

Khalifa University Sustainability Plan Proposal 2025-30





جامعة خليفة
Khalifa University

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MESSAGE FROM THE PRESIDENT

SUSTAINABILITY – OUR CORE VALUE

As a research, innovation and enterprise-intensive higher education institution, Khalifa University remains committed to one of its core values – sustainability. Our ongoing initiatives and all our efforts are directed towards contributing to the UAE's 2050 Net Zero objectives and our endeavor encompasses the UN Sustainable Development Goals at national and global scales.

We have achieved Estedama Pearl Rating System (Pearl-2), established a Sustainability Taskforce, actively participated in the COP28 UAE Summit, launched the first of its kind Environmental Awareness Survey, initiated phasing out of single-use plastics on and off campus, and are currently developing a five-year sustainability plan. It will be our firm objective to be a leader in sustainability, incorporating sustainable practices into all aspects of our operations, curriculum, and community engagement, to equip students to be global citizens, and advocate for a sustainable future.

I look forward to working with the extended community and our stakeholders to demonstrate our commitment to sustainability as we seek to achieve these strategic objectives.

H.E. PROF. EBRAHIM AL HAJRI
President of Khalifa University.





INTRODUCTION

OVERVIEW

Khalifa University of Science and Technology is committed to achieving net-zero emissions by 2050, in alignment with The UAE Net Zero by 2050 strategic initiative. By doing so, we demonstrate our dedication to sustainability and environmental responsibility, supporting the global efforts and the objectives of UN Conference of Parties. Our aim is to develop comprehensive strategies to reduce greenhouse gas emissions and limit the rise in global temperature.

This initiative reflects our determination to play a pivotal role in creating a more sustainable future for our community. With this, Khalifa University remains even more committed to supporting implementation of the UN Sustainable Development Goals at national and global scales, to address challenges including those related to poverty, inequality, energy crises, water and food shortage, climate change, environmental degradation, as well as peace and justice. degradation, as well as peace and justice.

