UM LIVING LABS GRANT MANUALS & GUIDELINES

Universiti Malaya Sustainable Development Centre (UMSDC)

Third Edition (February 2025)

First published in 2022

Second edition published in 2024

Third edition published in 2025

Please consider the environment before printing.

Disclaimer: This document represents the third revision of the UM Living Labs Grant Programme, following the initial publication by the UM Sustainability and Living Labs Secretariat (UMSLLS) in 2020/2021, the first revision in November 2022 and the second revision in 2024. This update is intended to incorporate the introduction of three new living lab grants and to inform the research community about the latest developments in grant coordination related to campus sustainability, overseen by UMSDC with the support of the Deputy Vice-Chancellor of Research and Innovation, UM.

TABLE OF CONTENTS

SECTION 1: SUSTAINABILITY@UM

1.1 ABOUT UM SUSTAINABLE DEVELOPMENT CENTRE (UMSDC)

To advance Universiti Malaya's transition into a more sustainable campus, it is essential to first address the sustainability of its key operations—encompassing education, research, operations and governance, and external leadership. This foundational focus ensures the wellbeing of the entire campus community, including students, staff, flora, and fauna. The principle is to align actions with commitments, thereby positioning Universiti Malaya to contribute meaningfully to sustainability at local, national, regional, and global levels.

The establishment of the Universiti Malaya Sustainable Development Centre (UMSDC) in November 2021 is a direct outcome of the Universiti Malaya Transformation Plan, specifically under Theme 6 (Enhance Learning & Work Environment) and is closely aligned with the recommendations of its Taskforce.

UMSDC's strategic vision positions the centre as a hub for innovative solutions for a sustainable future, leveraging the UM campus as a living laboratory for creative experimentation and the promotion of a sustainable, carbon-neutral lifestyle and culture.

The Centre's vision is to harness innovation—both technological and non-technological—to drive Universiti Malaya's transition towards becoming a world-class sustainable campus. This, in turn, will contribute to the broader agenda of transforming society in line with the 2030 Sustainable Development Goals (SDGs), Shared Prosperity Vision 2030 (SPV2030), and other relevant local agendas. Through these initiatives, Universiti Malaya aims to make significant, practical contributions to key sustainability-related policies at local, national, and international levels.

1.2 UM SUSTAINABILITY COMMITMENT

Universiti Malaya envisions becoming a carbon-neutral campus by 2030. At the 12th International Conference on World Class Sustainable Cities 2021 (WCSC 2021), the then Vice-Chancellor, Datuk Professor Ir. Dr. Mohd Hamdi Abd Shukor, highlighted the importance of campus sustainability action research and living labs in driving this carbon-neutral initiative. UM's commitment to achieving a carbon-neutral and green campus is guided by two key sustainability documents: the UM Eco Campus Blueprint (UMECB) and the UM Sustainability Policy.

For more information, please refer to the following links for the guiding sustainability documents:

UM Eco-Campus Blueprint
Link: https://bit.ly/3yCENGD

UM Sustainability Policy 2021-2030
Link: https://bit.ly/4fOn00f

UMSDC, in strategic partnership with the Corporate Ranking Centre (CRC) of UM, facilitates the collection of data related to campus sustainability achievements by strategically connecting the dots across faculties and PTJs in a spirit of smart partnership and co-creation. This initiative is part of the campus's responsibility to transform UM into not only a world-class academic and research university but also a leading model of sustainability at the local, national, regional, and global levels.

Below are several annual commitments that require the support and assistance of the UM Living Labs initiative and intervention:

Universitas Indonesia GreenMetric World University Rankings (UIGM)

UIGM website link:
https://greenmetric.ui.ac.id/

Times Higher Education Impact Rankings on Sustainable Development Goals (THE IR)

THE IR website link:
https://www.timeshighereducation.com/impactrankings

Quacquarelli Symonds World University Rankings (QS WUR) – Sustainability

QS WUR – Sustainability website link:
https://www.topuniversities.com/sustainability-rankings

Ultimately, Universiti Malaya envisions becoming a carbon-neutral campus by 2030 and net zero campus by 2050. Climate change has undeniably already had a significant impact on our cities and way of life. By embracing the SDGs and carbon-neutral eco-shifts, UM aims to chart a path toward a more prosperous and sustainable future: a Cleaner, Cooler, and Healthier Campus. The long-term impacts are driven by three (3) strategic UM Living Labs—UM Eco-Campus Living Labs, UM Circular Economy Living Labs, and UM Carbon Neutrality Acceleration Living Labs. These initiatives are designed to:

- Boost the local green economy and create green jobs.
- Attract local, regional, and international partnerships and investments.
- Enhance the quality of life and campus liveability standards.
- Protect the campus and cities by co-creating climate change resilience action plans.

1.3 UNIVERSITI MALAYA LIVING LABS

The Universiti Malaya Living Labs is a pivotal initiative within the campus sustainability framework, established through the annual University Research (RU) allocation, with the support of the Deputy Vice-Chancellor (Research & Innovation). Managed by the UM Sustainable Development Centre (UMSDC), this grant program operates in close collaboration with the Estates Department (JHB) of UM.

UM Living Labs has a well-established history within Universiti Malaya's sustainability journey. Initially launched in 2015 as a strategic partnership between the Deputy Vice-Chancellors of Research & Innovation and Development, the Living Labs were introduced to the UM research community under the coordination of the Sustainability Science Research Cluster (SuSci), the EcoCampus Secretariat and later by UM Sustainability and Living Labs Secretariat (UMSLLS). The current program builds upon and enhances these earlier efforts. For a comprehensive list of our past UM Living Labs projects, please visit this link.

The 'Living Labs' concept within the context of campus sustainability aims to transform university campuses into dynamic laboratories where research capabilities are harnessed to address sustainability challenges and improve campus operations. Through a focused, systematic, collaborative, and transdisciplinary approach, UM researchers actively engage with relevant campus stakeholders to systematically enhance UM's sustainability performance in alignment with specific targets.

