



STATUTE GOVERNING THE OPERATIONS OF RESEARCH CLUSTER

ENGINEERING RESEARCH AND INNOVATION CLUSTER FOR SUSTAINABLE DEVELOPMENT

(ENRICH)

The University of Malta Engineering Research and Innovation Cluster for Sustainable Development (ENRICH) (hereinafter "the Cluster") is a multidisciplinary research initiative that aims to foster and promote interdisciplinary research and innovation aimed at **developing engineering solutions which address local and global challenges outlined in the Sustainable Development Goals (SDGs)**. Aligned with various international, EU and national agendas, the cluster strives to advance engineering excellence which drives transformative research and innovation aimed at enabling a healthier and fairer society and a **stronger and cleaner environment**, while **fostering inclusive economic growth**.

Figure 1 shows the cluster structured on five pillars which are inspired by five SDGs:

Pillar A: Good Health and Wellbeing	SDG 3
Pillar B: Clean Energy	SDG 7
Pillar C: Sustainable Industry, Innovation and Infrastructure	SDG 9
Pillar D: Sustainable Cities and Communities	SDG 11
Pillar E: Sustainable Consumption and Production	SDG 12

The objectives of the five pillars are based on the targets of the five SDGs as shown in Figure 2.

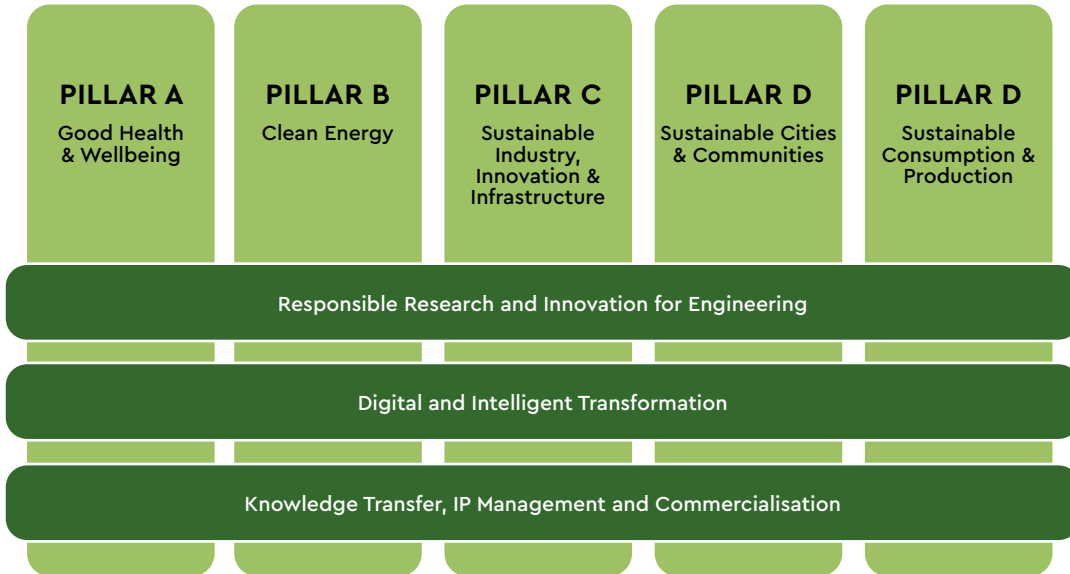


Figure 1: Cluster Pillars and Cross-cutting themes

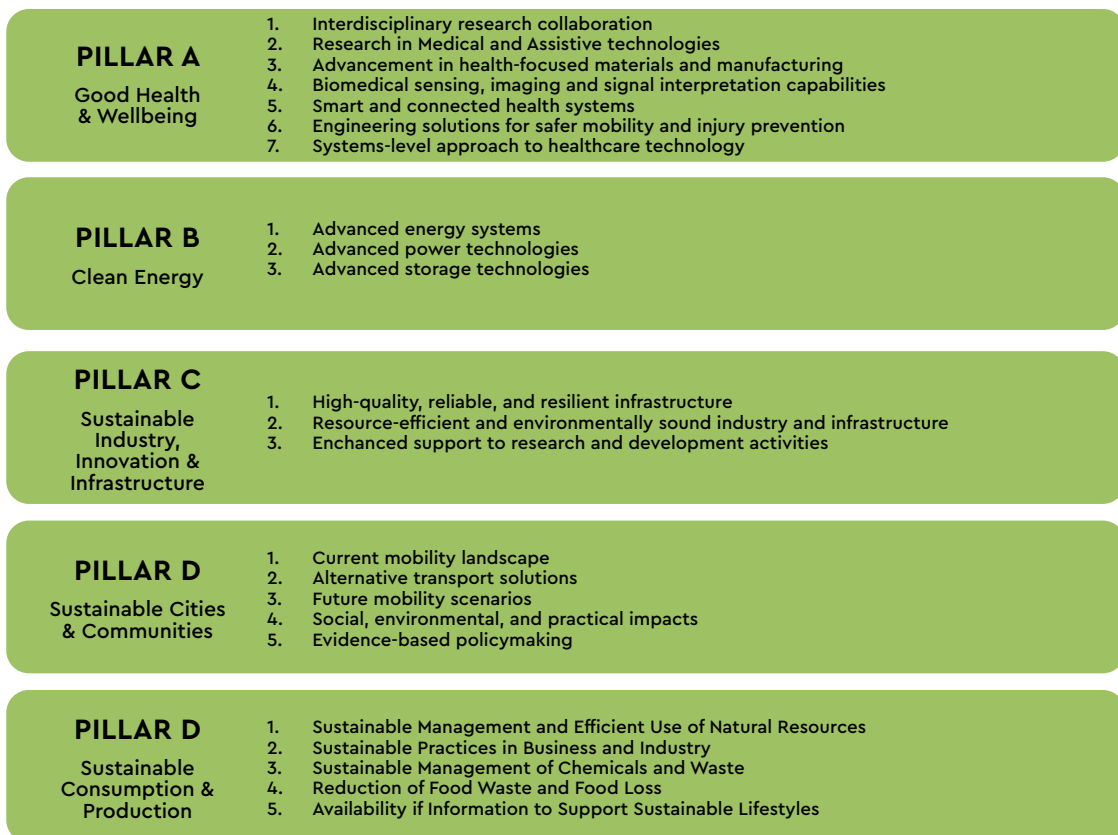


Figure 2: Cluster Pillars and Objectives

There shall be a Research Cluster and an Executive Committee.