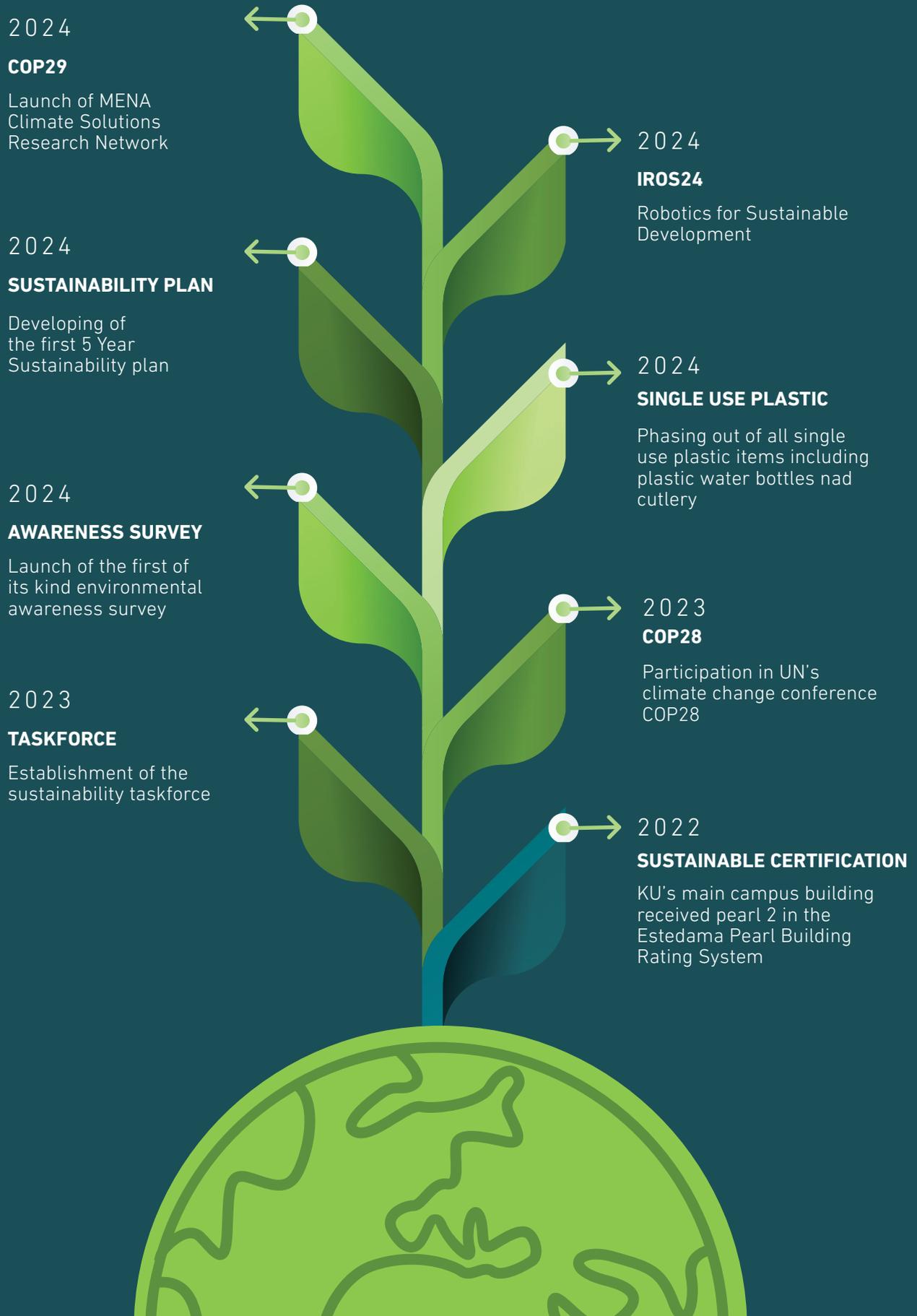
OUR VISION



To be a leader in sustainability, fostering a campus culture that values environmental stewardship, social equity, and economic responsibility. We aspire to incorporate sustainable practices into all aspects of our operations, curriculum, and community engagement, preparing our students to be global citizens and advocates for a sustainable future.

By 2050, we aim to achieve carbon neutrality, reduce our ecological footprint, and cultivate a resilient and inclusive campus environment that serves as a model for others locally and globally.

SUSTAINABILITY MILESTONES



ACHIEVEMENT

- Khalifa University's RIC-2D has partnered with UAE-based Zero Carbon Ventures and installed cutting-edge graphene and hydrogen production technology. It will aim to develop applications for different waste gas blends, such as those in the energy industry, agriculture, landfill, and wastewater treatment plants
- A composite polylactic acid (PLA) and nanomaterial membrane, a sustainable and green membrane using graphene oxide and carbon nanotubes, to safely and effectively remove excess nutrients from wastewater.
- New practical modeling approach to examine the conversion of carbon dioxide and hydrogen to methanol using a copper-based catalyst. Their model offers a reliable tool for revealing the role of active sites that may control the performance of a CO₂ hydrogenation catalyst.
- First working prototypes of NavaMASK, a fully 'biodegradable', 'biocompatible', environment-friendly and novel anti-viral adaptive face mask with nanofibers that will have strong anti-microbial properties.
- Six 'bold steps' for accelerating progress on achieving net-zero industrial emissions by 2050. These steps are... (1) quintupling financing, (2) expediting technology transfer, (3) investing in human resources, (4) setting binding targets, (5) steering social acceptance and (6) enacting a new global treaty and shaping climate clubs.
- New electrocatalysts for efficient and scalable conversion of furfural into furoic acid and furfural alcohol (bio-oil into bio-fuel).
- The UAE Government's choice of Khalifa University to locate the Polar Research Center as part of its initiative to enhance the country's status among global leaders in polar research was a historic moment.
- Abu Dhabi's AgriFood Growth & Water Abundance (AGWA) cluster for innovation and talent development.
- ENGEOS lab and the Earth Science department deployed Snow Ice Mass Balance (SIMBA) to study ice in Antarctica.
- KU Podcast: Sustainability talks
- Green Day
- Grow a Plant Competition
- Food Waste Hackathon KU Sustainability Projects Exhibition
- Sustainability Art Exhibition and Lifestyle Fair
- Design Thinking For High School Students Workshop - Part of Future of Abu Dhabi Initiative
- Engineering Modeling Workshop: Sustainable Packaging Design Challenge
- Sustainability E-gaming Competition
- Climate Change MATLAB Hackathon
- KU Sustainability Club Initiatives
- Plastic Water Bottles Recycling/Conversion



THEME 1

INFRASTRUCTURE AND RESOURCE MANAGEMENT

Khalifa University aims to achieve a sustainable and healthy community. We are committed to supporting Abu Dhabi's environmental goals and the UAE's Net Zero targets by improving the University's resource consumption resulting in a reduction of our scope 1 and scope 2 by 10% against our 2024 baseline. The following resources will be monitored :



ENERGY

GOAL

To achieve net-zero emissions by 2050 in alignment with UAE's Net Zero 2050 strategic initiative

TARGETS

- 3% reduction in energy consumption throughout campuses annually
- 10% of energy consumed will be sourced from renewable energy sources by 2030
- Reduce total scope 2 carbon emissions arising from energy consumption by 10% by 2029-30 against the baseline year 2023-24

KEY ACTIONS

- Install additional on-site renewable energy sources and energy storage systems, when cost-effective
- Replace electrical equipment with energy efficient equipment

WHERE WE ARE

LED lights

- 8 SAN Campus buildings have either been retrofitted or in progress to be retrofitted with LED lights with a total of 14,493 lights.
- In the Main Campus, 4,860 additional LED lights to be installed.

