unite! University Network for Innovation, Technology and Engineering

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Green Standards

MS1 Development of green standards for HEI

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Introduction

A key goal of the Green Standards is to contribute to the process of creation a common way of understanding the general concept of a green university that actively supports and contributes the process of green transformation in the economy and society as well.

The Green Standards document contains elements regarding the integration of green transition requirements into research activities in HEI, elements regarding the integration of green transition topics and requirements into the regular, educational activities of the HEI, and requirements that should be met in HEI day to day activity (green campus).

Green standards for research activities in HEI

GR1. Strategy/development plan of the institution/organisational unit for research and/or R&D activities should correspond/refer to in identifiable way to at least 7 goals or all goals directly related to green transition (goals: 9,12,13,15) from the list of Sustainable Development Goals (SDGs* see annex at the end of the document).

Primary quantitative indicator: number of goals with references (assigned) in the strategy/development plan or other similar documents.

Secondary qualitative indicators: expert assessment (related to a small extent, related to a certain extent, related substantially etc) of the scope/level of relevance of the strategy/development plan to the given goal from SDGs.

GR2. Existence of internal policy regulations for monitoring compliance and assessing progress as it relates to the links/correspondence between the research strategy and the specific goals from the SDGs.

Primary indicator: expert assessment.

GR3. The university should promote the need of creating new thematic communities and supporting existing thematic communities (formal or informal) in the fields related to SDGs.

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Primary indicator: number of scientific contributions at conferences/journals that are directly related to SDGs (can e.g. be collected from Elsevier PURE)

GR4. Internal policy in the institution. The institution should ensure

- Existence of procedures or mechanisms for evaluating/assessing the research development plan against SDGs..
- Existence of a system of support/promotion of R&D projects directly linked to the achievement of the selected goals from the SDGs list.
- Existence of a system of preferences/promotions regarding the evaluation of research activity/achievements in view of categories mentioned in the SDGs.
- Existence of a rewarding system depending on the level of compliance of the above mentioned actions regarding the SDGs.
- Existence of mechanisms to assess planned/prepared research projects in terms of the environmental impact of activities during project implementation
- Existence of mechanisms to assess planned/prepared research projects in view of expected, future impact in terms of the environmental impact of activities during project implementation
- Existence of mechanisms to assess the results achieved by projects in terms of environmental impact.
- Existence of mechanisms to promote research activities designed to minimise environmental impact (for example, promoting teamwork organised remotely, promoting proper planning of activities in terms of energy consumption, water consumption, use of means of transport, the need to perform energy-intensive activities repeatedly, etc.).

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Green Standards for educational activities in the HEI

GE1. The institution should include selected goals from the SDGs in the processes of developing new study programmes and modifying existing curricula.

Primary indicator: number of learning outcomes for the study programme related to the selected goals from SDGs.
Secondary indicator(s): expert's assessment of the level of relevance of selected learning outcomes to the given goals from SDGs.
Indicator: number of goals from SDGs list considered in the educational activities of institution/department/unit in the framework of bachelor/master/postgraduate programme.

GE2. The institution should have in its educational offer at least one module/component/whole programme on bachelor/master/postgraduate level directly linked to the selected goal/goals from the list SDGs.

GE3. The institution should have in its educational offer at least one module/component/whole programme on bachelor/master/postgraduate level in the field, which would include aspects referred to LCA (Life Cycle Assessment) and/or LCC (Life Cycle Cost):

- Energy and climate change
- Neutral (low emissions) infrastructural systems
- Waste management
- Neutral (low emissions) transportation
- Sustainability (resilience, cyber security, inclusion, social responsibility etc.)
- Etc.

GE4. The institution should take into account the need to meet the selected goals in the SDGs in the mechanisms/procedures for creating and modifying curriculum. These mechanisms should also relate to external stakeholder (employers, local authorities etc.) cooperation.

GE5. Learning outcomes for selected (all) fields (majors) of study should include transparent references to the chosen goals from SDGs. The number of goals associated in a transparent way with the learning outcomes should vary depending on the area of the industry/business/service for society/science to which the programme of study for a particular field (major) of study directly relates.

GE6. The institution should continuously monitor the core/primary indicators showing the level of connection between the learning outcomes for the fields (majors) of study and the needs for green transformation identified by the list of SDGs (or other relevant document)

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especially in areas related to energy savings, use of natural resources, greenhouse gas emissions, carbon footprint, climate friendly solutions etc.