I. THE RESEARCH CLUSTER

1. The organisational structure of the Cluster will be as follows:

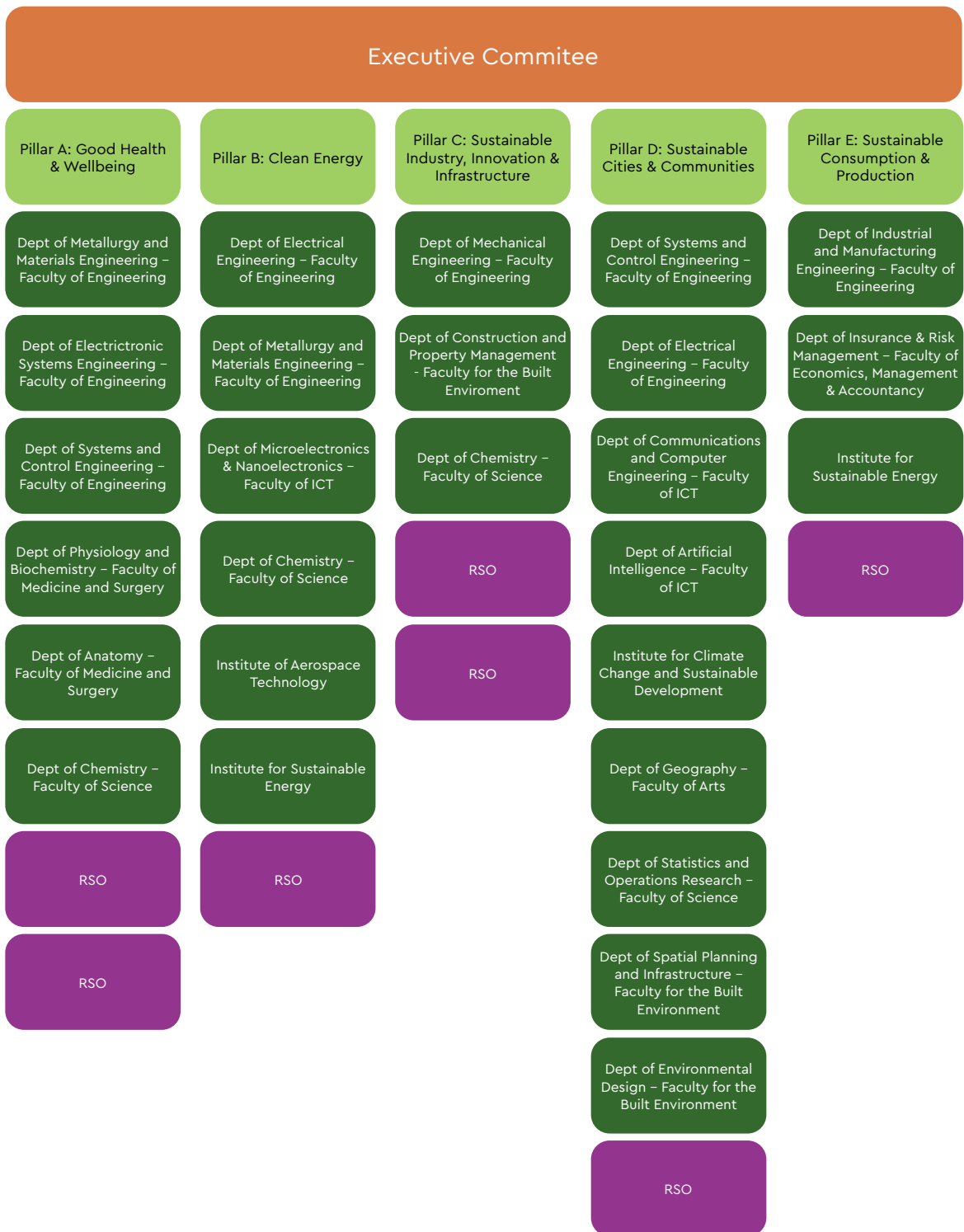


Figure 3: Organisational Structure

2. Membership of the Cluster shall proceed as follows:

- i. all academics who are Council appointed University of Malta members of staff with a proven research track in Sustainable Engineering and/or Engineering for Sustainable Development, or a background in a relevant field that can meaningfully contribute to the Cluster, are eligible to become members of the Cluster with voting rights.
- ii. researchers at UM who are not resident academics, such as RSOs, can be associate, non-voting members of the Cluster.
- iii. to attain membership, the applicants require the approval of the Executive Committee. Such approval shall not be unreasonably withheld and the Executive Committee shall adopt the following criteria for membership approval.

Prospective members should express their interest in joining the cluster, define their expertise and track record in the subject matter and outline how they plan to contribute towards the cluster's objectives. This may include evidence of peer reviewed publications published in international journals/conference proceedings or evidence of background/experience in a relevant field that can meaningfully contribute to the cluster. The cluster pillar which the prospective member would like to join shall be clearly identified. Prospective members shall also identify suitable project/s which could fall under the pillar they would be interested in joining and potential source of funds which could be tapped to fund such projects.

- iv. cluster members may be removed for:
 - a. Lack of communication: Consistently failing to respond adequately to Cluster activities or correspondence.
 - b. Unexcused absences: Missing two consecutive meetings without providing a written explanation acceptable to the Executive Committee.
 - c. Non-performance: Failing to complete agreed-upon deliverables.
 - d. Breach of trust: Violating fiduciary duties within the Cluster.
 - e. Conduct violations: Committing a breach of University Manual of Conduct and Procedures that undermines the trust of the Cluster membership.

3. The Research Cluster will initially comprise 5 Pillars and 3 Horizontals as approved by the Research Cluster Committee.

- i. The Pillars will initially be as follows:

Pillar A: Good Health and Wellbeing

This pillar supports the broader aims of Sustainable Development Goal 3, which aims to ensure healthy lives and promote wellbeing for everyone. While public health is often associated with medicine and clinical care, engineering plays a pivotal and complimentary role in advancing health outcomes. It drives the development of innovative medical technologies and materials, enhances systems for preventive care and enables personalised health solutions.