UM Living Labs serves as a strategic platform for fostering applied and translational research by utilising the UM campus as a testbed for real-time sustainability solutions. These solutions not only benefit the campus community but also have the potential to be applied to other communities and spaces. Through this approach, UM Living Labs offers opportunities for UM researchers to translate research into tangible action, enabling the campus community and stakeholders to engage in a more practical, hands-on, and holistic research and educational experience. Our goal is to transform knowledge and ideas on campus sustainability into innovative products, processes, and systems that inclusively benefit both the UM community and our stakeholders, in alignment with the Sustainable Development Goals (SDGs).

Since its inception in 2015, UM Living Labs research has produced numerous tangible sustainability outcomes, resulting in measurable improvements in the environmental, economic, and social dimensions of campus life. These achievements have been instrumental in enhancing UM's sustainability performance, as evidenced by its rankings in the UI Green Metric University Ranking, THE Impact Ranking, and the QS Sustainability World University Ranking. The UMSDC is committed to building on this momentum, particularly in addressing areas of campus sustainability where we continue to face challenges.

In this spirit, UM Living Labs offers an excellent platform for the campus community and stakeholders to engage in the co-creation of knowledge and the acceleration of innovation for sustainability starting within UM and extending beyond our campus boundaries. We invite you to join us in this transformative journey!

There are three (3) UM Living Labs grant programs introduced to the UM Community as follows:

1.3.1 UM Eco-Campus Living Labs

The Eco-Campus Living Lab is the flagship program of the UM Living Labs, initiated in 2015. This program is strategically designed to integrate research and innovation into the practical implementation of sustainability initiatives, with the goal of minimising the environmental impact on campus. These efforts are aligned with the action plans outlined in the Universiti Malaya Eco-Campus Blueprint (UMECB), which was launched in 2016. The UMECB focuses on eight core areas that reflect UM's daily operations and their potential to contribute to sustainability and address environmental challenges.

The eight (8) core areas of UM Eco-Campus Blueprint (UMECB) are as follows:
- CAUM 01: Landscape & Biodiversity Management
- CAUM 02: Waste Management
- CAUM 03: Water Management
- CAUM 04: Energy Management
- CAUM 05: Transportation System Management
- CAUM 06: Green Procurement
- CAUM 07: Education Management – Environment & Climate Change
- CAUM 08: Change Management – Governance, Participation & Communication

   *CAUM: Core Area of UM Eco-Campus Blueprint (UMECB).

1.3.2 UM Circular Economy Living Labs

In general, the Circular Economy (CE) seeks to keep materials, products, and services at their highest utility and value, maintaining their circulation for as long as possible. A CE model minimizes material use, redesigns materials, products, and services to be less resource-intensive, and reclaims 'waste' as a resource to generate new materials, products, and even services. Promoting CE is also a critical strategy for mitigating and adapting to the climate crisis.

UMSDC envisions enhancing the Circular Economy within the Universiti Malaya campus by proactively addressing the impact of material flow on campus and within our immediate communities. Building on the success of the pioneering UM Living Labs model—the UM Zero Waste Campaign (UMZWC) established in 2009—the UM Circular Economy Living Labs Grant will be introduced as a transformative action research initiative. This initiative aims to create a more integrated, inclusive, and low-carbon campus waste management system in UM, ultimately enhancing the circular economy ecosystem within the campus and extending its impact beyond.

UM Circular Economy Concepts include the following, but not limited to:

- Eliminate waste and pollution
- Supply chain management
- Re-use and upcycling
- Recycling in an environmentally feasible manner
- Utilising feasible and innovative technologies
- Retain and prolong material and product circulation
- Public awareness and engagement
- Best practices and policy recommendation on circular economy

Circular economy interventions are crucial strategies for mitigating climate change and enhancing materials recovery, while also contributing to the cost-effective optimisation of natural resources. UMSDC believes that a thoughtfully and inclusively designed Circular Economy holds significant potential not only for environmental protection but also for improving economic performance and promoting social justice, particularly by benefiting vulnerable groups.

1.3.3 UM Carbon Neutrality Acceleration Living Labs

In alignment with Universiti Malaya's goal to achieve carbon neutrality by 2030, the new Living Labs grant has been introduced. Given UM's status as a city campus, strategic interventions are required to realize this objective. The UM Carbon Neutrality Acceleration Living Labs focus on projects specifically designed to significantly advance the university's carbon neutrality efforts. This initiative identifies four key areas of research:

- Renewable energy generation
- Carbon neutral facilities
- Carbon neutral communities
- Greenhouse Gases (GHG) emissions reductions

It is important to highlight that this specific Living Labs is designed to address the following Greenhouse Gases (GHG) Protocol.

More information:
https://ghgprotocol.org/

Scope 1: Direct emissions
Direct emissions from resources owned and managed by Universiti Malaya are those released directly into the atmosphere because of the university's operational activities. These emissions are classified into four main categories:

i. Stationary Combustion (fuels and heating sources)

ii. Mobile Combustion (all vehicles owned or controlled by UM, burning fuel (e.g., cars, van, shuttle bus, trucks)

iii. Fugitive Emissions (leaks from Greenhouse Gases e.g. refrigeration, air conditioning units)

iv. Process Emissions (released during industrial processes, and on-sit manufacturing e.g., production of Carbon Dioxide during cement manufacturing, factory fumes, chemicals)

Scope 2: Indirect emissions
Scope 2 encompasses indirect emissions from the generation of purchased energy from utility providers. This includes all greenhouse gas (GHG) emissions released into the atmosphere because of the consumption of purchased electricity, steam, heat, and cooling.

Scope 3: Indirect emissions
Scope 3 includes all indirect emissions that fall outside of Scope 2, originating from various activities within the value chain of Universiti Malaya. These emissions are tied to the university's

operations and encompass a wide range of sources such as procurement of goods and services, capital assets, fuel and energy-related processes, transportation and logistics, waste management, business travel, employee commuting, leased assets, and the life-cycle of products sold. By integrating Sustainable Development Goals (SDGs) into its operations, the UM Carbon Neutrality Acceleration Living Labs exemplify real-world initiatives driven by interdisciplinary action research aimed at achieving decarbonisation targets.

