



Responsible Consumption and Production

Ensure sustainable consumption and production patterns.



Universiti Malaya's Commitment to Responsible Consumption and Production

Universiti Malaya (UM) continues to be a leader in promoting sustainable practices through its commitment to Sustainable Development Goal 12 (SDG 12), which emphasises responsible consumption and production. The university's initiatives in 2023 reflect a deepened commitment to reducing waste, minimising environmental impact, and fostering a culture of sustainability across its campus and community. As Malaysia's premier institution of higher learning, UM plays a pivotal role in setting the standard for responsible resource management in the education sector, aligning its efforts with global sustainability trends.

The initiatives undertaken this year build upon UM's established policies, such as the UM Sustainability Policy 2021-2030 and the UM Master Plan 2050. These guiding documents outline the university's strategic direction for achieving a carbon-neutral and zero-waste campus. In 2023, significant strides were made in reduce waste generation, sustainable procurement practices, and the reduction of single-use plastics, which are key components of SDG 12. These efforts not only contribute to environmental sustainability but also enhance the university's reputation as a global leader in sustainable practices. UM's alignment with global sustainability trends, particularly in areas such as climate action, resource efficiency, and sustainable development, ensures that its efforts resonate on a global scale.

Operational Measures for Sustainable Consumption & Responsible Waste Management

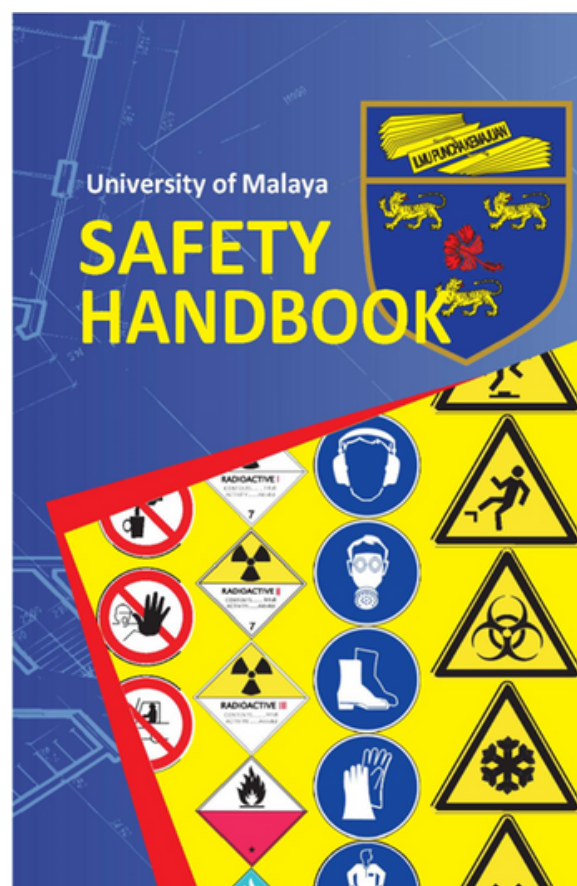
Universiti Malaya (UM)'s operational measures for promoting sustainable consumption are integral to its commitment to SDG 12 and align closely with global trends towards resource efficiency and circular economy practices. One of the key aspects of this commitment is the **ethical sourcing of food and supplies**. In 2023, UM further strengthened its Green Procurement Handbook & Guideline, promoting and ensuring that all products and services procured by the university adhere to stringent environmental and social standards. This policy supports the global shift towards ethical and responsible sourcing, ensuring that the products consumed at UM are not only sustainable but also contribute to the university's broader environmental goals.

These practices are in line with global efforts to enhance resource efficiency and reduce the environmental impact of consumption. By prioritising suppliers who demonstrate a commitment to ethical practices, UM ensures that its operational measures are both responsible and sustainable.