Pillar B: Clean Energy

The Clean Energy Pillar will develop enabling technology bricks aimed to empower and enhance the required transition to cleaner, more sustainable and more efficient generation, distribution and use of energy, in its major forms and figures. It is driven by the vision of Sustainable Development Goal 7 (SDG 7), under its theme of "Affordable and Clean Energy". The Pillar will serve and contribute to various national and international objectives, including Malta's Energy and Climate Plan and the EU's goal

of becoming the first climate-neutral continent by 2050. As stated in Malta's 2030, National Energy and Climate Plan, the national objective is to have an 11.5% share of renewable energy in the nation's gross final energy consumption by 2030.

Pillar C: Sustainable Industry, Innovation and Infrastructure

The third pillar is aligned with Sustainable Development Goal 9 which focuses on building resilient infrastructure, promoting inclusive and sustainable industrialisation, and fostering innovation. The aim of SDG 9 is to catalyse sustainable economic development by improving physical and digital infrastructure, supporting productive industries, and strengthening research and innovation systems. Infrastructure, industry, and innovation are considered interdependent pillars that form the backbone of modern economies. Without sustainable and inclusive growth in these areas, it is difficult for nations to achieve long-term prosperity, social equity, and environmental stewardship.

Pillar D: Sustainable Cities and Communities

The Sustainable Cities and Communities pillar is inspired by Sustainable Development Goal 11 (SDG 11), which calls on all to help build cities that are inclusive, safe, resilient, and sustainable. As more people move into towns and cities around the world, the way we design and manage urban areas is becoming more important than ever. Our cities must work for everyone. That means making sure they are environmentally responsible, economically strong, and rich in culture and community. Through this pillar, the University of Malta aims to be a leader in shaping better urban futures, especially for small island states and Mediterranean countries, where space, resources, and climate pressures create unique challenges.

Pillar E: Sustainable Consumption and Production

Aligned with the 12th Sustainable Development Goal (SDG 12), this pillar focuses on sustainable consumption and production patterns, which are critical for achieving economic development that remains within planetary boundaries. This goal lies at the intersection of environmental stewardship, economic efficiency, and social responsibility and is considered a cross-cutting enabler for many other SDGs, including climate action (SDG 13), clean water (SDG 6), decent work and economic growth (SDG 8), and sustainable cities and communities (SDG 11). This pillar aims to study and promote sustainable practices along the entire lifecycle of products and services, from extraction and design to production, distribution, use, and disposal. These objectives are global in scope but can be locally interpreted and implemented depending on national contexts, capacities, and levels of development.

- ii. The following horizontal themes run across the research cluster and shall serve as the enablers to address the pillars:

a. Responsible Research and Innovation for Engineering

This horizontal focuses on aligning the process and outcomes of engineering research with the values, needs, and expectations of society. This includes, but is not limited to: **Ethics & Governance:** Integrating ethical considerations in research and evaluating the long-term societal impacts of new technologies.

Inclusion: Promoting diverse perspectives in the research process to ensure equitable access to innovation.

Public Engagement & Openness: Creating two-way dialogues between researchers and stakeholders (including the general public) to ensure research addresses real-world challenges.

b. Digital and Intelligent Transformation

This theme serves as the digital and computational backbone, integrating data-driven methodologies across the research activities by utilising Industry 4.0/5.0 tools. This includes, but is not limited to:

Intelligent Optimisation: Using algorithms to solve multi-objective sustainable

engineering problems that are too complex for traditional methods.

Machine Learning: Applying supervised, unsupervised, and reinforcement learning to optimise complex system behaviours.

Predictive Analytics: Utilising historical and real-time data to forecast system performance, enabling proactive engineering solutions.

Cyber-Physical Systems and Digital Twins: Using smart infrastructure that can adapt to real-time changes and utilising virtual representations of physical assets to simulate performance and improve sustainability.

c. Knowledge Transfer, IP Management and Commercialisation

This horizontal ensures that the cluster's intellectual output is widely shared to maximise its influence on the global engineering community and where applicable, protected and sold. This includes, but is not limited to:

Strategic Dissemination: Sharing findings through high-impact journals, open-access repositories, and local and international conferences to build the cluster's reputation and influence.

IP Asset Management: Systematically identifying, documenting, and protecting patentable inventions and proprietary software to ensure a competitive advantage.