This funding opportunity from the UM Sustainable Development Centre (UMSDC) is designed to back research and engagement activities that produce essential knowledge and foster innovations critical for speeding up UM's journey towards carbon neutrality. By encouraging cross-disciplinary collaborations and partnerships with sustainability-focused organisations committed to carbon neutrality and decarbonisation efforts, these living labs strive to elevate and broaden Universiti Malaya's impact in the global fight against climate change. Moreover, this initiative aligns with UM's active involvement in the Low Carbon Cities Framework (LCCF), recently rebranded as the Low Carbon Cities Challenge 2030 (LCC 2030) by the Malaysian Green Technology and Climate Change Corporation (MGTC).

More information on UM's performance in LCCF:
https://sustainability.um.edu.my/um-in-low-carbon-cities-framework-lccf

1.3.4 The United Nations Sustainable Development Solutions Network (SDSN) Net Zero on Campus

Universities play critical role in driving climate action through implementing net zero initiatives on campuses. It outlines the necessity of reducing greenhouse gas emissions to contribute to a sustainable future. The core implementation strategies are divided into key areas:

- **Energy**: Focus on reducing campus energy demand through efficiency measures, replacing fossil fuel-dependent appliances, and sourcing renewable energy. This includes implementing microgrids and transitioning to sustainable energy systems.

- **Mobility**: Encourage sustainable commuting options such as biking, public transport, and electric vehicles. This also involves reducing the need for travel through virtual options and transitioning to zero-emission vehicle fleets.

- **Facilities**: Retrofit existing buildings for energy efficiency and construct new sustainable buildings. Implement smart systems for heating, cooling, and lighting to reduce energy consumption.

- **Waste Minimisation and Recycling**: Participate in a circular economy by reducing waste, implementing recovery programs, and promoting sustainable procurement practices.

- **Value Chain**: Influence suppliers and the value chain to reduce emissions and consider using carbon offsets for emissions that cannot be eliminated directly.

- **Beyond Campus Operations**: Act as an amplifier of change by engaging with student bodies, promoting sustainability leadership, and encouraging net zero-aligned education, research, and innovation within the broader community.

More information: https://www.unsdsn.org/our-work/net-zero-on-campus/

In 2025, the **UM Living Labs** initiative **integrating efforts from sections 1.3.1 to 1.3.4**, represents a comprehensive approach to sustainability, research, and innovation at Universiti Malaya. Launched in 2015, it focuses on minimising environmental impact by applying practical solutions across Waste, Water, Mobility, Energy, Education, Biodiversity, and Landscape. These efforts align with the UM Eco-Campus Blueprint (UMECB) and support UM's journey towards Carbon Neutrality and a Circular Economy.

1.3.5 UM Living Labs Towards Just Net Zero

The **UM Living Labs Towards Just Net Zero focuses on 10 key focus areas** to drive sustainability and climate action at Universiti Malaya. These areas include Waste, Water, Mobility, Energy, Education, Biodiversity, Carbon Neutrality, Circular Economy, CEPA & Behavioural Change, and Planetary Health. Through innovative research and practical solutions, the living labs aim to support UM's journey toward carbon neutrality by 2030, while fostering sustainability and positive environmental impact.

Key Focus Areas

1. **Waste**: Implementing circular economy principles to reduce, reuse, and recycle. The **UM Circular Economy Living Labs** play a critical role in minimizing waste and extending the lifecycle of materials. This approach supports the **Universiti Malaya Zero Waste Campaign (UMZWC)**, emphasizing re-use, upcycling, and environmentally feasible recycling. By promoting these initiatives, UM actively reduces waste and pollution, contributing to its carbon-neutral goals.

2. **Water**: Efficient water management systems ensure the sustainable use of water resources on campus, aiming to reduce consumption and promote water recycling. These efforts fall under the **UM Eco-Campus Blueprint** to enhance water management practices.

3. **Mobility**: Sustainable transportation is key to UM's carbon neutrality vision, encouraging alternatives like biking, public transport, and electric vehicles. **UM Carbon Neutrality Acceleration Living Labs** support this by reducing emissions from campus vehicles and promoting low-emission transport options.

4. **Energy**: A critical part of achieving carbon neutrality and towards net zero involves reducing campus energy demand, transitioning to renewable energy, and utilising efficient technologies. The **UM Carbon Neutrality Acceleration Living Labs** focus on **renewable energy generation, GHG emissions reductions**, and carbon-neutral infrastructure. UM is committed to energy-efficient retrofitting and smart energy management for all facilities.

5. **Education**: Promoting sustainability knowledge and climate change awareness is central to the **Education Management** aspect of UM living labs. Courses, workshops, and engagement programs ensure the UM community is actively contributing to sustainability goals.

6. **Biodiversity and Landscape**: **UM's Landscape & Biodiversity Management** ensures that the campus's green spaces are maintained to support local ecosystems and biodiversity. These efforts align with broader planetary health objectives.

7. **Carbon Neutral and Net Zero**: UM aims for **carbon neutrality by 2030 and net zero by 2050**, targeting **Scope 1, 2, and 3 GHG emissions** through energy management, reducing transportation emissions, and fostering carbon-neutral communities.

8. **Circular Economy**: The **Circular Economy Living Labs** focuses on retaining material and product circulation to reduce waste and promote sustainable resource use. This initiative actively engages the UM community in circular economy principles and serves as a critical climate mitigation strategy.

9. **CEPA & Behavioural Change**: Communication, Education, and Public Awareness (CEPA) initiatives help drive **behavioural change** across campus, involving stakeholders in sustainability practices.

10. **Planetary Health**: By implementing the **living labs** initiatives, UM connects sustainability practices with broader planetary health goals, contributing to the global climate action agenda.