Additionally, UM has established comprehensive policies for waste disposal, particularly with regard to hazardous materials. In alignment with the Occupational Safety and Health Act 1994, UM's Safety and Health Policy ensures the health, safety, and welfare of its staff, students, and others impacted by its activities. For detailed procedures on hazardous waste disposal, refer to the University of Malaya Safety Handbook, section on Safety and Health Policy, pages 45 to 49. The Division of Infrastructure Maintenance plays a key role in managing hazardous waste, adhering to global best practices to minimise environmental impact. To ensure a smooth process, the Division of Infrastructure Maintenance has introduced a Scheduled Waste Management plan.

Below (left): Universiti Malaya Green Procurement Handbook & Guideline

Below (right): University of Malaya Safety Handbook (Reviewed 2023)



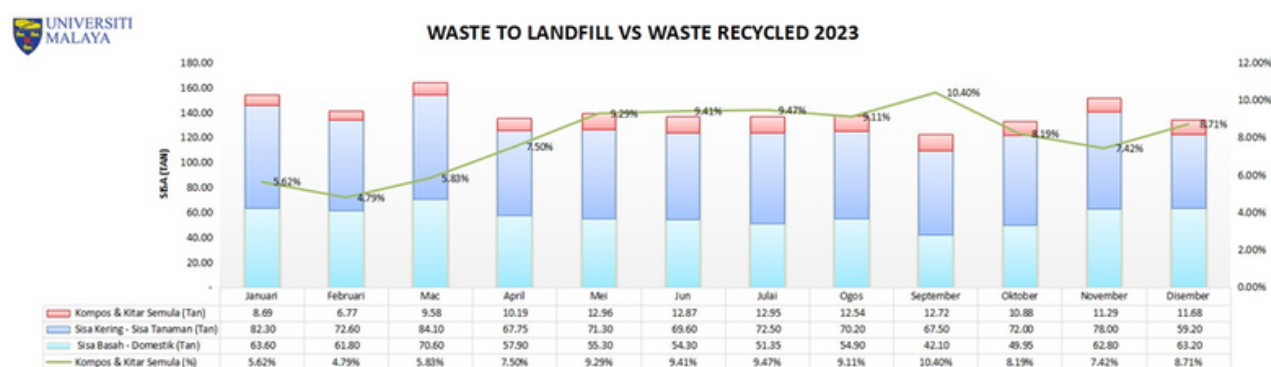
Waste Tracking: Waste Disposal to Landfill vs Recycled

Universiti Malaya (UM), through its Sustainability Policy 2021-2030, underscores a firm commitment to sustainable waste management as part of its broader environmental responsibility. Detailed on page 15 of the policy, UM highlights the essential practice of measuring and monitoring the amount of waste sent to landfill compared to that which is recycled. This systematic tracking forms the backbone of UM's waste management approach, allowing the university to gather valuable data that supports informed decision-making and continual improvement in waste reduction and recycling efforts.

By actively measuring these quantities, UM aims not only to assess its environmental impact but also to implement strategies that reduce waste generation across campus. This effort aligns with UM's Eco-Campus Blueprint, which outlines specific waste management goals and advocates for a campus culture rooted in sustainability practices. To reinforce this culture, UM promotes the principles of reduce, reuse, and recycle (3R), encouraging its community to minimise waste production and engage in sustainable consumption habits.

To support these practices, UM has introduced various initiatives, including the installation of recycling bins at key locations around the campus and the development of an Intelligent Recycling Centre to streamline recycling efforts and make sustainable choices more accessible to students, staff, and visitors. Additionally, UM's waste management policy includes guidelines for handling hazardous materials, mandating strict adherence to disposal procedures as outlined in the UM Safety Handbook. This ensures that both solid and liquid hazardous wastes are managed safely and responsibly, minimising potential environmental and health risks.

UM's waste disposal and monitoring initiatives demonstrate the university's proactive approach to environmental stewardship, helping cultivate an eco-conscious campus community and setting a model for sustainability in higher education. This commitment reflects UM's strategic vision to reduce its ecological footprint while promoting a sustainable and safe environment for all campus members.