Market Translation: Streamlining the pathway from lab to market through industry partnerships, licensing, and support for technology demonstrators.

iii. The following criteria apply to the Pillars:

The number and thematic focus of the Cluster's Pillars shall be reviewed by the Executive Committee at least once every three years. Based on this review, the Executive Committee may decide to establish new Pillars, modify existing ones, or discontinue those deemed no longer aligned with the Cluster's objectives.

Each Pillar will be led by a designated Pillar Co-ordinator. The term of office for a Pillar Co-ordinator shall be three (3) years; renewable, subject to approval by the Executive Committee. A Pillar Co-ordinator will be appointed at the sole discretion of the Executive Committee, on the grounds of a proven track record of team leadership and/or relevant research expertise.

The initial Pillar Co-ordinators of the Cluster have already been identified at the proposal stage. Subsequent appointments shall be conducted either through formal nomination by Executive Committee members or via an expression of interest submitted by an active Pillar member. The final selection shall be decided by the Executive Committee following a simple majority vote of its members.

A Pillar Co-ordinator may be removed at his/her own request or due to breach of any of the criteria indicated in clause 2 (iv). Such removal shall require a two-thirds (2/3) majority vote of the Executive Committee. Upon obtaining this vote, the Executive Committee must first issue a formal written letter of explanation to the Co-ordinator, detailing the reasons for the proposed removal and offering a two-week period for response.

iv. During the course of its work, the Research Cluster may identify the need to establish additional pillars in response to additional sustainability criteria. However, the total number of Pillars within the Cluster shall not exceed six (6).

v. The following criteria apply to the establishment of new Pillars:

Any proposed new pillars must be relevant to the mission and vision statement of the cluster, hence linked to Sustainable Engineering or other objectives related to Engineering for Sustainable Development.

Active members of the Cluster may propose a new Pillar. A formal proposal shall be submitted to the Executive Committee, clearly showing the pillar objectives and their relevance to the Cluster's mission, the importance and potential impact of the

proposed research area, and a detailed outline of the resources (financial, personnel, and time) required for its operation.

Approval shall require a simple majority vote of the Executive Committee. Once approved, any new pillar will follow the procedure established in Clause 3 above.

vi. The following criteria apply to the removal of existing Pillars.

Any member of the Executive Committee or the Pillar Co-ordinator concerned may initiate the procedure for the removal of an existing Pillar through a written request providing a minimum of four weeks' notice ahead of the next meeting of the Executive Committee where such request is scheduled to be discussed.

Such removal shall be justified on justifiable grounds, such as:

- a. A demonstrable and persistent lack of scholarly output or project activity.
- b. Demonstrable redundancy or lack of adequate funding
- c. A fundamental misalignment with the Cluster's evolving research mission as determined by the Executive Committee.

The removal shall be approved by a simple majority vote of the Executive Committee.

4. The Research Cluster must maintain an up-to-date webpage, within the UM website framework detailing, among others, the statue, the organizational structure, current and past research projects, achievements, and deliverables.
5. The Cluster is subject to appropriate fiscal controls and audits that ensure that it remains true to its approved mission. All the UM's financial, human resources and research policies, IP policy, regulations, SOPs etc. shall apply to the Research Cluster.
6. The University Research Clusters Committee will review the Cluster every three years to decide whether it shall be allowed to continue its operations if an updated proposal for cluster continuation is submitted.
7. The Research Clusters Committee retains the right to dissolve the Cluster and/or the right to remove a cluster member for valid grounds, including among others, mismanagement, significant deviation from objectives, significant under achievement of targets/ deliverables, and transgressions related to research integrity.
8. Without prejudice to the fact that the funding of these Research Clusters by the UM significantly depends and is subject to the availability of governmental funding, the ENRICH Research Cluster will operate as a revenue centre with the ability to raise its own funds, subject to the UM's financial and procurement regulations. Any revenue generated by the Research Custer shall be used solely for re-injections into that same cluster fund.
9. Any grievances of any kind between the members of the Research Cluster and /or with Executive Committee should, in the first instance, be resolved internally using the Cluster governance structures. If unsuccessful, these should be brought to the immediate attention of the Research Clusters Committee. The Research Clusters Committee will investigate the grievances and aim to settle the issue amicably, it may if the need arises, propose remedial action where necessary for Council's approval.