SECTION 2: PRE-AWARD OF UM LIVING LABS GRANT

2.1 GRANT ELIGIBILITY CRITERIA

All UM academic staff, whether permanent or on a contract basis, are eligible to apply UM Living Labs grant as Principal Investigator (PI), except for Tutors, SLAB/SLAI Fellow, Research Fellow, Post-graduates, Research Officers, Professors, and Emeritus / Adjunct / Honorary Pofessors.

a) Each UM Living Labs project **MUST** be led by a PI, who is responsible for the preparation, execution, and overall management of the research grant. Contract academic staff must have a minimum appointment duration of 12 months, and at least one permanent academic staff of Universiti Malaya must be appointed as a co-researcher.

b) Academic staff on sabbatical leave will be evaluated based on their qualifications and a review by the panel of assessors.

c) Priority for application approval will be given to academic staff who have demonstrated an excellent track record and are responsible for at least one active research grant — whether from internal or external funding— within the most recent six months.

New applications from previous UM Living Labs researchers will be subject to the following terms and conditions:

d) A completed progress and final report must be submitted, including credible evidence and all relevant documents for the previous UM Living Labs project awarded.

e) At least 85% of the budget allocated for the previous research must have been utilised.

2.2 GRANT SCOPE OF FUNDING

Table 1: Details and description of research grant allocation for UM Living Labs Grants

Vote	Details
Vote 11000 Salary and wages	Salary or allowance for Research Assistants (RAs) involved in UM Living Labs Grants under UMSDC is governed by the UM Research Assistant Guideline, as outlined by the Department of Research Management (JPP). The maximum salary for an RA is subject to these guidelines.
Vote 24000 Rentals	Only for rental of building space, equipment, transportation and other items related to the project.
Vote 27000 Research Materials and Consumables	Expenses incurred for the purchase of materials and supplies related to the project are covered under this category. Additionally, the purchase of equipment or assets valued at less than RM 3,000 may also be included in this budget vote.
Vote 29000 Professional Services and Other Services	Services covered under this category include project-related publications, hospitality, professional services, patent registration, data analysis, and other related services. Payments for attending conferences or short courses related to research grants are permitted for domestic events, but only once. The duration must be between 3 weeks and less than 3 months, with total expenditures not exceeding 10% of the grant allocation. For honorarium payments and other professional or consultation services, please refer to the guidelines and procedures set by the UM Bursary Office.
Vote 35000 Equipment / Accessories (Asset)	Applications for this category are **not encouraged,** and approval is entirely at the discretion of the UM Living Labs panel assessors, based on a reasonable justification. This category is **only permitted** for the purchase of specialised equipment and accessories, including upgrades to increase the capacity of existing equipment, with a value exceeding RM 3,000.

Note: For equipment purchases, tagging must be conducted under the authority of the PI's faculty, centre, or institute. A copy of the tagging documentation must be provided to UMSDC. UMSDC retains responsibility for all equipment purchased by the PI until the conclusion of the research grant.

2.3 PROJECT TIME PERIOD

- The duration of a UM Living Labs grant is a minimum of 9 months and a maximum of 12 months.

- Any UM Living Labs project with significant potential and impact may be considered for extension or renewal by UMSDC, up to a maximum of three cycles. However, the project must include a clearly defined exit strategy at the end of each cycle, aimed at ensuring the project's sustainability and independence. This exit strategy must be approved by the panel assessors.

2.4 PROJECT TARGET OUTPUTS

- All UM Living Labs applicants are **COMPULSORY** to include measurable outputs that shall be achieved within the project timeframe.

- Projects that successfully pass the screening process will be invited to pitch their proposals for evaluation by a panel of assessors.

- Successful project will be notified through email and PI will receive an official offer letter.

- Applicants must resubmit the revised version of project target outputs, incorporating any suggestions and improvements from the panel assessors (if applicable).

- Projects that do not meet their project target outputs within the one-year period will continue to be monitored for an additional two years after the grant ends, until all the target outputs are achieved.

- Failure to achieve all the target outputs within the additional two-year monitoring period will render the applicant ineligible to apply for UM Living Labs Grants under UMSDC for the following two years.

Table 2: Details of target outputs for UM Living Labs Grants

No.	Category	Details

1.	**Project Target Achievement**	• Project contributions to relevant sustainability initiatives, both on and off campus, must result in a significant percentage of reduction or savings. Achieving this target is **MANDATORY.**
		
		Example:
		  • ***UM EcoCampus Living Labs****: Reduction of motorised transport in campus by 20% / Placement of recycling bins within campus which covers 75% of campus area.*
		
		  • ***UM Circular Economy Living Labs****: Introduction of Target Zero Initiative to facilitate campus community to identify hundreds of products procured by UM to be sorted and recycled, with initial recycling target of selected faculties at 40%.*
		
		  • ***UM Carbon Neutrality Acceleration Living Labs****: Installation of 2 solar arrays with storage to offset electric loads of a building to achieve net zero energy performance.*

2.	**Capacity Building and Community Engagement**	• Organising seminars, conferences, workshops, demonstrations, training sessions, or similar programs is highly encouraged, with a minimum of one (1) involvement recommended.
		
		• At least three (3) community-based activities should be conducted with the purpose of transferring knowledge and technology to the UM community.
		
		Example*:*
		  • *To conduct at least one (1) seminar and two (2) demonstrations on integrated solid waste management.*
		
		  • *To organize three (3) training sessions on organic composting with at least three faculties.*

Table 2: Details of target outputs for UM Living Labs Grants (cont.)