Above: Waste to Landfill VS Waste Recycled 2023

Waste Reduction and Recycling Initiatives

Universiti Malaya (UM)'s commitment to waste reduction and recycling has seen significant progress in 2023, reflecting the global trend towards a circular economy. The university's Zero Waste Centre (UM ZWC), launched as part of its broader sustainability efforts, has been pivotal in reducing the amount of waste sent to landfills. This year, UM reported a notable decrease in overall waste generation, with a 31% reduction compared to the previous year, amounting to 975 metric tons. Of this, 61 metric tons were recycled (which include composting), reflecting a 6% reduction in recycled waste, while 914 metric tons were sent to landfills, marking a 32% reduction in landfill waste.

These improvements are the result of targeted initiatives such as the monthly Recycling & BuyBack Program, which has been actively promoted across the campus. The success of these programs is evident in the steady increase in participation rates and the significant reduction in waste generation. By fostering a culture of recycling and responsible waste management, UM is making substantial progress toward its goal of becoming a zero-waste campus by 2030, in alignment with the global circular economy movement. These efforts contribute to UM's standing as a leader in resource efficiency and sustainability.



Above: Poster announcement for the 19th Recycling & Buyback Program held in August 2023
(Source: UM Zero Waste Centre)

Below: The program's impact highlights total waste recycled, income generated from the sale of recyclables, and carbon emissions avoided
(Source: UM Zero Waste Centre)



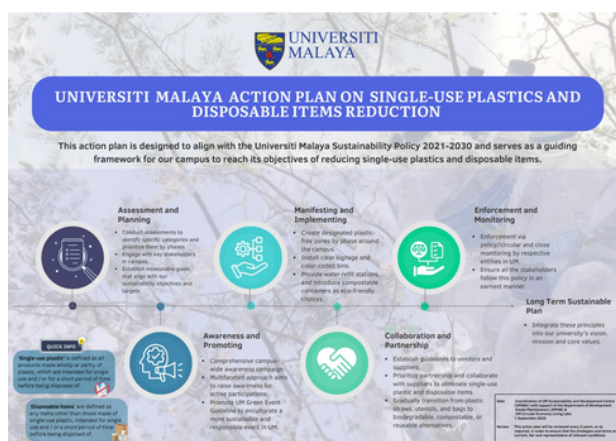
Single Use Plastic Minimisation at Universiti Malaya

Reducing the use of single-use plastics is another critical area where UM has made significant strides in 2023. The UM Action Plan on Single Use Plastic and Disposable Item Reduction, introduced as part of the university's broader sustainability strategy, has been instrumental in driving down the consumption of these materials. This plan aligns with global trends that emphasise the importance of reducing plastic waste and moving towards sustainable alternatives.

The success of these initiatives is evident in the growing awareness and participation rates across the university community. Regular campaigns, such as Plastic-Free Day, have become a staple of campus life, reinforcing the university's commitment to reducing plastic waste.

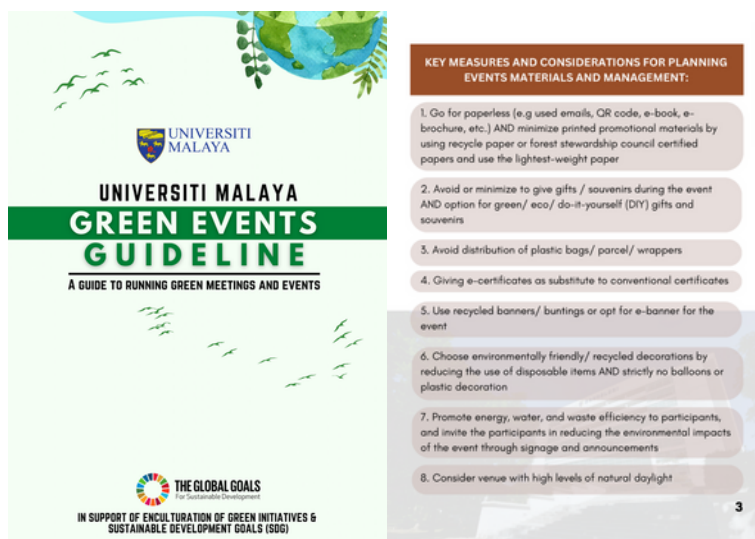
These efforts not only contribute to the university's sustainability goals but also position UM as a leader in the fight against plastic pollution in the region, in line with global efforts to address the plastic waste crisis. This initiative is further supported by the UM Green Events Guideline: A Guide to Running Green Meetings and Events (2023) (Phase 2), which outlines the processes and implementation strategies for reducing the use of plastic and disposable items (pages 9-12). These guidelines also extend to outsourced services and the supply chain, ensuring sustainability throughout UM's operations.