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Green Campus Standards

GC1. Existence of a system for continuous/periodical monitoring the degree/level of climate neutrality of activities undertaken by the university as part of its on-campus activities.

GC2. Existence of a system for monitoring the level/distance to climate neutrality (zero emissions) of activities undertaken in and around the institution in the conduct of a) educational b) research activities.

GC3. Existence of definition of KPIs for measuring the impact of green campus related activities. Continuous/periodical monitoring of green transformation related KPIs.

GC4. Creation of new/stimulating existing thematic groups (student's research organisations, young researcher's group etc.) active in the areas related to selected goals form SDGs directly on the university campus.

GC5. Widespread awareness within the whole academic community of the need to undertake activities directly on campus, either directly or indirectly linked to selected goals from the SDGs.

GC6. Monitoring (continuous) of resource use (energy raw materials, means of transport, CO2 emissions, etc.) in the institution.

GC7. Existence of activities of the academic community in terms of well-being principles implementation, sustainable distribution among the staff (categories of staff) of duties and responsibilities in terms of teaching activity, research activity, and organisational activity. Sustainability and its criteria in the process of curriculum development.

GC8. The existence of internal procedures to monitor and control the sustainable use of the available working space in the campus, uniform (or close to uniform) distribution of teaching activities in the semester timetable among weeks and teacher's workload, sustainable distribution of student's workload in view of working week and whole semester. The ratio of working space with limited access versus open space (non-limited access) in the campus, well-balanced indicators of lecture rooms usage level for teaching purposes.

GC9. Existence of greenhouse gas emission reduction program/plan on the campus.

GC10. Existence of the use of paper and plastic strikethrough reduction program/plan on the campus.

GC11. Existence of water usage reduction/water conservation/water recycling program.

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Existence of energy saving actions/programs on the campus.

GC13. The existence of transparent policy implemented in the campus and/or activities of academic community (tangible outcomes) in the fields:

- Increasing (keeping stable at least) the area of ground surfaces (i.e., soil, grass, concrete block, synthetic field, permeable pavements near campus tree canopies etc.) dedicated for water absorption in the campus (if any).
- Increasing (keeping constant at least) of the share of campus area covered in vegetation in the form similar to the forest/city park/garden (an area with trees/bushes and scrub/meadow and its biodiversity, natural or planted)
- Increasing (keeping constant at least) of the share of campus area covered in vegetation in the form close or similar to the form of forest/city park/garden (an area with trees/bushes and scrub/meadow and its biodiversity, natural or planted)
- Increasing (keeping constant at least) the share of the area on campus covered in planted vegetation (green walls, internal gardens, green roofs, internal planting in the buildings, vertical gardens etc.)
- Increasing the share of renewable energy used by university in day to day activities
- create and use of campus renewable energy sources in an efficient manner (including planning campus activities in a way that allows the most efficient use of renewable energy sources under the given conditions)
- Integrating sustainability, low-carbon, electricity consumption, etc. aspects into the administrative activities of the university (for example, the university's purchasing system).

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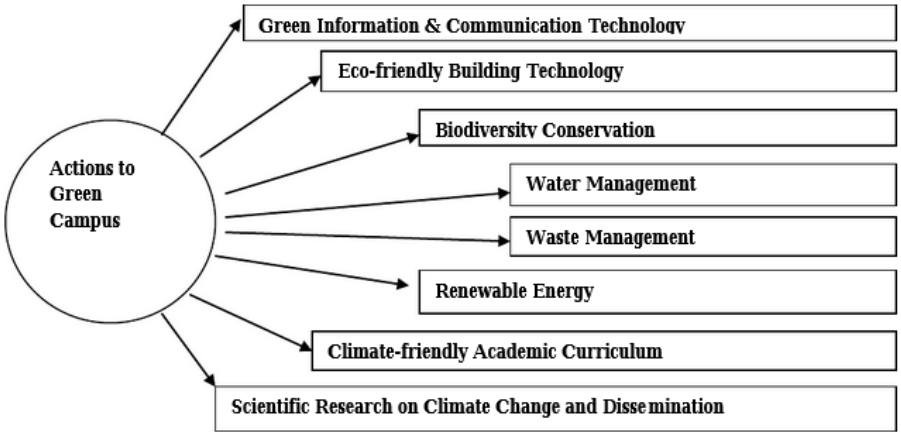
Green Campus, The Role Model

GREEN CAMPUS AREAS TO COVER



Source: Islam, Mohammed Syedul. (2015). Green Campus: A New Roadmap to Combat Climate Vulnerability