Motion sensors for the electricity

- 6 SAN Campus buildings were installed with 416 motion sensors and 2 more buildings yet to be installed.
- Security guards in SAN Campus are instructed to turn off lights that are not in use in any building without motion sensors.
- In the Main Campus, 6 new buildings and 2 old ones have motion sensors. Currently, in progress to install sensors in the other old buildings (3 more buildings).

Solar Panels

- Khalifa University is using solar energy to power 36 solar street lights at SAN Campus and 14 solar street lights at Main Campus.
- 18 solar panels are being installed to power the Khalifa University logo.

WATER

GOAL

To help achieve the objectives of the UAE Water Security Strategy 2036 that aims to ensure sustainable water access.

TARGETS

- 5% reduction annually in water consumption throughout campuses
- Introduce treated water for irrigation at SAN Campus

KEY ACTIONS

- Install additional on-site water saving technologies across campuses.
- Install water gathering innovations such as solar powered atmospheric water collection devices
- Planting of drought resistant and native trees on University grounds.
- Ensure periodical checks /maintenance of water pipelines to avoid leakages
- Conduct a feasibility study for the use of treated water for irrigation at SAN Campus

WHERE WE ARE

Aerators and sensor-based water tap system

- At SAN Campus, 17 sensors were installed in one building and 16 aerators were installed 3 buildings.
- At the Main Campus, 459 sensors and aerators were installed in both old and new buildings.
- Smart energy monitoring system will soon be implemented in 6 buildings at SAN Campus and 10 buildings at the Main Campus.
- Utilize AC water in irrigating and maintaining University's landscapes and green areas.

WASTE

GOAL

To support the emirate of Abu Dhabi in reaching its zero waste goals

TARGETS

10% reduction in waste generated throughout campuses by 2030 against the 2024 baseline

KEY ACTIONS

- Install recycling bins across campuses
- Install solvent recycling equipment in chemistry laboratories
- Eliminate single use plastic items in vending machines
- Compost food and organic waste on-site
- Emphasize the '3Rs' strategy – 'Reduce, Reuse and Recycle'
- Promote environment-friendly alternatives to Khalifa University community

WHERE WE ARE

- Plastic bottles were eliminated throughout campuses
- Plastic cutlery was eliminated from food and beverage vendors
- In the process of revamping the recycling bins
- In the process of acquiring a food composting machine

TRAVEL

GOAL

Promote sustainable travel among Khalifa University community to lower the impact of travel-related emissions on the environment

TARGETS

10% reduction in scope 1 carbon emissions associated with travel to and from campuses by 2030 against the 2024 baseline

KEY ACTIONS

- Conduct a survey among students, staff and faculty to assess per capita carbon emissions from travel
- Provide charging stations for electric vehicles
- Provide electric scooters for University community to commute between buildings
- Provide shaded and cooled walking pathways to encourage community to walk more
- Encourage carpooling
- Prioritize local experts and professionals to minimize carbon footprint associated with air travel.

CURRENT STATUS

- 12 electric car charging stations have been installed at SAN Campus
- 15 electric car charging stations have been installed at the Main Campus
- 4 electric car charging stations have been installed at Um Al Lulu building (female dorms)
- Buses commissioned for commuting between the two campuses for staff, faculty and students

SUSTAINABLE PROCUREMENT

GOAL

To procure all our goods and services in a sustainable manner

TARGETS

Increase in percentage of purchases from environmentally responsible suppliers

KEY ACTIONS

- ⦿ Develop a clear policy that prioritizes sustainability in procurement process
- ⦿ Develop metrics to measure progress in influencing our suppliers and partners to procure environmentally friendly supplies and services
- ⦿ Encourage staff to understand the environmental impact of purchases, considering the whole life-cycle cost of equipment and services

WHERE WE ARE

Procurement department has received the ISO 20400 certificate in sustainable procurement

SUSTAINABLE BUILDING AND REFURBISHMENT

GOAL

Campuses to be nationally and internationally certified as sustainable buildings

TARGETS

Obtain sustainable building certifications for all campus buildings by 2030

KEY ACTIONS

- ⦿ Retrofit campuses to meet the standards of the desired certifications
- ⦿ Ensure the campus facilities and grounds are maintained in an environmentally-conscious manner
- ⦿ Increase in percentage of refurbishment projects that are certified at least BREEAM 'Very Good' or equivalent;
- ⦿ Receive external awards for sustainable construction and design

WHERE WE ARE

Main Campus buildings are rated PEARL II in the Pearl building rating system "Estedama" for design.