This commitment is in a strategic alignment with Malaysia Plastics Sustainability Roadmap 2021-2030 by the Ministry of Natural Resources and Environmental Sustainability (NRES).



Above: Phase 1: implementation of Universiti Malaysia Action Plan on Single-Use Plastics and Disposable Items Reduction (1st Edition, 2022)

Below: Phase 2: Implementation of UM Green Events Guideline: A Guide to Running Green Meetings and Events (2023).



Universiti Malaya (UM) has established a proactive policy aimed at minimising plastic use as part of its broader commitment to sustainability. Detailed in the [UM Sustainability Policy 2021-2030](#) on page 15, this policy reflects UM's dedication to reducing single-use plastics and other disposable items across campus. This is reflected in the Waste Management part on expanding the scope of waste reduction programs particularly single-use plastic and disposable items at all areas and facilities of the campus. The university actively promotes practices that encourage the use of sustainable alternatives, thus decreasing the dependence on plastic materials that contribute to environmental pollution.

As part of its waste reduction strategy, UM has integrated initiatives such as encouraging the campus community to adopt a “paperless” approach, which complements the push toward responsible consumption and waste minimisation.

Furthermore, UM's policy on plastic reduction extends to its supply chain, promoting the responsible use of resources throughout services and suppliers associated with the university. This strategy aligns with national guidelines on sustainable consumption, reinforcing the university's commitment to reducing the impact of plastic waste and supporting Malaysia's roadmap towards zero single-use plastics by 2030.

Through these focused efforts, UM aims to foster an environment that not only minimises plastic waste but also instills a culture of sustainability among students, staff, and other stakeholders, thereby contributing to the university's vision of a greener, more sustainable campus.



Universiti Malaya's Commitment to Minimising Disposable Items for a Sustainable Campus: Fostering Sustainability Among Outsourced Services, Suppliers, and Across the Supply Chain

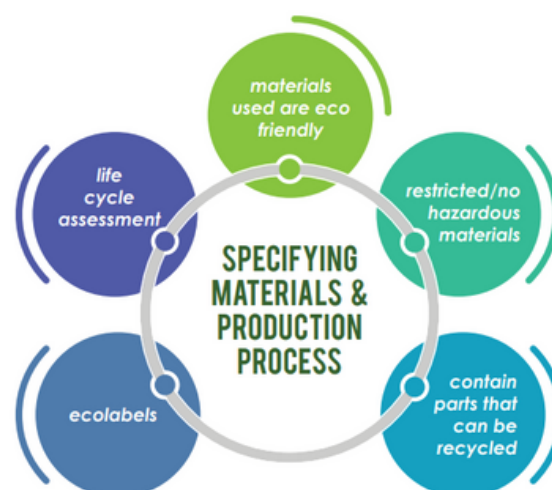
Universiti Malaya (UM) is deeply committed to sustainability, as outlined in its [Sustainability Policy 2021-2030](#) and [UM Action Plan](#), particularly in reducing disposable items across all campus operations and within its supply chain. The Waste Management section highlights a comprehensive approach to minimise single-use plastics and disposables, fostering a culture of sustainability that influences UM's internal operations and extends to suppliers and outsourced services. Through these efforts, UM aims to significantly reduce the environmental impact of disposable waste, aligning itself with both national and global sustainability standards.