GREEN CAMPUS PROGRAMME STRATEGICAL APPROACH

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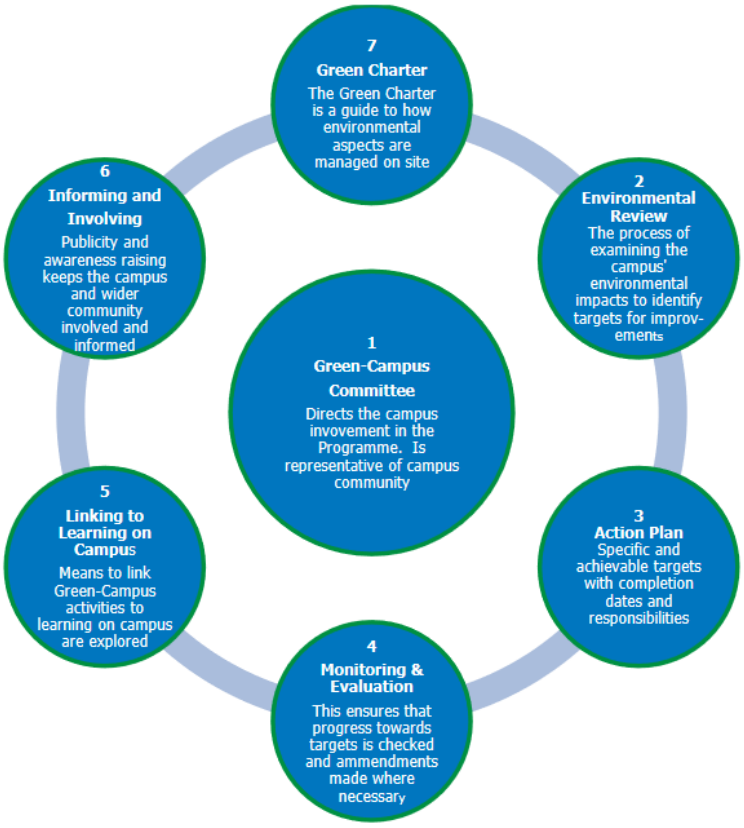

Source: *Green-Campus Guidebook 2018-2019*, Green-Campus Office Environmental Education Unit An Taisce, Dublin

MAIN AREAS TO MEASURE UNI CAMPUS GREENNESS (Indicators):

1. **Stakeholders involvement**
   a) Periodic measurement of the level of awareness of green aspects among academic and administrative staff of the University, students and partners of the University (short, up to 10 questions, quantitative survey, 5-point Likert scale, every year)

2. **Air Pollution Management**
   a) Establishment of oxygen park, plantation of oxygen rich plants
   b) "No Smoking, no tobacco" areas in Campus (number, range)
   c) No Vehicle Day (yes/ no)
   d) Bike transport support (yes/ no)
      a. number of bicycle parking spaces
      b. number of showers/changing rooms for cyclists on campus
   e) Compulsory pollution check-up (data from the air sensors placed on campus)

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f) Number of display boards on college campus with information about quality of air.
g) Periodic rallies and road shows for awareness among stakeholders.
h) Efficiency of use of air conditioning systems
i) Maintain data for flora of college campus

3. Noise Pollution Management

a) Silence zones in the campus
b) Noise control in the campus
c) No Pressure horns for vehicles

4. Human Health and Security Management

a) Controlling and monitoring of entries and exits
b) Sanitary napkin vending machines in common rooms
c) Yoga /Meditation/rest area for staff
d) **Awareness campaign for society** (quantitative, periodic questionnaire up to 10 questions, Likert scale, every year + social media engagement (messages, tags, or mentions, conversion rate - the percentage of visitors who complete a desired action, perhaps Net Promoter Score (NPS) – how likely stakeholders are satisfied with the campus and will recommend it to others as a benchmark to follow etc.)
e) Awareness campaign for aids, cancer, TB and other diseases in coordination with PHC (see above)
f) Organizing blood donation camps (number)
g) Fire safety (campaign/ level of awareness)
h) Standard Operating Procedures (SOP's) on safety in laboratory and first aid box
i) Emergency phone numbers
j) Controlled area for storage of hazardous chemicals

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5. Soil Pollution Management
   a) Vermicompost plants at Uni (use of bio-fertilizers)
   b) Rain water harvesting (number, cubic meters)
   c) Plastic free campus (places where plastic is used)

