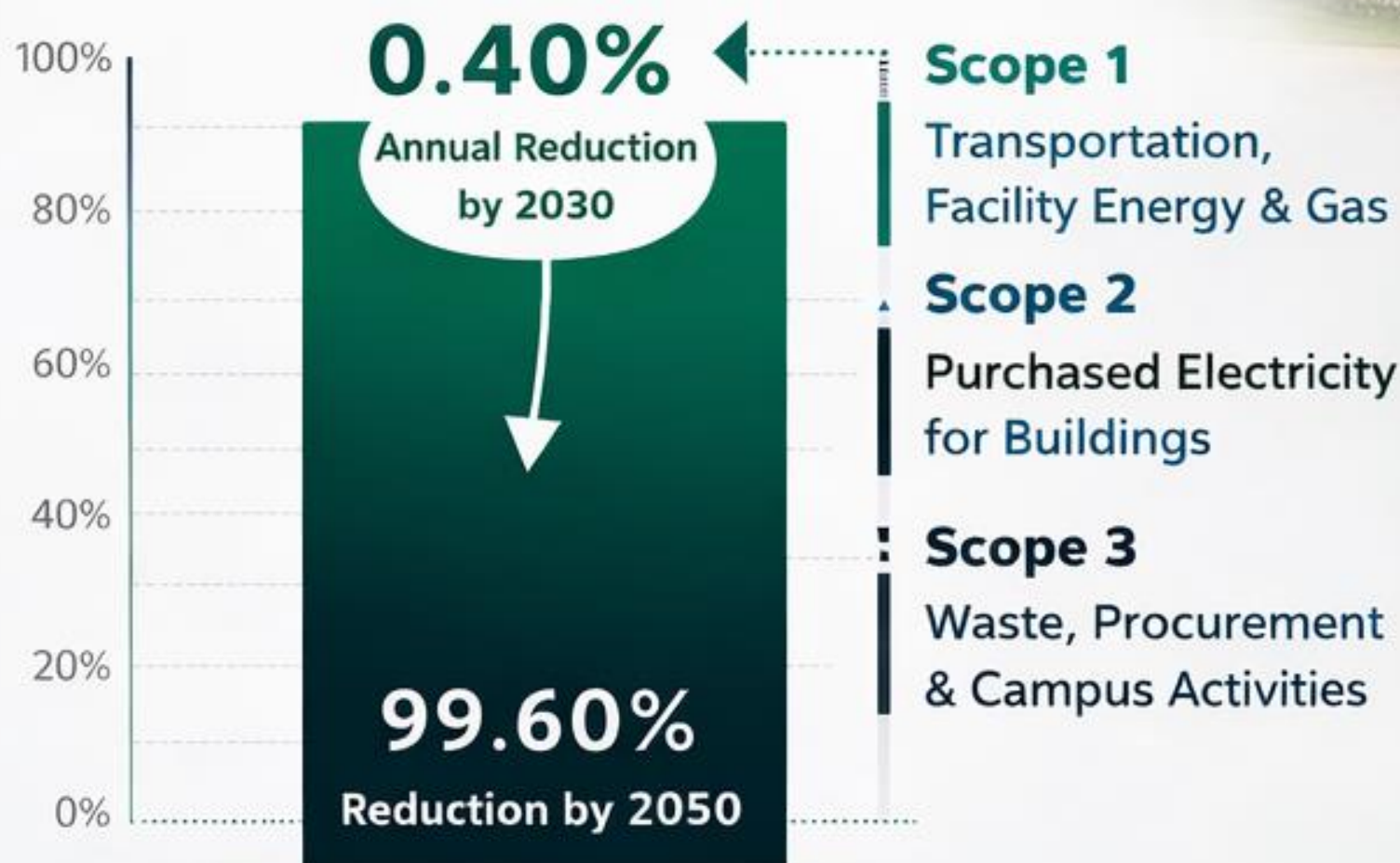
CARBON NEUTRALITY
BY **2050**



Emissions Reduction Strategies

MUST'S GOALS

MUST is committed to achieving carbon neutrality by **2050**, with intermediate targets to reduce emissions from campus operations, energy, and transportation through integrated action and **innovation**.



KEY INITIATIVES



Renewable Energy & Efficiency Upgrades



Green Transportation & Mobility



Waste Management & Recycling



Sustainable Procurement



Awareness & Engagement Programs

THE CASE FOR CARBON NEUTRALITY

Benefits for MUST: Tangible environmental, financial, and social impact.



CHAMPIONING CLIMATE ACTION

Leadership in education for sustainable development.