A key strategy is expanding waste reduction programs across the campus, promoting a shift towards reusable and digital alternatives over disposable options. This "paperless" approach encourages environmentally conscious behavior among students, staff, and visitors, embedding sustainable practices into everyday routines. UM's waste reduction efforts also include revising procurement and service guidelines, requiring suppliers and contractors to adopt sustainable practices. By prioritising products that are durable, reusable, and eco-friendly, UM extends its commitment to reducing disposable waste beyond the campus.

The Green Procurement initiative in Core Area 6 of the [UM Eco-Campus Blueprint](#) further solidifies this commitment. This initiative mandates that all Responsibility Centers (RCs) prioritise environmentally friendly and locally sourced products in procurement decisions, ensuring that UM's standards are met at every level. The guidelines also promote recyclability, energy efficiency, and durability, integrating sustainability into all aspects of resource use and procurement.

UM's approach includes active engagement with suppliers and outsourced partners, ensuring they align with UM's sustainability goals. By 2023, UM aimed to have fully implemented these standards, supporting eco-friendly practices across all outsourced services and suppliers. Through education and awareness programs, UM fosters a campus-wide understanding of environmental conservation, ensuring that its community and external partners contribute to a sustainable, low-waste environment.

By embedding these initiatives, Universiti Malaya reinforces its commitment to responsible resource management, creating a cohesive, eco-conscious campus environment that supports a sustainable future for generations to come.



Above: Specifying Materials & Production Process From [UM Green Procurement Handbook](#)

Supporting Sustainable Campus Operations

UM's commitment to responsible consumption and production extends to its campus operations, where sustainable practices are embedded in the university's daily activities. The UM Master Plan 2050, which outlines the university's long-term vision for a sustainable campus, includes key principles for environmental sustainability. These principles guide the development and management of UM's infrastructure, ensuring that all new projects and renovations are designed with sustainability in mind. In 2023, UM made significant progress in implementing these principles, particularly in the areas of energy efficiency, water conservation, and waste management.

One of the standout initiatives of 2023 was the expansion of UM's Eco-Campus Living Labs, UM Carbon Neutrality Acceleration Living Labs and UM Circular Economy Living Labs, which serve as a testing ground for innovative sustainability practices in UM. These living labs provide valuable insights into the effectiveness of various sustainability measures, from energy-efficient building designs to waste-to-energy technologies.

The data collected from these projects is used to inform future campus developments, ensuring that UM remains at the cutting edge of sustainable campus operations. Through these efforts, UM is not only improving its own environmental performance but also contributing to the global body of knowledge on sustainable university campuses, in alignment with global sustainability trends.



3.6 Key Principle 6

ADVOCATING ENVIRONMENTAL SUSTAINABILITY



Why is this important?

Environmental sustainability advocacy is the foundation for creating a world-class sustainable university campus. It brings a wealth of knowledge to the fore and enables sharing an urban green environment with the campus community and the wider public to enjoy and learn. The central location and lush forested areas of the UM campus provide the perfect opportunity for showcasing an ecologically sound urban campus that is well preserved and enhanced with green technologies.



What is the focus area?

To strongly advocate environmental sustainability, the focus areas are Urban Ecological Campus (Urban Eco-campus), Rimba Ilmu Botanical Garden and Utilization of Green Technologies

In line with the focus areas, the existing environmental landscape will be enhanced for better biodiversity, physical access, and linkages between pockets of green areas. Existing flora and fauna species on campus will be conserved. Connecting pockets of forested areas within the campus will

enrich the biodiversity and make the UM campus an exemplary urban ecological campus. All existing water bodies within the campus will be rehabilitated into delightful and clean landscape features to enhance the campus's urban ecology.