II. THE EXECUTIVE COMMITTEE

1. The Cluster shall be managed and overseen by an Executive Committee approved by University Council on the recommendation of the Rector, and shall have the following structure:
 - i. The executive committee shall comprise the following:
 - a. Chair,
 - b. Deputy Chair,
 - c. Pillar coordinators,
 - d. one (1) academic representative,
 - e. one (1) RSO representative,
 - f. two (2) members from relevant stakeholders who are external to UM.
 - ii. The maximum number of members (who are Council appointed University of Malta Resident Academics) shall be seven (7), which shall include experts in the following areas: (a) Sustainable Engineering, (b) Engineering for Sustainable Development.
 - iii. The Faculty of Engineering shall nominate a secretary to the committee and provide administrative support.
2. The Executive Committee will serve for a term of three (3) years, after which it may be reappointed.
3. The procedure for the selection of the Executive Committee members and nomination of the Chair shall be as follows:
 - i. The chair and deputy chair, elected from amongst the members of the executive committee, shall be resident academics with a proven research and leadership track in Sustainable Engineering and/or Engineering for Sustainable Development. The chair and deputy chair shall be elected by simple majority of the Executive Committee, for a period of three years, which may be renewed. The appointment of the nominated Chair of the Executive Committee needs to be endorsed and approved by Rector.
 - ii. The pillar coordinators shall be elected from the members of the respective pillar by a simple majority vote.
 - iii. The participating FICS, other than the founding faculty, shall elect one (1) academic representative on the executive committee, by a simple majority vote.
 - iv. The Research Support Officers engaged on projects falling under the cluster pillars shall elect one (1) representative by a simple majority vote.
 - v. Two (2) representatives from external stakeholders relevant to the cluster shall be nominated and appointed.
4. The quorum of the Executive Committee meetings of the Board shall be 50% of the members with voting rights.
5. Apart from keeping regular Agendas and Minutes of meetings, the Committee shall regulate its own procedures during meetings, provided that every decision requires the

approval of the majority of members at said meeting. It is recommended that the Executive Committee should meet regularly and as necessary, but should hold not less than three (3) meetings annually.

6. Subcommittees may be set up at the discretion of the Executive Committee and shall be regulated internally by it.
7. The Executive Committee shall submit annual progress reports to the University's Research Clusters Committee. In this respect the Committee shall appoint a secretary for minute taking and recording purposes.
8. Any grievances of any kind between the members of the Executive Committee and /or with the Research Cluster should, in the first instance, be resolved internally using the Cluster governance structures. If unsuccessful, these should be brought to the immediate attention of the Research Clusters Committee, it may if the need arises, propose remedial action where necessary for Council's approval.

III. DISTRIBUTION AND OVERSIGHT OF FUNDS

1. All funds shall be managed and all expenditures formally approved by the Chair of the Cluster. The management of funds and approval of expenditures associated to the projects may be delegated to the respective project leaders. These approvals are only a step in the standard procedures adopted by the University for the approval and disbursement of funds and expenses, which should be followed at all times.
2. As per Cluster Funding regulations, a Cluster is allowed to make changes to the financial plan that can take the form of either: (a) a shift from one budget heading to another; or (b) a transfer of funds from one year to another. While such shifts are regulated by the cluster funding rules, decisions in relation to such shifts require the approval of the Executive Committee by simple majority voting of members present at the Executive Committee meeting.

VI. THE STATUTE

1. This Statute is without prejudice to the Research Clusters Launch Plan Document issued by the Rector, dated 19 June 2023.
2. This Statute and any subsequent amendments thereto must be approved by the Council of the University of Malta.
3. No signature shall be required for the validity of this Statute. The Statute shall be deemed duly adopted upon approval by the Council, and such approval shall be evidenced by the official record of the Council's decision, including the date and time of adoption as recorded in the Council's minutes.
4. The Statute shall enter into force upon such approval, unless the Council decision provides otherwise.

Executive Committee Members for 2026 to 2029

Prof. Inġ. Paul Refalo

Prof Inġ. Andrew Sammut

Prof. Inġ. Bertram Mallia

Prof. Inġ. Michael Galea

Dr Brian Ellul Grech

Dr Inġ. Luana Chetcuti Zammit

One representative from participating FICS – tba

One representative from the engaged Research Support Officers – tba

Two external stakeholders – tba