MEETING STAKEHOLDER EXPECTATIONS

Students, faculty, and community engagement.



PROTECTING FUTURE GENERATIONS

Healthy campus & resilient infrastructure.



ENHANCING QUALITY OF LIFE

Green spaces, clean air, efficient services.



Carbon Neutrality by 2050

MUST'S GOALS

MUST is committed to achieving carbon neutrality by **2050**, with has developed a decarbonization roadmap to guide its efforts, shown below.

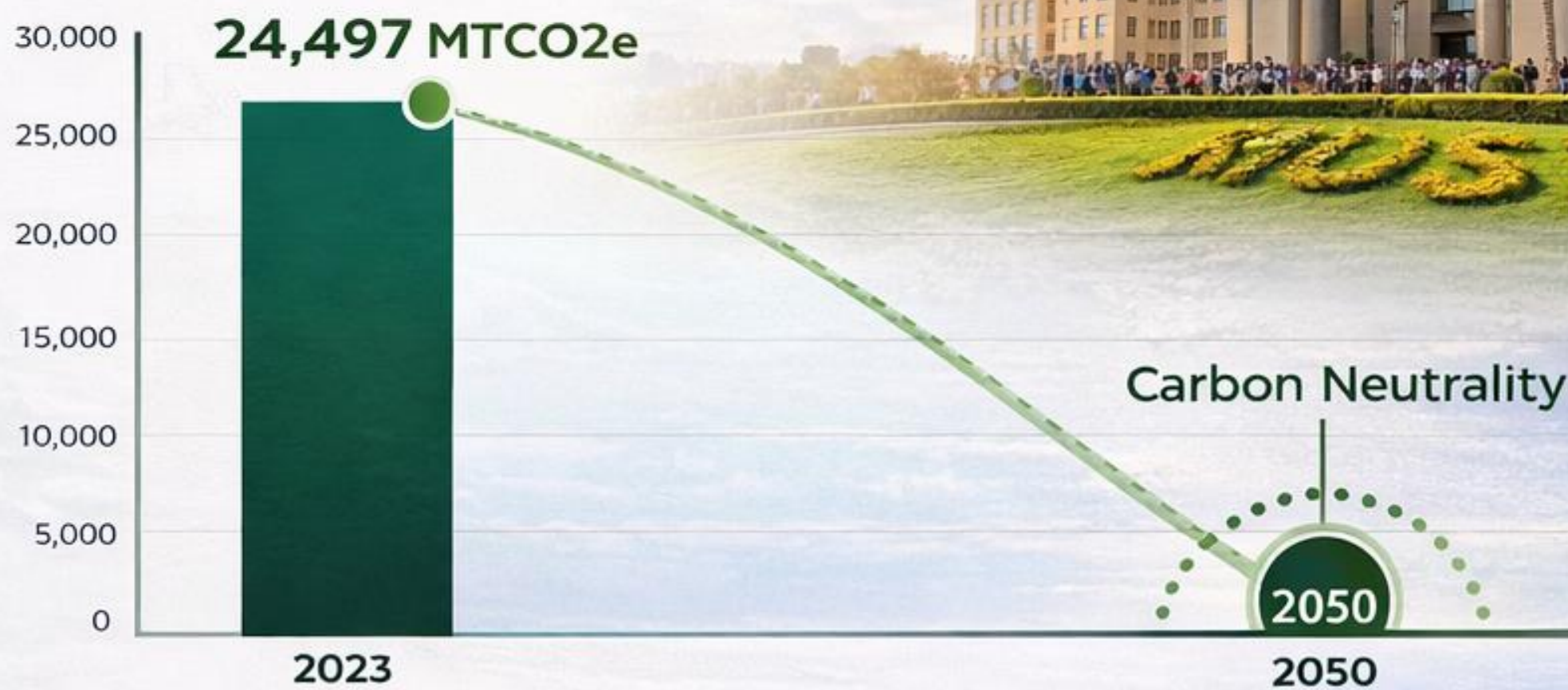


Figure 1: MUST's Emissions Decarbonization Roadmap to 2050.

MUST's carbon neutrality roadmap follows a strategic path, starting with comprehensive greenhouse gas (GHG) inventories to identify key emission sources, followed by technical and financial feasibility assessments of measures to reduce and offset emissions. These efforts are aimed at achieving carbon neutrality by 2050.

KEY DECARBONIZATION MEASURES



ENERGY EFFICIENCY MEASURES

Implementing building upgrades, LED lighting, optimized HVAC systems, and smart energy

Figure 2. Potential energy efficiency measures.