6. Other Sectors for Environment Management
   a) Green public procurement
   b) Waste control chemicals and e-waste management
   c) Use of LED bulbs at Uni (percentage of)
   d) Conducting energy audit (BSM effectiveness check-out)
   e) Dustbins on the Premises
   f) Waste control in canteen
   g) No use of plastic in canteen
   h) Use of dust proof chalks in classrooms (yes/ no/ percentage of)
   i) Digital workflow

Green Objectives for Uni Campus

Waste Management

- To increase the green cover in the campus.
- To adopt methods for waste segregation
- Take appropriate actions to reduce or recycle municipal waste inside the campus.
- To manage, collect and dispose e-waste appropriately
- To reduce hazardous waste and its management
- Actions taken to reduce consumption of plastic in the campus.
- To encourage paperless work culture and recycling/ reuse of paper (electronic signature for all employees, fully electronic document flow, student final papers in digital form, etc.)
- Display waste management instructions/alerts at prominent/relevant locations in the campus.

Water Management

Adopting following measures in campus to reduce water consumption:

- Grey water in flushes (share)
- Rain water harvesting (reduction of the fee for lost water retention, if justified)
- Using the existing potential of green areas
- Strengthening of blue-green infrastructure (rain gardens, wetlands, green roofs and walls, etc.), elimination of surface urban heat islands
- Change of taps which are either more water efficient or sensor-based taps
- Use of recycled water for watering plants, trees etc. (share)

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- Display water management instructions/alerts at prominent/relevant locations in the campus.

Climate Change

- Suitable action taken to reduce greenhouse gas emissions due to energy consumption use of energy efficient lamps/sensor-based lamps wherever possible like corridors, toilets etc.
- use of energy efficient equipment in laboratories/ classrooms/ canteen, this can range from air – conditioners, refrigerators, condensers, replacing desktops with laptops, etc.
- effective management of HVAC systems in buildings.
- monitoring the entry of vehicles in the college in terms of their fuel efficiency/ hybrid/ battery operated vehicles.
- promotion of green transport through the installation of a charging point (electric and hybrid cars, scooters, etc.).
- promoting the use of public transport.
- to establish a system for preparing college emissions/environmental inventory.
- creating awareness by organizing seminars, debates, activities related to climate change,
- environmental protection, and environmental issues.
- promoting some projects/experiments in the education system as part of a regular curriculum which is related to environmental aspects.
- actions taken to reduce Greenhouse Gas (GHG) emissions.
- to encourage the concept of green brigade so as to maximize the student's involvement.
- promoting passive/low energy solutions for newly constructed buildings.

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KPIs for Green Campus:

1. Reduction of greenhouse gas emissions (GHG) - indirectly by reducing the consumption of energy from conventional fuels (according to national indicators, e.g. KOBIZE) (tons/year and % change with regard to base year);
2. Waste management/waste reduction - prevention, reuse, recycling (tons/year and % change with regard to base year);
3. Reduced water consumption (m^3/year and % change with regard to base year);
4. Increased water harvesting (m^3/year and % change with regard to base year);
5. Reduced energy consumption (e.g. for campus buildings) (kWh/year and % change with regard to base year);
6. Energy production from Renewable Energy Sources (kWh/year and % change with regard to base year);
7. Biodiversity/areas progressing towards improvement or restoration/increasing the share of green areas (m^2);
8. Communication, dissemination, awareness rising:
    - number of promotional campaigns (e.g. Green Campus Day, European Research Night);
    - website visits/ likes (e.g. website providing information on recycling and waste status at the University);
    - promotional campaigns for the youngest (number of "trained" kids);
    - cooperation with the city/region (references to climate protection policy, climate change policy, etc.);
    - behavioural change - changing the perception of the university campus as a green public space (surveys; number of entities/individuals changing behaviour);

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Annex I

*UN Sustainable Development Goals (source: https://sdgs.un.org/goals)

1. End poverty in all its forms everywhere
2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
3. Ensure healthy lives and promote well-being for all at all ages
4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
5. Achieve gender equality and empower all women and girls
6. Ensure availability and sustainable management of water and sanitation for all
7. Ensure access to affordable, reliable, sustainable and modern energy for all
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
10. Reduce inequality within and among countries
11. Make cities and human settlements inclusive, safe, resilient and sustainable
12. Ensure sustainable consumption and production patterns
13. Take urgent action to combat climate change and its impacts
14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development
15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
17. Strengthen the means of implementation and revitalise the Global Partnership for Sustainable Development

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