No.	Category	Details
3.	**Innovation / Technology**	• The production of at least one (1) innovation, technology, application, system, or product that contributes to the university's goal of achieving smart city status and a sustainable campus is required. ***Example:*** *To produce one (1) prototype of a water monitoring machine and three (3) copyrighted training modules aimed at generating project income.*
4.	**Networking and Linkages**	• The establishment of official collaborations through mutual agreements, such as Memorandums of Understanding (MoUs), Memorandums of Agreement (MoAs), Letters of Intent (LoIs), and Letters of Agreement (LoAs), is highly encouraged. ***Example:*** *To sign one (1) MoA with Alam Flora Sdn. Bhd. and two (2) LoI with Petaling Jaya City Council (MBPJ) and Universiti Kebangsaan Malaysia (UKM).*
5.	**Publication**	• All UM Living Labs projects are **MANDATORY** to publish at least one (1) ISI-indexed article, with proof of submission, to support UM in meeting MyRA requirements. This KPI will be monitored until the article is successfully published. • A minimum of one (1) additional publication is required, which may include a journal article in SCOPUS, proceeding paper, book, chapter in a book, training module, or newspaper article, in accordance with the Malaysia Research Assessment (MyRA). • Acknowledgment of the grant is **MANDATORY** and must be stated in the publication, **listed as either the FIRST or SECOND GRANT mentioned.** • Electronic publications, such as e-bulletins, e-magazines, and media coverage, are also encouraged to meet MyRA requirements. • ***Example:*** *To publish at least one (1) ISI-indexed journal and two (2) proceeding papers on Systematic Water Monitoring Application via Internet of -Things (IoT).*

Table 2: Details of target outputs for UM Living Labs Grants (cont.)

No.	Category	Details
6.	**Policy Paper/ Guideline / Standard**	• UM Living Labs projects are **highly encouraged** to publish at least one (1) academic publication, such as a policy paper, guideline, standard, or action plan, in collaboration with government or authorised agencies (e.g., Local Authorities, NGOs, industries) in accordance with MyRA criteria. ***Example***: *To produce one (1) guideline on Circular Economy for Smart City with Petaling Jaya City Council.*
7.	**Others** (Human Capital Development – PhD or Master students, media coverage etc.)	• This is encouraged but not compulsory: Media coverage or production of brochure / poster / bunting / video / banner etc. ***Example:*** *To produce one (1) brochure and two (2) videos on Energy Saving Tips / at least one (1) PhD student and two (2) master's students will be produced by the end of this project.*

2.5 GRANT PROPOSAL CALL

- Announcements related to UM Living Labs Grants coordinated by UMSDC will be communicated exclusively through UMINFO.

- Only complete applications will be accepted and processed by UMSDC. Please ensure that your proposal includes all required signatures and that all relevant documents are properly attached.

2.6 GRANT PROPOSAL PITCHING

- Grant applications will be evaluated by the UM Living Labs Grants panel assessors, who are experts in the relevant fields. The evaluation process will consider the terms and conditions, criteria outlined above, and the overall quality of the proposed project.

- UM Living Labs panel assessors hold the authority to recommend revisions and improvements to the proposals before final decisions are made. Once the necessary adjustments are made, the proposed budget allocation will be approved and submitted to the office of Research Grant Management Division (BPGP) for final approval.

2.7 ANNOUNCEMENT OF SUCCESSFUL APPLICANT

- The announcement of successful project proposals will be made via email. An offer letter will be provided to the Principal Investigator (PI), with a copy also sent to the relevant dean of faculty or director or head of responsibility centre.

- The successful applicant must return the revised project proposal, aligned with the panel's suggestions, along with the PI's signature, to the UMSDC Office via email. This step is necessary to activate the project account in the Research Project Management System (RPMS). Failure to submit these documents within the stipulated time frame will result in the withdrawal of the offer.

SECTION 3: POST-AWARD OF UM LIVING LABS GRANT

3.1 APPOINTMENT OF RESEARCHERS

3.1.1 Principal Investigator (PI) and co-researcher(s)

- Each UM Living Labs project is **COMPULSORY** to appoint one (1) Principal Investigator (PI) and at least one (1) co-researcher.

- It is **MANDATORY** for each UM Living Labs project to appoint at least one (1) representative from the Estates Department (JHB) UM, aligned with their relevant expertise or current duties.

- There is no maximum limit for the number of co-researchers.

- A new PI appointment is required if the current PI faces any of the following circumstances:
    - Study leave
    - Sabbatical leave
    - Maternity leave
    - End of service in UM / Retirement

- The PI is responsible for informing the UMSDC Office in writing about the handover agreement.

- The new PI is **COMPULSORY** to complete the handover agreement form and submit one (1) copy to the UMSDC Office for official record-keeping.

- Failure to appoint a new PI will result in the following actions:
    - The Head of Department or Director of the research centre will be responsible for appointing a new PI to take over the research project.
    - If no suitable PI replacement is found, or if no co-researcher agrees to take over the project (depending on the reasons provided), the UMSDC Office will recommend project termination to the office of Research Grant Management Division (BPGP).

3.1.2 Research Assistant (RA)

- Each UM Living Labs project is encouraged to appoint one (1) Research Assistant (RA).

- The appointment of an RA is subject to the necessity of data collection and project implementation; therefore, an RA can be appointed on a yearly basis or per specific services/tasks.

- RA appointments should be processed online through the RA Recruitment System (RARS).
- The PI may directly consult the Department of Research Management (JPP) for any matters related to the appointment and management of RAs.

3.2 PROJECT MONITORING

All UM Living Labs projects will be monitored according to the following:

a) Project Reporting
b) Project Financial Status
c) Project Target Outputs

3.2.1 Project Reporting

The UM Living Labs grant is awarded on an annual basis and requires rigorous monitoring to ensure that UM Living Labs projects are closely tracked and progress steadily toward meeting their target outcomes.

Grant holders are responsible for submitting a comprehensive UM Living Labs progress report and ensuring that all allocated funds are spent effectively throughout the research period. There are three types of UM Living Labs reporting, including:

- **Official 6 Months Progress Report**
    - A completed UM Living Labs Grant Progress Report is **COMPULSORY** to be submitted prior to 6 months of research period.

    - The report template could be downloaded at the official website of UMSDC (https://sustainability.um.edu.my) respectively and **MUST** be submitted to UMSDC **BEFORE THE DEADLINE**.

    - Announcement and reminder of progress report submission will be given periodically to all UM Living Labs Grants holder via email.