THEME 2

ACADEMIC AND RESEARCH EXCELLENCE



Khalifa University aims to embrace sustainability within its academic research and curriculum to prepare students to tackle environmental challenges in all aspects of personal and work life.



By integrating sustainability principles across disciplines, we equip our students with the knowledge, skills, and values needed to address environmental, social, and economic issues, shaping a more sustainable future



By integrating sustainability into academic pursuits, Khalifa University can cultivate a culture of responsible scholarship that not only elevates academic achievements but also contributes positively to society and the planet.



ACADEMIC EXCELLENCE

CURRICULUM

GOAL

Every undergraduate and graduate student, regardless of their degree program, will have access to sustainability knowledge

TARGETS

10% of students will have completed courses related to sustainability

KEY ACTIONS

- ⦿ Organize sessions between the academic faculty teaching sustainability courses and students to promote sustainability education
- ⦿ Create a short training course on sustainability that would give students extra credit or could equate to 10 volunteering hours.
- ⦿ Explore collaboration opportunities with a certified institution to give a sustainability certification to students

RESEARCH

GOAL

- ⦿ Faculty members will be encouraged to include sustainability-themed topics in their research
- ⦿ Graduate and undergraduate students will be encouraged to work on sustainability-themed projects

TARGETS

- ⦿ For goal 1: 25% of published research is focused on sustainability or has an element of sustainability.
- ⦿ For goal 2: 25% of student projects are sustainability-themed.

KEY ACTIONS

- ⦿ Incorporate sustainability criteria into faculty scholarships awards
- ⦿ Continue to support sustainability-focused research and development projects, in alignment with existing Strategic Research Areas
- ⦿ Establish a 2024 baseline for the funded research projects related to the UN SDGs.
- ⦿ Establish a 2024 baseline for number of projects students worked on that are related to SDGs
- ⦿ Establish a 2024 baseline to determine the percentage of published articles with elements related to one of the SDG's goals

THEME 3

COMMUNITY ENGAGEMENT

Introducing sustainability into community engagement practices signifies a commitment to fostering long-term environmental, social, and economic well-being. Engaging the community with the environment and providing opportunities for our students to see firsthand how their actions impact the environment is crucial to starting the journey of slowly but surely changing their lifestyle to a more sustainable one.

By integrating sustainable principles into our interactions and initiatives, we not only address immediate needs but also lay the groundwork for resilient and thriving communities for generations to come.

We will strive to engage our community in sustainability and environmental activism through the following:

- ① Programs and Initiatives
- ① Environmental Occasions and Exhibitions
- ① Awareness Emailers

PROGRAMS AND INITIATIVES

GOAL

Equip our students with the necessary skills and knowledge to tackle sustainability and environmentally related challenges in their personal and professional lives.

TARGETS

15% of students will have graduated from sustainability related programs by 2030

KEY ACTIONS

- ① Coordinate with internal departments to create innovative and effective programs related to sustainability
- ① Promote external sustainability programs such as WiSER (Women in Sustainability, Environment and Renewable Energy)
- ① Collaborate with external entities to conduct national and international programs such as Deajyon Eco-exchange program

ENVIRONMENTAL EVENTS AND EXHIBITIONS

GOAL

Every Khalifa University staff, faculty and student will have the opportunity to engage in environmental activism and sustainability

TARGETS

Annually, 5% of the Khalifa University community will participate in at least one event or activity focused on sustainability and the environment

KEY ACTIONS

- To prepare an annual calendar that includes the following:
 - External campaigns and activities such as clean ups and tree planting
 - Internal campaigns and activities such as workshops, speaker sessions, and debates
- Collaborate with entities to bring forward their environmental initiatives and incorporate them in community projects
- Collaborate with external entities to showcase their efforts related to sustainability and the environment to our community

AWARENESS EMAILERS

GOAL

Raise the awareness of the community on topics of high priority to Khalifa University management, Abu Dhabi and the UAE as a whole

TARGETS

- Establish an environmental awareness baseline of 2024 for Khalifa University community
- Increase the environmental awareness level by 10% in 2030 against the 2024 baseline

KEY ACTIONS

- Khalifa University to send out monthly awareness emailers to its community each focusing on a specific area of sustainability
- To measure the impact of the awareness materials on the community through an annual survey

SUPPORT AND WAY FORWARD



QS SUSTAINABILITY RANKING.



ISO 37001 – ANTI-BRIBERY MANAGEMENT SYSTEMS.



INITIATE DIFFERENT WORKING GROUPS FOCUSED ON VARIOUS SUSTAINABILITY THEMES.



RESOURCES ALLOCATION: DEDICATED BUDGET AND RESOURCES FOR ALL PROJECTS AND INITIATIVES.