RENEWABLE ENERGY TRANSITION

Deploying on-site solar panels and procuring green energy to reduce dependence on fossil fuels.

Figure 3: Renewable energy transition diagram.

SUSTAINABLE TRANSPORTATION

Expanding green campus transportation options and promoting low-carbon mobility

Figure 4: Green campus transportation strategies.

BEHAVIORAL DEMAND SIDE MANAGEMENT

Engaging campus community in sustainable practices, reducing energy consumption, and minimizing waste.

Figure 5: Campus behavioral action programs.



GHG Emissions Reduction Strategies



GHG Emissions Reduction Measures Explained

MUST is committed to achieving and retrofitting projects, which include high-efficiency lighting, HVAC systems, and modern windows.

1 EQUIPMENT REPLACEMENT

Replacing old building equipment at the end of its life with more efficient alternatives.

6 BUILDING ENERGY OPTIMIZATION

Targeting efficiency optimization such as data center cooling, occupancy sensor-controlled smart LED lighting, and automating systems to minimize unnecessary stand-by operation when not in use.

7 WORK EFFICIENCY OPTIMIZATION

Introducing initiatives to ensure a minimum energy consumption level at work, as well as encouraging behaviors that reduce unnecessary lighting, air conditioning use.

5 RENEWABLE ENERGY GENERATION

Sourcing clean energy from on-site renewable energy projects including solar installations to meet part of the university's electricity requirements.

GHG Emissions Reductions Strategies Hierarchy

REDUCING ON-SITE ENERGY USE

Implementation of additional EEMs based on expanding technologies, twice-yearly audits, and ongoing evaluation.

PROCURE CARBON-FREE ENERGY

Procure carbon-free electricity from the grid (if the amount purchased covers the full utility load, no off-site and purchased carbon-free energy)

FEASIBILITY STUDY OF ON-SITE CARBON-FREE ENERGY

Conduct feasibility studies of on-site (depending on feasibility off-site equal to amount X) and purchased

GENERATING OFF-SITE CARBON-FREE ENERGY

Generate carbon-free electricity off-site equal to the amount purchased from the utility grid.

GENERATING OFF-SITE CARBON-FREE ENERGY

Generate carbon-free electricity off-site equal to the amount purchased from the utility grid goal.

Figure 4: Climate Action Plan GHG reduction strategies presented leading up to 2050. (CECs or offsets are only a last resort step if other measures are not applicable or feasible).

ALL STEPS ARE NECESSARY AS PART OF THE SEQUENCE LEADING TO NET-ZERO.





Key Sustainability Milestones at MUST

HIGHLIGHTS FROM 2021 TO 2026



Establishment of the Sustainability Center

Misr University for Science and Technology established the Sustainability and Climate Change Center to lead the university's environmental initiatives. The center was created to coordinate sustainability programs, support climate action planning, and integrate environmental responsibility into university operations and academic activities.

2021



Launch of Environmental Awareness and Campus Programs

The university initiated several environmental awareness campaigns and sustainability activities targeting students and staff. These initiatives promoted responsible energy use, waste reduction practices, and environmental engagement through educational programs, workshops, and student-led activities.

2022



Initial Carbon Footprint Assessment

MUST began evaluating its institutional carbon footprint by assessing emissions related to electricity consumption, transportation, and campus operations. This step represented the foundation for future emission reduction strategies and the development of the university's climate action framework.

2023



Development of the Climate Action Plan

The university developed its **Climate Action Plan**, outlining strategies to improve resource efficiency, reduce greenhouse gas emissions, and integrate sustainability principles into teaching, research, and campus management.

2024



Strengthening Partnerships and Sustainable innovation

By 2026, the university aims to **strengthen** collaboration with government institutions, industry partners, and civil society organizations to advance sustainability research, and implement practical climate solutions suited to hot and semi-arid environments.

2026





Detailed Action Plan by Sector

Sector 1: Energy and Buildings

Cooling may account for more than half of electricity consumption in desert environments.