    - The progress report is **COMPULSORY** to be submitted to UMSDC in one (1) softcopy via umsdc@um.edu.my and one (1) hardcopy to:

        UM Sustainable Development Centre (UMSDC),
        Level 6, Research Management & Innovation Complex (RMIC),
        Universiti Malaya

    - The grant holder is obligated to ensure that the completed progress report is submitted with the signature of the Dean of Faculty or Head of Department (HoD) and that all relevant documents and evidence are properly attached.

    - Failure to comply will result in the automatic suspension of the grant holder's account in the RPMS.

- **Official 12 Months Final Report**
    - A completed UM Living Labs Grants Final Report is **COMPULSORY** to be submitted by the end of research period (12th month).

    - The report template can be downloaded from the official website (https://sustainability.um.edu.my) and **MUST** be submitted to UMSDC **BEFORE THE DEADLINE**.

    - Announcement and reminder of final report submission will be given periodically to all UM Living Labs grant holder via email.

    - The final report is **COMPULSORY** to be submitted to UMSDC in one (1) softcopy via umsdc@um.edu.my and one (1) hardcopy to:

            UM Sustainability & Development Centre (UMSDC),
            Level 6, Research Management & Innovation Complex (RMIC)
            Universiti Malaya

    - The grant holder is obligated to ensure that the completed final report is submitted with the signature of the Dean of Faculty or Head of Department (HOD) and that all relevant documents and evidence are properly attached.

    - Failure to comply will result in the automatic suspension of the grant holder's account in the RPMS.

    - The PI is given 24 months (2 years) to update the status of any unfulfilled target outputs.

- **UM Living Labs Site Visit**
    - An official UM Living Labs site visit monitoring session will be conducted in the 3rd month of the project implementation.

    - The purpose of the UM Living Labs site visit is to ensure that all UM Living Labs projects have commenced their physical activities according to the timeline stipulated in the project Gantt chart.

    - During the site visit, each project will have 10 minutes to present or showcase any of the project outputs, which will be evaluated by UM Living Labs panel assessors.

    - Researchers are required to consider the comments and suggestions for improvement provided by the UM Living Labs panel assessors and take further action to enhance the quality of the research.

3.2.2 Project Financial Status

Monitoring of UM Living Labs projects extends beyond the progress of KPIs to include the financial status of the project.

- **Active project**
  - UMSDC will issue a reminder notice after the first three months of the research period if the project exhibits zero expenditure.

  - If the project still shows zero expenditure after six months, UMSDC will request a justification letter from the PI.

  - Failure to provide a justification letter will result in a project termination proposal being submitted to the office of Research Grant Management Division (BPGP). The researcher will be ineligible to apply for the next two cycles of UM Living Labs Grants under UMSDC. This is in accordance with the Ministry of Higher Education's guidelines in Tadbir Urus Dana Penyelidikan KPT (5th Edition). The document link is here.

  - UMSDC will notify the PI of suggestions and improvements for projects that demonstrate low performance for further action.

  - UMSDC may act regarding the entire or remaining balance of the project allocation, subject to the adjustment of the grant account involved.

- **Ended project**
  - Should the PI intend to continue utilising the remaining funds after the grant period has concluded, a formal justification letter must be submitted to UMSDC for consideration.

  - The grant holder may continue their research project without receiving any additional or new allocation in the subsequent years.

  - UMSDC may take action regarding the entire or remaining balance of the project allocation, subject to adjustments to the grant account involved.

3.2.3 Project Target Outputs

The target outputs for UM Living Labs projects are categorised into two conditions: projects that have either completed one year of research or reached their research deadline, and projects that have not yet achieved their target outputs, with a subsequent 24-month post-research monitoring period. Below are the requirements that need to be fulfilled:

Table 3: UM Living Labs Project Target Outputs (achieved or not yet achieved)

UM Living Labs Project that is <u>not yet achieved</u> all project target outputs	UM Living Labs Project that has <u>achieved</u> all project target outputs
• PI is required to submit one (1) softcopy and one (1) hardcopy of all project outputs including product, data and reports, presentation slides, videos, publications and other related documents to UMSDC. • Project will be monitored for 24 months (2 years) starting from the end date of research grant. • PI and the co-researchers should strive to fulfil the project KPIs that has not yet achieved within the stipulated 24 months. **Post-research monitoring period (24 months)** • PI is required to submit the remaining project outputs that is not completed before. • UMSDC will send an email and official letter to the PI, announcing project completion and official closing of research project. • PI is required to name the faculty / responsibility centre that will take over and monitor the project assets (for projects that possess any physical infrastructure, equipment and materials procured by using UM Living Labs Grants) and inform UMSDC regarding the project asset hand over agreement. • Unfulfillment of the project outputs will affect the next cycle of application either as PI or co-researcher.	• PI is required to submit one (1) softcopy and one (1) hardcopy of all project outputs including product, data and reports, presentation slides, videos, publications and other related documents to UMSDC. • UMSDC will send an email and official letter to the PI, announcing project completion and official closing of research project. • PI is required to name the faculty / responsibility centre that will take over and monitor the project assets (for projects that possess any physical infrastructure, equipment and materials procured by using UM Living Labs Grants) and inform UMSDC regarding the project asset hand over agreement.

CONTACT DETAILS

All official matters or enquiries regarding UM Living Labs Grants under the coordination of UMSDC should be addressed to:

Director,
UM Sustainable Development Centre (UMSDC)
Level 6, Research Management and Innovation Complex (RMIC)
Universiti Malaya, 50603 Kuala Lumpur
MALAYSIA
+603-7967 4635
umsdc@um.edu.my

This 3rd revision of manuals and guidelines is prepared by:

- Associate Professor Dr. Zeeda Fatimah Mohamad (Director UMSDC)
  zeeda21@um.edu.my
- Dr. Fong Chng Saun (Research Coordinator, UMSDC)
  fongcs92@um.edu.my
- Dr. Azizi Abu Bakar (Research Officer, UMSDC)
  azizi.bkr@um.edu.my
- Mr. Mohd Fadhli Rahmat Fakri (Research Officer, UMSDC)
  fadhli@um.edu.my
- Mr. Affan Nasaruddin (Research Officer, UMSDC)
  affannasaruddin@um.edu.my
- Mdm. Siti Norasiah Abd. Kadir (Project Officer, UMSDC)
  sitinorasiah@um.edu.my
- Ms. Nuratikah Mohd Zainodin (Research Assistant, UMSDC)
  ikazainodin@um.edu.my