These improvements will enable outdoor learning and recreation that will enhance the well-being of the campus community. Furthermore, new and existing green technologies will be used to develop UM's environmental and landscape infrastructures and public amenities.



Figure 44 Illustration of Greenery in University of Malaysia Main Campus 2050

Above: Snapshots of the UM Master Plan 2050: Campus Planning Blueprint

Sustainability @ UM
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UNIVERSITI MALAYA

THE GLOBAL GOALS
For Sustainable Development

Congratulations and All the Best
UM Living Labs @ UMSDC Grants Recipients
Cycle 2023/2024
(September 2023 - September 2024)

**UM ECOCAMPUS
LIVING LABS GRANT**

DR. SARAH ABDUL RAZAK
FACULTY OF SCIENCE UM

LL2023ECO001
The Rimba Project 2.0: Ecosystem Services of Urban Forest towards Climate Change Mitigation

DR. SHAHID BASHIR
HICOE - UMPEDAC

LL2023ECO004
Electronic Waste Management: A Cost Effective Extraction of Precious Metals and Possible Rare Earth Elements

DR. FATHIAH MOHAMED ZUKI
FACULTY OF ENGINEERING UM

LL2023ECO002
Smart and Sustainability Engineering Urban Farm for Food Security

ASSOC. PROF. IR. DR. HAZLEE AZIL ILLIAS
FACULTY OF ENGINEERING UM

LL2023ECO005
Solar-Powered Smart Monitoring System for Occupancy and Energy Use in Lecture Rooms

IR. DR. NASRUL ANUAR ABD RAZAK
FACULTY OF ENGINEERING UM

LL2023ECO003
Recycling of Polyethylene Terephthalate Wastes for Prosthetic Application

Best Wishes:
UM SUSTAINABILITY AND DEVELOPMENT CENTRE (UMSDC)
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EcoCampusUM - Rimba Ilmu - MaklerSpaceUM

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Cycle 2023/2024
(September 2023 - September 2024)

**UM ECOCAMPUS
LIVING LABS GRANT**

ASSOC. PROF. DR. AZZULIANI SUPANGAT
FACULTY OF SCIENCE UM

LL2023ECO006
Reduce the Electricity Usage by Adopting the Cooling-based Indoor Houseplants

PUAN ATI ROSEMARY MOHD ARIFFIN
FACULTY OF BUILT ENVIRONMENT UM

LL2023ECO009
Rainwater Garden Pilot Project in University Malaysia Campus as an Onsite Building Stormwater Management Strategy

IR. TS. DR. YUEN CHOON WAH
FACULTY OF ENGINEERING UM

LL2023ECO007
Develop a Sustainable Transport System in Universiti Malaysia Campus

DR. FUNG HON NGEN
FACULTY OF SCIENCE UM

LL2023ECO010
Piloting an Action-oriented Approach towards Operationalizing Responsible Research and Innovation towards Urban Sustainability for University FYP Projects

DR. HAZEAN JOHARI
FACULTY OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY UM

LL2023ECO008
Water Quality Prediction of UM Lake using Machine Learning

Best Wishes:
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Above: The 16 recipients of the UM EcoCampus Living Labs for the 2023/2024 cycle

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Cycle 2023/2024
(September 2023 - September 2024)

UM ECOCAMPUS LIVING LABS GRANT

 DR. MUHAMMAD MEHEDI MASUD FACULTY OF BUSINESS AND ECONOMICS UM LL2023ECO011 Enhancing Food Waste Management Practices Among University Students: An Intervention Program	 DR. NOR AISHAH ABDULLAH FACULTY OF SCIENCE UM LL2023ECO014 Climate Superhero: Campus-led Climate Change Mitigation Campaign (CCMC) through Gamification
 DR. NOR MALINA MANAN FACULTY OF DENTISTRY UM LL2023ECO012 Reducing the Carbon Footprint in Dentistry: Easy and Sustainable	 DR. MAZIAH MAT ROSLY FACULTY OF MEDICINE UM LL2023ECO015 Unlocking the keys behind greater adoption and adaptation of e-sports exergaming as a low carbon sport and exercise alternative
 DR. NURULAINI ABU SHAMSI FACULTY OF SCIENCE UM LL2023ECO013 Developing Effective Social Media Content on promoting Zero-Waste Practices and Reducing Single-use Plastic Consumption in the University Malaysia Community	 DR. LIM YIN CHENG FACULTY OF MEDICINE UM LL2023ECO016 Motivating sustainable active transport behaviour among university community in an ecocampus