1

Energy and Buildings

Short-Term (1–3 years)

- Replace all lighting with LED
- Install motion sensors
- Central temperature control
- Turn off unused equipment
- Awareness programs and maintenance



Medium-Term Actions (3–7 years)

- Rooftop solar systems
- Solar carports
- Thermal insulation improvements
- Double-glazed reflective windows
- Replacement of outdated air-conditioning systems
- Smart energy management systems

2

Sustainable Transportation

Public Transport

- Increase number of buses
- Improve schedules
- Dedicated routes
- External collection points



3

Water Management

Objectives:

- Reduce heat island effects
- Improve air quality
- Provide comfortable environment



4

Water Management

Drip Irrigation

- Gradual introduction of electric buses
- Electric service vehicles
- Charging infrastructure
- Peripheral parking



5

Green Spaces & Thermal Adaptation

Objectives:

- Reduce heat island effects
- Improve air quality
- Peripheral parking



6

Water Management

Private Car Management

- Encourage carpooling
- Progressive parking fees
- Peripheral parking



6

Education & Research

Integrate sustainability into curricula

- Common courses for all students
- Support applied research
- Establish sustainability research
- Campus-based graduation projects



7

Sector 5: Waste Management

Integrate sustainability into curricula

- Common courses for all students
- Support applied research
- Establish sustainability research center



8

Institutional Governance

Integrate sustainability into curricula

- Plan implementation
- Data collection
- Emissions reporting
- Coordination among departments
- Campus-based graduation projects





Recent Sustainability Event

Carbon Footprint Measurement and Management

Towards a Sustainable University

Sustainability Center
Misr University for Science and Technology (MUST)

Event Overview

This workshop is one of the recent activities organized by the Sustainability Center at Misr University for Science and Technology (MUST) as part of the university's **Climate Action Plan** and Sustainability engagement initiatives.

The workshop brought together university leaders, faculty members, researchers, and students to discuss **practical approaches** for **measuring, analyzing, and managing greenhouse** gas emissions within university campuses.



Future Activities

- ◆ Sustainability Conferences
- ◆ Training Workshops
- ◆ Student Sustainability Projects
- ◆ Research Initiatives on Climate and Energy

Organized in cooperation with the
**Egyptian Organization for
Standardization and Quality**



Organized in cooperation with the Egyptian Organization for Standardization and Quality.



Join the Sustainability Journey

Led by the **Sustainability Center**, this action plan offers simple steps for our university community to contribute to sustainability initiatives and help create a greener, more sustainable campus environment.

Be a part of the change. Be a part of the transformation. Be a part of the journey.

01 Reduce your Plastic Footprint

- Carry your reusable water bottle, reusable shopping bags, and avoid single-use plastics.
- Participate in campus recycling programs.
- **Learn more at: MUST Sustainability Events**



03 Recycle Properly

- Separate waste, paper, plastic, and electronics for recycling.
- Drop off recyclables at designated collection points on campus.



05 Conserve Water

- Fix leaks, and use water wisely.
- Report any leaks to campus maintenance promptly.
- **Learn more at: MUST Sustainability Events**



07 Reduce Food Waste

- Take only the food you need, compost food scraps, and support campus initiatives to minimize food waste.
- **Learn more at: Greening MUST Events**



02 Travel Green

- Use public transportation, bike, carpool, or walk whenever possible for greener travel.
- Check out public transport schedules and carpooling options to go green.



04 Save Energy

- Switch off lights, power down unused electronics and keep air conditioning efficient during summer.
- Join related **campus workshops about energy conservation**.



06 Plant and Protect Green Spaces

- Help plant and care for campus gardens.
- Participate in tree-planting activities, green events, and volunteer for greening projects.
- Join upcoming events on campus.



08 Get Involved and Volunteer

- Participate in sustainability campaigns and attend workshops and seminars.
- Engage in community clean-ups and awareness campaigns.
- Join **MUST Sustainability Week** and volunteer projects.



**Be a part of the change.
Be a part of the transformation.
Be a part of the journey.**





Conclusion

Misr University for Science and Technology recognizes that addressing climate change requires a long-term institutional commitment and a collective effort from the entire university community. Through this **Climate Action Plan**, the university establishes a comprehensive framework to reduce greenhouse gas emissions, **enhance resource efficiency**, and **integrate sustainability** into education, research, and **campus operations**.

The proposed actions across energy, transportation, **water**, **waste management**, green spaces, and institutional governance provide a practical roadmap toward building a resilient and **low-carbon campus**. These efforts not only contribute to **environmental protection** but also support economic efficiency and improve the quality of life for students, staff, and the surrounding community.

MUST aspires to transform its campus into a **living laboratory** for sustainability, where innovation, research, and education work together to develop solutions for climate challenges, particularly those relevant to hot and semi-arid environments.

By strengthening partnerships with **governmental institutions**, industry, and civil society, the university seeks to expand its impact beyond campus boundaries and contribute to national and regional **sustainable development goals**.

Through **continuous monitoring**, transparency, and **community engagement**, Misr University for Science and Technology will continue progressing toward a more sustainable, resilient, and **climate-responsible future**.