APPENDICES

I. UM Living Labs Pre-Award Flowchart

```
                    ┌─────────────┐
                    │    Start    │
                    └─────────────┘
                           │
                           ▼
                  ┌──────────────────┐
                  │ UMLL Grant call  │
                  │     opening      │
                  └──────────────────┘
                           │
                           ▼
                  ┌──────────────────┐
                  │ Application form │
                  │   submission     │
                  └──────────────────┘
                           │
                           ▼
                  ┌──────────────────┐
                  │  Screening by    │
                  │  UMSDC Office    │
                  └──────────────────┘
                           │
                           ▼
  ┌──────────────────┐  No ╱◇╲
  │ Return to        │◄─────  Verified?
  │ applicant        │     ╲◇╱
  └──────────────────┘       │ Yes
                             ▼
                  ┌──────────────────┐
                  │  UMLL proposal   │
                  │  pitching and    │
                  │   evaluation     │
                  └──────────────────┘
                           │
                           ▼
                  ┌──────────────────┐
                  │ Result notification │
                  └──────────────────┘
                           │
                           ▼
                  ┌──────────────────┐
                  │  Submission of   │
                  │  acceptance and  │
                  │ undertaking letter│
                  └──────────────────┘
                           │
                           ▼
                  ┌──────────────────┐
                  │  UMLL project    │
                  │ implementation   │
                  └──────────────────┘
                           │
                           ▼
                    ┌─────────────┐
                    │     End     │
                    └─────────────┘
```
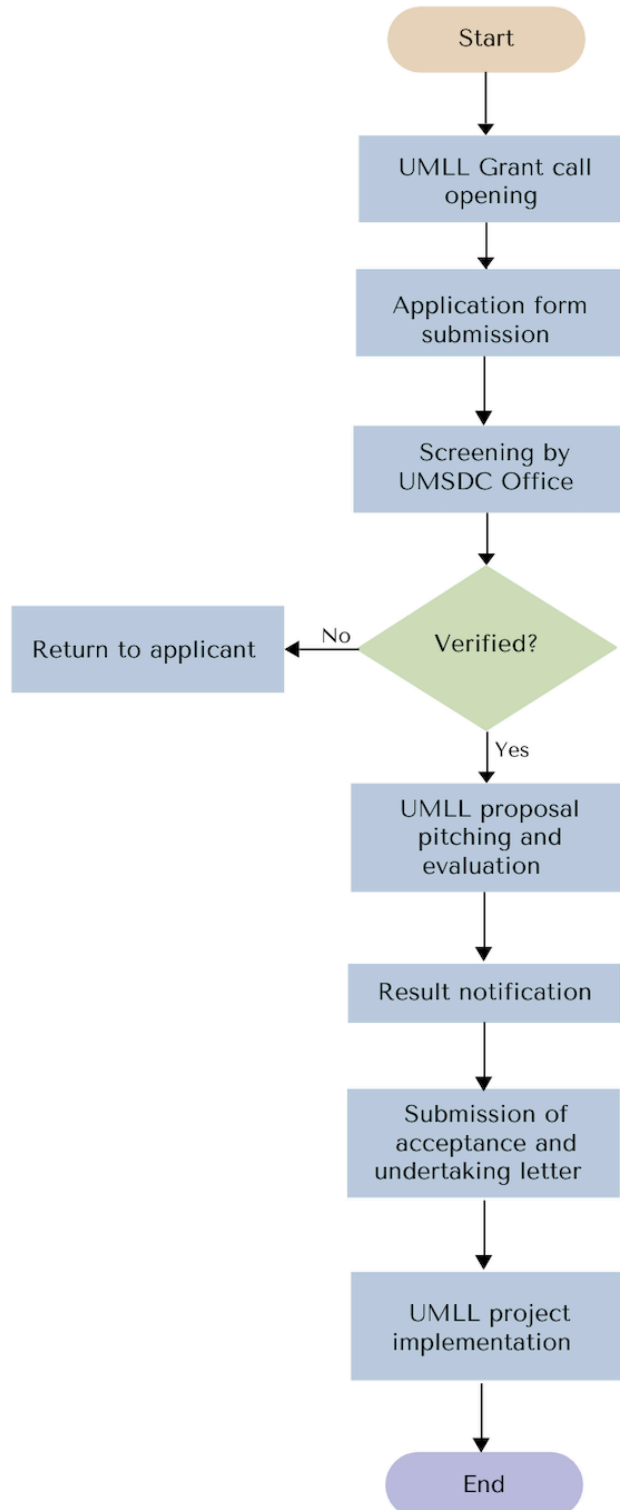
II. UM Living Labs Post-Award Flowchart
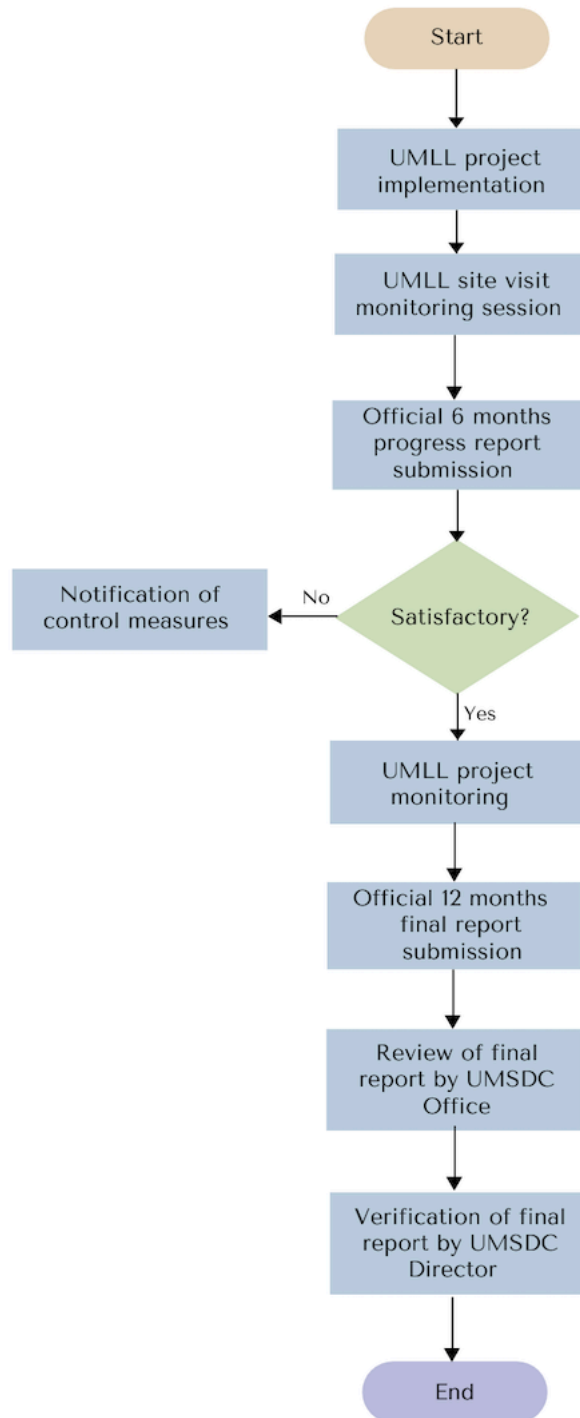
III.   UM Sustainability Policy