Best Wishes:
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EcoCampus UM: Rindu Ilmu, Moleksperti UM

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Above (continued from previous page): The 16 recipients of the UM EcoCampus Living Labs for the 2023/2024 cycle

Below: The recipients of the UM Circular Economy Living Labs

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THE GLOBAL GOALS
For Sustainable Development

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UM Living Labs @ UMSDC Grants Recipients
Cycle 2022/2023
(January - December 2023)

UM CIRCULAR ECONOMY LIVING LABS GRANT

 ASSOC. PROF. DR. NOOR ZALINA MAHMOOD FACULTY OF SCIENCE UM LL2022-CE001 The relevance of a Sustainable Food Waste Separation at Source System at Universiti Malaysia Cafeteria for Circular Economy Initiative in Campus	 DR. MUHAMMAD SHAKEEL AHMAD HICOE - UMPEDAC LL2022-CN001 Conversion of Cooling System of UM Shuttle to Solar Plus Battery with Plug-in Charging
 DR. ONN CHIU CHUEN FACULTY OF ENGINEERING UM LL2022-CE002 Sustainable Solid Waste Management Model in Universiti Malaysia Campus: Zero Waste Campaign 2.0	 IR. DR. KHAIRUNNISA HASIKIM FACULTY OF ENGINEERING UM LL2022-CN002 Artificial Intelligence (AI) Assisted Greenhouse Gases Emission Monitoring towards Achieving Carbon Neutral Campus
 DR. ZATI HAKIM AZIZUL HASAN FACULTY OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY UM LL2022-CE003 GoGreen! An Integrated Recyclable Waste Management System towards Reduce, Reuse, Recycle (3R) Community Adoption	 DR. FONG CHNG SAUN INSTITUTE OF ADVANCED STUDIES (IAS) LL2022-CN003 Development of a Centralized Digital Tool for Local Greenhouse Gas (GHG) Emissions

Best Wishes:
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Global Alignment and Impact

UM's sustainability initiatives are closely aligned with global trends, ensuring that the university's efforts are part of the broader global movement towards sustainability. The university's commitment to achieving carbon neutrality by 2030, as outlined in the UM Master Plan 2050, reflects its alignment with global climate action goals, such as those set forth by the Paris Agreement. By prioritising energy efficiency, renewable energy adoption, and carbon management, UM contributes directly to the global fight against climate change.

Please visit [here](#) for more information.

Furthermore, UM's emphasis on resource efficiency and circular economy principles through its Zero Waste Centre aligns with international efforts to reduce waste and promote sustainable consumption and production. The university's leadership in reducing plastic waste and fostering a culture of sustainability on campus reflects the growing global emphasis on environmental stewardship and responsible consumption. Through these initiatives, UM not only meets its sustainability targets but also sets a benchmark for other institutions, contributing to global sustainability efforts in higher education and beyond.

Universiti Malaya's achievements in 2023 underscore its unwavering commitment to responsible consumption and production as outlined in SDG 12. Through a combination of policy development, operational improvements, and community engagement, UM has made significant strides in reducing waste, promoting ethical sourcing, and minimising the use of plastics and disposable items.

These efforts are supported by a robust framework of sustainability policies and plans, including the UM Sustainability Policy 2021-2030 and the UM Master Plan 2050. As UM continues to advance its sustainability agenda, it remains a beacon of responsible consumption and production in the higher education sector, setting a high standard for others to follow while aligning closely with global sustainability trends.