Universiti Malaya Sustainability Policy is endorsed by the Universiti Malaya Board of Directors (LPU) in 2021. This sustainability policy governs and oversees the management and development of the university as a higher educational institution (HEI) to ensure best practices are not only implemented through its core business in delivering a quality academic performance and impactful research, but also covers the operation and services which consider the natural environment and resources are utilised sustainably and responsibly without neglecting the rights of its community towards societal well-being and economic sustainability. The policy is formulated based on five pillars namely: Education, Research, Environment, Economy, and Social.

IV.   UM Eco-Campus Blueprint (UMECB)

Realising the importance of sustainable campus through holistic and transdisciplinary approach, Universiti Malaya Eco-Campus Blueprint (UMECB) is the first document officially published in Universiti Malaya's journey towards eco-campus, launched in 2016. This document is a call for attention, cooperation and commitment of all stakeholders to support sustainability initiatives in a holistic and whole-campus approach. This serves as a basic guide with a model of sustainable campus framework and action plans that can be applied according to campus community capacity and resources. UMECB consists of eight (8) core areas namely: Landscape and Biodiversity Management, Waste Management, Water Management, Energy Management, Transportation Management, Green Procurement, Education Management – Environment and Climate Change, and Change Management – Governance, Participation and Communication.

V.   The United Nations Sustainable Development Solutions Network (SDSN) Net Zero on Campus

Achieving net zero on campuses is essential for universities to lead in climate action, driving systemic changes across their operations and communities. Key strategies include transitioning to renewable energy by reducing energy demand, electrifying operations, and establishing microgrids, which not only lower emissions but also enhance energy security and generate financial savings. Sustainable mobility is encouraged by promoting public transport, cycling, and adopting electric vehicle fleets to reduce the carbon footprint of campus commuting. Facilities are upgraded to energy-efficient systems, retrofitted, and designed with sustainable practices to create resilient environments. Waste minimisation and recycling are achieved through circular economy practices, material recovery, and sustainable procurement, addressing emissions beyond energy use. Additionally, universities are urged to influence their value chains to reduce emissions and act as amplifiers of change within their communities, including the use of carbon offsets for emissions that cannot be mitigated directly. This holistic approach integrates operational changes with broader societal impacts to achieve net zero on campuses.

VI. Universitas Indonesia GreenMetric World University Rankings (UIGM)

Universities are ranked based on 6 indicators known as:
- 01: Setting & Infrastructure (SI) at 15%
- 02: Energy & Climate Change (EC) at 21%
- 03: Waste (WS) at 18%
- 04: Water (WR) at 10%
- 05: Transportation (TS) at 18%
- 06: Education and Research (ED) at 18%

UM's performance in UIGM:
https://sustainability.um.edu.my/um-in-ui-greenmetric-world-university-rankings

VII. Times Higher Education Impact Rankings on SDG (THE IR)

THE Impact Rankings on 17 Sustainable Development Goals (SDGs) coordination for Universiti Malaya is under the purview of Corporate Ranking Centre (CRC) of UM, whereby UMSDC play an active role in providing and coordinating data related to campus sustainability achievement through various outputs from relevant UM Living Labs projects and initiatives, which include the official Universiti Malaya SDG Report (formerly known as UM annual campus sustainability reports).

More information on THE IR:
https://www.timeshighereducation.com/impactrankings

VIII. Quacquarelli Symonds World University Rankings (QS WUR): Sustainability

In 2022, in QS WUR inaugural sustainability chapter provides a new practical framework on how universities can contribute to taking action to address the Environmental, Social and Governance (ESG) challenges. Research, teaching and community engagement remain important platforms for the universities to propel their expertise and community to drive sustainable development agendas forward. There are two categories (lenses) introduced in this QS ranking:

Environmental Impact – EI: provides a broad sense of whether an institution is strategising, researching, and educating with the environment in mind
- Sustainable education (40%)
- Sustainable institutions (35%)
- Sustainable research (25%)

Social Impact – SI: comprised five indicators that represent different aspects of an institution's work in ensuring social progress as well as quality education
- Employment and opportunities (20%)
- Equality (30%)
- Life quality (10%)
- Impact of education (20%)
- Knowledge exchange (20%)

The weightage of both performance lenses sums to 100%. More information on QS WUR – Sustainability:
https://www.topuniversities.com/sustainability-rankings?page=0

--End of Document--